Aviation safety investigations & reports

Britten Norman Ltd BN-2A-26, VH-XFF

Investigation number:
199900220
Status: Completed

History of the flight

Uzu Air conducted passenger and freight operations between Horn Island and the island communities in the Torres Strait. It operated single-engine Cessna models 206 and 208 aircraft, and twin-engine Britten Norman Islander aircraft.

On the morning of the accident, the pilot flew a company Cessna 206 aircraft from Horn Island to Yam, Coconut, and Badu Islands, and then returned to Horn Island. The total flight time was about 93 minutes.

The pilot's schedule during the afternoon was to fly from Horn Island to Coconut, Yam, York, and Coconut Islands and then back to Horn Island, departing at 1330 eastern standard time. The flight was to be conducted in Islander, VH-XFF. Three passengers and about 130 kg freight were to be carried on the Horn Island - Coconut Island sector. Another company pilot had completed three flights in XFF earlier in the day for a total of 1.9 hours. He reported that the aircraft operated normally.

Witnesses at Horn Island reported that the preparation for the flight, and the subsequent departure of the aircraft at 1350, proceeded normally. The pilot of another company aircraft heard the pilot of XFF report 15 NM SW of Coconut Island at 3,500 ft. A few minutes later, the pilot reported downwind for runway 27 at Coconut Island. Both transmissions sounded normal.

Three members of the Coconut Island community reported that, at about 1410, they were on the beach at the eastern extremity of the island, about 250 m from the runway threshold and close to the extended runway centreline. Their recollections of the progress of the aircraft in the Coconut Island circuit are as follows: the aircraft joined the downwind leg and flew a left circuit for runway 27; the aircraft appeared to fly a normal approach until it passed over their position at an altitude of 200-300 ft; and it then veered left and commenced a shallow climb before suddenly rolling right and descending steeply onto a tidal flat, about 30 m seaward from the high-water mark, and about 200 m from their position.

Injuries to persons

Injuries	Fatal	Serious	Minor	None	Total

Crew	1	-	-	-	1
Passenger	2	1	-	-	3
Ground	-	-	-	-	-
Total	**3**	**1**	**-**	**-**	**4**

Damage to aircraft

Severe disruption to the outer right wing and nose sections occurred as a result of impact forces. Less significant damage occurred to the outer left wing leading edge. The fuselage fractured just aft of the wing trailing edge. The wing attachment points failed, allowing the wing to rotate forward and partially crush the cockpit/forward cabin area. There was a compression fracture of the upper surface of the left horizontal stabiliser near the inboard end. The outboard end of the left stabiliser had been bent upwards by ground impact.

Other damage

There was no other damage.

Personnel

- **Pilot**

Age:	27
Licence category:	Commercial
Medical certificate:	Class 1 (valid to 27 June 1999)
Instrument rating:	Command Multi Engine
Total flying hours:	2,540
Total on type:	197
Total last 90 days:	205
Total last 24 hours:	2

Last flight check:	12 November 1998

- **Flying experience and qualifications**
  The pilot began flying in 1990 and gained a Private Pilot (Aeroplane) Licence on 21 March 1991. She was issued with a Commercial Pilot Licence on 18 August 1994 and gained a Command Multi-engine Instrument Rating on 21 October 1996. On 1 February 1995, the pilot qualified as a Grade 3 Fixed Wing flying instructor, and gained a Grade 1 instructor rating on 25 September 1997. She was issued with a multi-engine training approval on 30 March 1998.

  As well as being qualified to fly Islander aircraft, the pilot held endorsements on a number of other twin-engine aircraft, including Aero Commander, Beechcraft Baron, Cessna 310, Piper's Navajo, Seneca, and Seminole.

  The pilot completed her endorsement on the Islander on 10 September 1998 and a proficiency check on 16 September 1998. The endorsement and check reports indicated that the pilot operated the aircraft at a high standard, and was disciplined and thorough with checks and procedures. No significant deficiencies were recorded. The training included asymmetric handling sequences, one of which was a simulated single-engine go-around from final approach with the wing flaps at the take-off position.

