

AA2013-3

**AIRCRAFT ACCIDENT  
INVESTIGATION REPORT**

**FIRST FLYING CO., LTD.**

**J A 5 3 2 4**

**March 29, 2013**



The objective of the investigation conducted by the Japan Transport Safety Board in accordance with the Act for Establishment of the Japan Transport Safety Board and with Annex 13 to the Convention on International Civil Aviation is to determine the causes of an accident and damage incidental to such an accident, thereby preventing future accidents and reducing damage. It is not the purpose of the investigation to apportion blame or liability.

Norihiro Goto  
Chairman,  
Japan Transport Safety Board

Note:

This report is a translation of the Japanese original investigation report. The text in Japanese shall prevail in the interpretation of the report.

# AIRCRAFT ACCIDENT INVESTIGATION REPORT

## BIRD STRIKE IMMEDIATELY AFTER TAKEOFF FIRST FLYING CO., LTD. BRITTEN NORMAN BN-2B-20, JA5324 ABOVE THE RUNWAY AT AGUNI AIRPORT, JAPAN AT 16:22 LOCAL TIME, OCTOBER 16, 2012

March 8, 2013

Adopted by the Japan Transport Safety Board

Chairman Norihiro Goto

Member Shinsuke Endoh

Member Toshiyuki Ishikawa

Member Sadao Tamura

Member Yuki Syuto

Member Keiji Tanaka

### 1. PROCESS AND PROGRESS OF THE INVESTIGATION

The Japan Transport Safety Board (JTSB) designated an investigator-in-charge and an investigator on October 16, 2012 to investigate the accident. Although the JTSB notified the United Kingdom, as the State of Design and Manufacture of the airplane, it did not designate its accredited representative. Comments were taken from parties relevant to the cause of the accident and relevant State.

### 2. FACTUAL INFORMATION

<b>2.1 History of the Flight</b>	<p>According to the statements of the pilot in command (PIC), the flight dispatcher and the mechanic, a bird strike report and a flight dispatcher's logbook, the events developed as follows:</p> <p>On October 16, 2012, a Britten Norman BN-2B-20, registered JA5324, operated by First Flying Co., LTD., began to taxi out of a parking spot at Aguni Airport at 16:19 local time (Japan Standard Time: UTC+9 hr) with the PIC and nine passengers on board, as flight 106 (unscheduled flight) to Naha Airport. The PIC stated that he found a bird with a fish in its mouth on the runway shoulder while taxiing down the runway to take off from Runway 01. The bird soon flew away as he steered the airplane slightly toward the bird to repel. Making a 180-degree turn at the runway end to align the aircraft with Runway 01, he confirmed no bird in his sight from the cockpit, and then started to take off at 16:22. When the airplane was airborne short of the center of the runway and was at the height of 3 m (10</p>
----------------------------------	--

ft) above the runway, he found something like a bird approaching from his right ahead. Then the bird seemed to have passed below the right wing. As he didn't recognize any noticeable impact or abnormal vibration at that time, he continued the flight and contacted the flight dispatcher with radio to report the event of a bird approaching to the airplane.

When the airplane landed at Naha airport at 16:46 and parked on the apron, the mechanic found the deformation (dent) on the right wing leading edge. Such damage was not found at the preflight external check by the PIC.

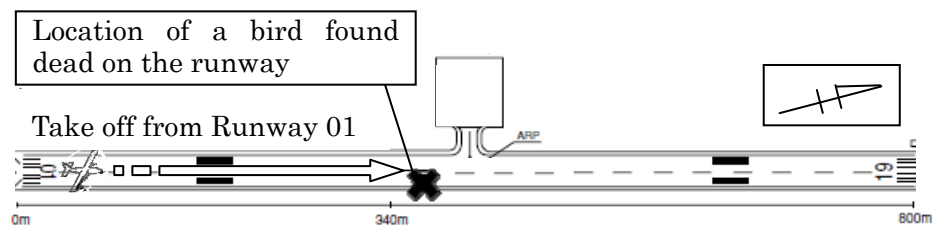
After the passenger disembarked the airplane, the PIC confirmed the damage together with the mechanic and concluded that it was caused by the bird strike. The PIC reported the bird strike event to the Company's head office, Aguni airport administration office, Okinawa Prefecture, and Naha airport office, Osaka Regional Civil Aviation Bureau, Ministry of Land, Infrastructure, Transport and Tourism (MLIT).

Photo 1 Aguni Airport

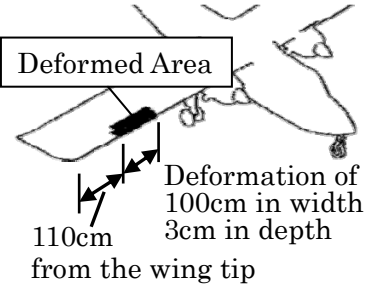




(Source) Website of Okinawa Prefecture, with modification

Figure 1 Circumstances of Bird Strike Event at Takeoff from Aguni Airport



<p><b>2.2 Injuries to Persons</b></p>	<p>None</p>
<p><b>2.3 Damage</b></p>	<p>Extent of Damage: Substantially damaged</p> <ul style="list-style-type: none"> <li>● Deformation on leading edge of the right wing</li> <li>● Slight bloodstains on the skin adjacent to the above deformed area</li> </ul>

	<p>Figure 2 Location of Deformed Area    Photo 2 Overview of Deformed Area</p>  
<p><b>2.4 Personnel Information</b></p>	<p>(1) PIC Male, Age 48  Commercial pilot certificate (airplane) July 6, 1989  Class 1 aviation medical certificate Valid date: April 2, 2013  Total flight time 13,494 hr 22 min  Total flight time on the type of airplane 2,194 hr 19 min</p>
<p><b>2.5 Airplane Information</b></p>	<p>(1) Type : Britten Norman BN-2B-20  (Serial number : 2297, Date of Manufacture : November 3, 2000)  Certificate of Airworthiness No. DAI-2012-344  Validity date: October 6, 2013  Category of Airworthiness Airplane, Normal N  Total flight time 7,046 hr 44 min</p>
<p><b>2.6 Meteorological Information</b></p>	<p>Weather reported at 16:00 at the airport was as follows:  Wind direction 040 °, wind velocity 17 kt, visibility more than 10 km</p>
<p><b>2.7 Information on the bird</b></p>	<p>Upon receipt of the PIC report through the flight dispatcher regarding the bird approaching to the airplane, a staff in the airport administration office found a bird (Species: Osprey, Size: Length 60 cm, Weight 1.7 kg) dead on the runway. In addition, he found fish remains near the bird carcass.</p> <p>The osprey is a fish-eating bird, belongs to the osprey family and habits in autumn to winter in Aguni Island.</p> <p>Photo 3 A bird dead on the runway</p>  <p>(Source) Aguni airport administration office</p>
<p><b>2.8 Bird Strike Preventative Measures at the airport</b></p>	<p>(1) The airport administration office establishes the airport safety management manual, which provides the wildlife strike preventative measures.</p> <p>(2) According to the staff in the airport administration office, the office had conducted the runway checks and bird patrols by using the vehicle</p>

	<p>horn and the starter pistol to repel the birds before the airport operating time and around 30 minutes before landing of each arrival aircraft. At the accident date, no bird was found at the bird patrols conducted before the airport operating time and before the other aircraft's touch-and-go training conducted from 15:03 to 15:49. The bird patrol was unable to be conducted 30 minutes before the airplane's landing at 15:55 as flight 105 arriving from Naha airport because the above tough-and