  The pilot completed airfield checks at a number of airstrips in the Torres Strait, including Coconut Island, on 12 November 1998.

- **Seven-day history**
  The following summary of the pilot's flight and duty times was taken from company records:

Date	Duty hours	Flight time (hours)
9 January	0630-1800	4.1
10 January	day off	nil
11 January	1200-1800	nil
12 January	0700-1800	4.8
13 January	reserve	nil
14 January	0700-1830	7.3
15 January	day off	nil

  Associates of the pilot reported that she appeared in good health on the morning of the accident.

- **Seat cushions**
  The pilot was approximately 157 cm tall. The operator reported that the pilot used two foam-rubber cushions (one on the seat

and the other against the seat back) to adjust her seating position to enable her to achieve full movement of the cockpit controls. The seat cushions normally used by the pilot were not found. No person was found who could recall the pilot taking the cushions to the aircraft before the flight. However, the cushions were not at the company office where they were usually stored when not in use. Assuming they were on the aircraft, it is likely that they were lost as a result of the post-accident tidal and/or wind action.

Aircraft information

- **Significant particulars**

Registration:	VH-XFF
Manufacturer:	Britten Norman Pty Ltd
Model:	BN2A-26 Islander
Serial number:	C763
Country of manufacture:	United Kingdom
Engines:	Lycoming O-540-E4C5

- **Certificate of airworthiness**

Number:	CS/34
Issued:	18 December 1989
Category of operation:	Normal

- **Certificate of registration**

Holder:	Uzu Air Pty Ltd
Number:	CNS/00034/04
Issued:	6 January 1994

- **Maintenance release**

Number:	285070
Issued:	5 December 1998
Valid to:	5 December 1999
Total airframe hours:	16,775.3 hrs

- **Weight and balance**
  The aircraft weight at the time of the occurrence was about 2,759 kg. The maximum allowable take-off weight was 2,994 kg. The centre of gravity was within limits.
- **Maintenance history**
  An examination of the maintenance history of XFF revealed that the aircraft had been inspected on 6 November 1998 by an airworthiness officer from the Civil Aviation Safety Authority. As a result of the inspection, Aircraft Survey Report (ASR)111642 was issued to the maintenance organisation. The report listed five Code B and one Code C defects. Persuant to Civil Aviation Regulation 38(1) the maintenance organisation was required to assess and rectify Code B defects as necessary. CASA form ASSP 604 states that "An endorsement of the maintenance release in accordance with Civil Aviation Regulation 50 may be required". Yes and no boxes, on the Aircraft Survey Report (ASR)111642 dated 6 November 1998, to indicate whether maintenance release endorsement was required, were not entered. Code C defects constitute "a contravention of requirements imposed under the Civil Aviation Regulations" and were required to be assessed and rectified as necessary.

  The defects were:

  - an oil leak in the left engine - Code B;
  - the left landing gear torque links were worn at the pivot points - Code B;
  - cracks in the left landing gear cowling - Code B;
  - surface corrosion on the underside of the left wingtip - Code B;
  - a broken bonding wire on the right flap - Code B; and
  - there was no load limitation placard on the rear baggage door - Code C.

  The aircraft log book recorded that the last Schedule 5 (100 hourly) maintenance on the aircraft was completed on 5 December 1998. There was no record that the defects notified in ASR 111642 had been rectified during the maintenance. The engineering manager had certified an entry in the log book regarding the inspection. It stated that there were no defects noted during the maintenance. The aircraft was flown the following day.

  An entry in the aircraft log book dated 02 January 1999 listed the following maintenance actions:

  - An oil leak from the left engine was rectified by the removal of the engine sump, replacement of the sump gasket and re-fitment of the sump assembly.
  - Surface corrosion on the left wing tip was repaired.
  - Stop drilling was conducted to control cracks in the left main landing gear leg fairing.
  - A left engine cowl latch was replaced.
  - Both left and right magnetos on the left engine were replaced with overhauled units. This was done for convenience as the replaced units were approaching the end of their in-service lives.
  - The left engine lower mounts were replaced.
  - The engine dual tachometer (RPM) instrument was repaired and refitted to the aircraft.
  - Support brackets were fitted to the left engine exhaust.
  - Bonding wire on the right hand flap was replaced.

- The right engine starter was lubricated.
- Engine intake ducting to the left engine was replaced because of oil contamination.

There was no record of any maintenance being conducted on the left landing gear torque links.

At the time the maintenance was carried out, the aircraft had completed 19.6 flying hours since the issue of the maintenance release on 5 December 1998. The aircraft then completed a further 43.9 flying hours before the commencement of the accident flight. There was no record of any maintenance action being undertaken during this intervening period relating the rectification actions or any other matter.

Meteorological information

The Bureau of Meteorology advised that the probable weather at Coconut Island around the time of the accident was as follows:

- Isolated to scattered showers, and isolated thunderstorms;
- North-westerly wind at about 15 kts;
- Generally good visibility but reducing in precipitation; and
- Broken cumulus cloud with a base at 2,000 ft, with broken higher layers.

At 1400, the automatic weather station at Coconut Island recorded an ambient temperature of 30 degrees Celsius, a dew point of 25 degrees Celsius, and an atmospheric pressure of 1007 hectopascals. Witnesses at the island reported that the weather was fine at the time of the accident, with the wind gusting from the northwest.

Aids to navigation

Not relevant

Communications

The pilot was communicating on the area frequency of 120.3 MHz during the flight. The pilot of another aircraft heard transmissions from the pilot of the Islander on that frequency.

Aerodrome information

Coconut Island is about 110 km NE of Thursday Island. The island is composed of coral sand and is predominantly flat. It extends east-west for about 1.75 km, and is less than 0.5 km across, north-south, at its widest part. The airstrip occupies the eastern portion of the island and is aligned east-west. It is 880 m long, 60 m wide and composed of grassed coral sand. On the southern side of the strip, and extending for most of its length, is a sand dune approximately 5 m high with coconut palms growing on it.

The threshold for runway 27 is about 350 m from the eastern extremity of the island. At the time of the accident, the local refuse tip was situated between the end of the strip and the eastern extremity of the island, and north of the extended centreline of the runway. A dirt road linked the community living area and the refuse tip. The road followed the southern side of the strip to the eastern end before turning north towards the refuse tip area.

Flight recorders

The aircraft was not equipped with flight data or cockpit voice recorders, nor was such equipment required by regulation.

Wreckage examination

The wreckage was subjected to tidal salt water immersion for 3 days before it was examined.

- **Airframe**
  An examination of the airframe did not reveal any fault that might have contributed to the accident. All flying controls were capable of normal operation prior to impact. The wing flaps were in the full-down position at impact. The right wing fuel tank had been ruptured by the impact, while the left wing tank was intact. A significant quantity of fuel remained in the left tank.
- **Cabin**
  The pilot's seat was mounted on a frame attached to the cabin floor. The seat could be adjusted fore and aft on the frame, but there was no vertical adjustment. During the impact, the frame partially collapsed down and towards the right. The seat was locked in the full-forward position. The pilot's lap-sash harness assembly remained intact during the impact.

  The rudder pedals were adjustable fore-aft into a locked position as selected by the pilot. The rudder pedals on the left side of the cockpit were locked one notch forward of the rearmost position. Damage indicated that the pedals were locked in that position at impact.

  The cabin was fitted with four bench-type passenger seats, each capable of seating two persons. The seat frames were secured to the floor. Two lap safety harnesses were attached to each seat frame.

  At the initial examination of the wreckage, there were no passenger seats in the cabin. All seats had been removed from the cabin during the rescue activities. One seat, found above the high-water mark, was recovered for examination. The remaining seats were not found and probably disappeared as a result of tidal action.

  Those involved in the initial response following the accident indicated that one seat remained attached to the cabin floor and was levered free with a crow bar. The remaining seats were loose, apparently after becoming detached during the impact sequence. Examination of the seat attachment points indicated that the first, second and third row seat frames had failed due to impact induced stresses. There was significant bending forward and to the right. Examination of the seat found above the high-water mark indicated that it was the rear seat that had been levered from the floor during the rescue activities.

Apart from the two safety harnesses attached to the rear seat, only one-half of one other passenger harness was recovered. A section of a broken seat attachment bracket remained attached to the harness. The original location of the harness piece could not be determined.

- **Engines and propellers**
  Both engines and propellers were recovered from the accident site and examined. Disruption of the airframe prevented determination of the position of the engine controls at impact.

  The right propeller exhibited signs of severe tip curl and leading-edge abrasion, consistent with the engine developing high power at impact. Examination of the engine did not reveal any condition likely to have prevented normal engine operation. Salt-water corrosion damage prevented a detailed examination of the carburettor.

  The left propeller showed little evidence of rotational damage. The propeller had not been feathered. Laboratory examination of a failure of the left engine mixture control rod confirmed that the failure occurred at impact as a result of impact induced stresses. Examination of the engine did not reveal any condition likely to have prevented normal operation. After sand and other internal debris were removed, the magnetos were bench run for more than 30 minutes. They functioned normally during that period. The condition of the carburettor prevented confirmation of its serviceability at impact.

- **Carburettor heat system**
  The left and right carburettor heat control levers were mounted on the lower quadrant of the cockpit centre pedestal. Both levers had been bent flat against the pedestal face, and were in the OFF position.

  The carburettor air intake system of each engine had been destroyed during the impact sequence. Neither the pre-impact position of the normal/alternate air doors, nor the condition of the hot air flexible hose, could be determined.

Impact information

Consideration of the wing and nose section crush lines, along with the nature of damage to the fuselage and horizontal stabiliser, indicated that the aircraft was yawing and rolling left at impact. The pitch attitude at impact was 40-50 degrees nose-down. The right wing struck the ground first and bore the principal impact. The nose section, and then the left wing outboard leading edge struck the ground. Because of tidal activity, no ground impact marks were evident. The aircraft speed at impact could not be determined.

Medical and pathological information

The Bureau had not received the medical and pathological information at the time of the release of this report.

Fire

There was no fire.

Survival aspects

The deformation of the nose section and the forward/downward rotation of the wing significantly reduced the occupiable cockpit space. This, along with the impact forces, meant that the chances of survival for the pilot were low.

The surviving passenger indicated that she occupied the seat row immediately behind the pilot. The other two passengers occupied the second and third rows. The failure of the seat-to-floor attachments of the occupied seats in the aircraft cabin indicated that deceleration forces experienced in this area were high, thereby reducing survivability.

Aircraft operation

- **Emergency operating procedures**
  Section 4 of the Owner's Handbook for the aircraft type addresses emergency operating procedures. Relevant extracts from the section include the following:

  > "Warning ...
  > It is essential to raise the flaps to the fully up position to achieve the optimum climb gradient."
  >
  > "Critical engine
  > Failure of the left engine has the most adverse effect on the handling and performance of the aircraft."
  >
  > "Landing with one engine inoperative
  > Make an initial approach to approximately 65 kt (75 m.p.h.) IAS with the flaps selected to TAKE-OFF (25 deg). When committed for landing, select FLAPS DOWN (56 deg) and reduce speed over the threshold to a value compatible with the information scheduled in Sect. 6 and touchdown normally."

  Section 3, Operating Instructions, of the Owner's Handbook, included the following information:

  > "Touch down
  > Initial approach should be made at 65 kts (75 m.p.h.) IAS with flaps at TAKE-OFF (25 deg). After selection of FLAPS DOWN (56 deg) the speed may be progressively reduced to the appropriate threshold speed quoted in Section 6. After touch down allow the nose wheel to sink gently and apply the brakes as required."
  >
  > "Baulked landing
  > Apply full power smoothly to the engines and be prepared to deal with a nose-up change in trim which can require a strong stick force, especially if the airspeed is low. Establish a positive climb away, select flaps to T.O., trim the aeroplane and accelerate to 61 kts (70 m.p.h.). Select flaps UP at a height above 200 feet and climb out at 65 kts (75 m.p.h.) IAS."

- **Carburettor icing**
  Section 3, Operating Instructions, of the Owner's Handbook, included the following information:

  > "260 H.P. ISLANDER
  >
  > Use of carburettor heat
  > Carburettor icing can occur, unexpectedly, in various combinations of atmospheric conditions. On damp, cloudy or foggy days, regardless of the outside temperature, keep a sharp watch for power loss, indicated by a decrease in manifold pressure. When this is seen, apply full carburettor heat for 30 seconds; this action will cause a further slight drop in manifold pressure. Return the heat control levers to OFF and note that selected engine power is restored. Do not keep heat selected FULL for long periods or excessive power loss will result, with very little indication from the manifold pressure indicator. During normal flight operations the carburettor heat control levers should be left in the OFF position."

  Section 3 also included, in the "Airfield Approach" checklist, the following comment on carburettor heat:

  > "Intermittent use may be advisable to ensure responsive engines if a baulked landing is likely and ambient conditions are such that ice formation could occur."

  The temperature information supplied by the Bureau of Meteorology for Coconut Island around the time of the accident indicated that the atmospheric conditions were conducive to light carburettor ice forming at cruise or descent engine power settings.

  The company chief pilot knew of no instance of carburettor icing in Islander aircraft operating in the Torres Strait. The normal practice was that company pilots did not use carburettor heat during flights in the area. Similar comment was received from other organisations and pilots with extensive experience in operating Islander aircraft in the Torres Strait area.

- **Aircraft wing flap operation**
  The Owner's Handbook, Section 2, titled Design Information, under the sub-heading Flight Controls, contained the following information:

  > "Electrically operated single-slotted flaps are fitted. An actuator on the wing rear spar operates the flaps through a system of push-pull rods. A selector switch on the pilot's console controls the actuator and a flap position indicator is situated on the cabin roof instrument panel. The flap control selector switch is a spring-loaded centre OFF unit and is wired to the actuator through a system of relays. Moving the switch to the DOWN position will only move the flaps 25 degrees to a TAKE-OFF setting and when this setting has been reached a second downward switch movement will be required to set the flaps to DOWN. Similarly, when raising the flaps, the first switch movement will only raise them to the TAKE-OFF setting and a second switch movement is necessary to completely raise the flaps."

  Pilots who had flown the aircraft indicated that the flap selector switch had to be held up or down against the spring, for a short time, before flap movement commenced.

Aircraft single-engine climb performance

Section 1 of the Owner's Handbook for the aircraft stated that the minimum control speed (single engine) was 39 kts. It applied when the flaps were up and the propeller on the inoperative engine was feathered.

Section 6 of the Owner's Handbook contained aircraft performance data, including single engine rate of climb data at 65 kts with the flaps up. The data indicated that, at an aircraft weight of 2,727 kg, an ambient temperature of 30 degrees Celsius, and at sea level, the rate of climb the aircraft was capable of achieving with one engine inoperative was about 160 ft/min.

The aircraft manufacturer advised that there were no actual performance figures available for the BN-2A-26 Islander aircraft with one engine inoperative, propeller unfeathered, and flaps down. However, there were unofficial climb figures for a BN-2B-26 variant of the Islander, with flaps up, and an unfeathered propeller. These were measured under test conditions at 65 kts airspeed and indicated that there was a decrement of between 70 and 90 ft/min (depending on the unfeathered propeller RPM) below the scheduled one-engine inoperative performance figures. The manufacturer also advised that aircraft performance with both engines operating was reduced by approximately 40 per cent when the flaps were selected from up to down, although this data could not be applied directly to flight with one engine inoperative. Go-around tests with one engine inoperative and flaps down had not been conducted.

Pilots experienced on the aircraft type, reported that the performance of the aircraft with flaps down and one propeller not feathered was unlikely to allow a successful go-around to be conducted.

Other information

- **Information from surviving passenger**
  Approximately 6 months after the accident, the surviving passenger provided the following information concerning the flight.
  1. She was seated in the row behind the pilot.
  2. One of the other passengers was in the second row, while the third passenger was in the third row.
  3. Her safety harness remained secured throughout the flight.
  4. There was no unusual event during the flight: the engines sounded normal.
  5. When the aircraft was on approach to Coconut Island, the pilot said that they could not land because there was a truck on the airstrip.
  6. The passenger saw a vehicle on the strip. It was stationary, and near the eastern end of the strip.
  7. The pilot was cross and said that there was no driver in the vehicle.
- **Other information from witnesses at Coconut Island**
  At the time of the accident, an aircraft operated by another company was parked at the western end of the airstrip. Two pilots were loading a consignment of crayfish onto the aircraft. Neither saw or heard XFF arrive in the circuit or fly the approach, nor could they recall if a vehicle had been on the strip around the time the aircraft was on approach. They indicated that their loading activities, along with the existing wind conditions, would have greatly reduced the likelihood of them hearing sounds from the eastern end of the airstrip. They were not aware of the accident until one of the island residents who witnessed the accident from the eastern end of the island raised the alarm. They proceeded to the accident site and, along with some of the island residents,

provided assistance to the victims as far as they were able. One of the island residents advised the Thursday Island Police of the accident. They arranged for a medical team and police to be flown to the island in two helicopters. They arrived at the island between one and one and one-half hours after the accident.

None of the three island residents who witnessed the accident reported seeing a vehicle on the airstrip when the aircraft was on final approach.

- **Information from other company pilots**
  Other pilots working for the operator indicated that island airstrips within the Torres Strait area were generally free of obstacles for their operations. There had been occasions, however, when vehicles, persons, or animals on the airstrip had caused pilots to go-around from a landing approach, requiring them to make a second approach.

  There were no radio links between aircraft and persons at the island airstrips. Local populations relied on hearing and/or seeing aircraft arriving to become aware of their presence. Depending on the weather and wind conditions, pilots did not always overfly airstrips before joining the circuit but often joined the downwind leg before completing a base leg and landing off final approach.

- **Birdlife on the airstrip**
  In the period during which the accident occurred, there were large numbers of migratory birds on Coconut Island. Many hundreds were seen occupying the grassed runway area. The birds were small and difficult to see in the ankle-high grass. When approached by a vehicle, they generally remained on the ground until the vehicle was closer than 20-30 m. When they did fly, it was as a flock.

  The opinion of company pilots was that the birds were not sufficiently large to constitute a significant safety hazard to aircraft operations. They believed that the pilot would not have discontinued the approach because of bird activity given their small size, and given that an aircraft would normally have been almost at the point of touchdown before the birds would begin to fly. However, there was no evidence that the aircraft had struck a bird.

The flight

The flight apparently proceeded normally until late final approach when the pilot initiated a go-around because of a vehicle on the airstrip. There were clear indications from the wreckage examination that the aircraft was rolling and yawing left at impact. The status of the left engine at impact logically supported such aircraft behaviour. While the witness description of the aircraft initially veering left also supported this conclusion, the report that the aircraft rolled right immediately before impact did not. In the asymmetric power and low speed situation that existed, it was most unlikely that the aircraft could have rolled right. On balance, therefore, the direction of roll as recalled by the witnesses was incorrect.

Whether the vehicle entered the airstrip during the latter stage of the aircraft's approach, or whether it was on the airstrip and the pilot expected it to move, was not determined. However, the position of the wing flaps at impact suggested that the pilot had selected full flap, and that the flaps subsequently did not move from this position. This implied that the pilot had been committed to land and that the aircraft speed was at, or less than, 65 kts.

Under normal circumstances, a go-around with both engines operating would have been a relatively basic procedure for the pilot to conduct. Because there was no apparent earlier action or radio call, it is unlikely that the pilot was aware of an asymmetric engine condition until the go-around was initiated. When the asymmetric power condition arose, the pilot's task was complicated by a number of aspects:

1. the aircraft was at low level, and probably low speed, when the go-around was initiated. This would have provided minimal opportunity for the pilot to lower the nose of the aircraft to increase airspeed and hence aircraft controllability;
2. depending on the exact position of the aircraft when the go-around was initiated, the pilot may have had to manoeuvre away from the sand dune and coconut palms on the southern side of the strip;
3. the pilot had to deal with the control forces associated with the asymmetric power condition, in addition to those associated with the engine power increase;
4. to retract the flaps to the take-off position, feather the left propeller, and adjust the elevator and rudder trims would have required the pilot to fly the aircraft with her left hand while conducting these other tasks with her right hand. Completion of these tasks may have been difficult, if not impossible, in that control of the aircraft may have required the pilot to use two hands on the control yoke to overcome the out-of-trim forces;
5. the pilot's stature, seating position as altered by the cushions she normally used, and the position to which the rudder pedals had been adjusted, may have affected her ability to manipulate the aircraft controls to the extent necessary to maintain control of the aircraft;
6. at a speed of 60 kts, the aircraft would have taken about 7 seconds to travel from overhead the witnesses at the eastern end of the island direct to the impact position. While the actual aircraft track was not established, this timeframe was probably indicative of the period available for the pilot to recognise the situation, evaluate available options, decide what action should be taken, and initiate that action; and
7. the north-westerly wind would have exacerbated any tendency for the aircraft to drift left as a result of the asymmetric power situation.

These influences would have placed the pilot under an extreme combination of workload and stress and may have affected her decision-making and flying ability.

An alternative course of action available to the pilot was to overfly the vehicle and land the aircraft on the remaining section of strip. Another was to reduce power on the right engine and conduct an emergency landing on the tidal flat area. However, without accurate information concerning the position and altitude of the aircraft when the go-around was initiated, no positive conclusions could be drawn concerning these options.

Wreckage examination

The pre-impact position of the carburettor heat controls for both engines could not be positively determined. It is possible for ice to have formed in one carburettor and not the other. If ice was present in the left engine carburettor during the approach, it was unlikely to have been evident to the pilot because the engine was probably operating at low power. Such a condition could have caused the engine to fail to respond at the commencement of the go-around. Because of the salt water corrosion damage, it was not possible to assess the pre-accident condition of the carburettor. It is also possible that aggressive throttle operation by the pilot at the commencement of the go-around could have affected normal engine operation. In summary, there was insufficient evidence to reach a positive conclusion concerning the operation of the left engine.

Examination of the aircraft wreckage did not reveal any evidence to link the circumstances of the accident with the defects listed in ASR 111642, or those subsequently rectified on 2 January 1999. Further, no evidence was found of any aircraft unserviceability being reported and/or recorded

between 2 January and the accident flight.

1. The pilot initiated a go-around from final approach because of a vehicle on the airstrip.
2. The left propeller showed little evidence of rotation damage. The reason for a possible loss of left engine power could not be determined.
3. For reasons that could not be established, the pilot lost control of the aircraft at a low height.

As a result of this occurrence, the Australian Transport Safety Bureau (formerly BASI) is investigating a possible safety deficiency 19990038 that relates to the security of airfields in the Torres Strait against public access.

Any safety output issued as a result of the analysis of safety deficiency 19990038 will be published in the Bureau's Quarterly Safety Deficiency Report.

General details

Date:	16 January 1999	**Investigation status:**	Completed
Time:	1430 hours EST		
Location (show map):	Coconut Island, (ALA)		
State:	Queensland	**Occurrence type:**	Loss of control
Release date:	16 December 1999	**Occurrence category:**	Accident
Report status:	Final	**Highest injury level:**	Fatal

Aircraft details

Aircraft manufacturer	Pilatus Britten-Norman Ltd
Aircraft model	BN2
Aircraft registration	VH-XFF
Serial number	763
Type of operation	Charter
Damage to aircraft	Destroyed
Departure point	Horn Island, QLD
Departure time	1350 hours EST
Destination	Coconut Island, QLD

Crew details

Role	Class of licence	Hours on type	Hours total
Pilot-in-Command	Commercial	197.2	2540

Injuries

	Crew	Passenger	Ground	Total
Fatal:	1	2	0	3
Serious:	0	1	0	1
Total:	1	3	0	4

Last update 13 May 2014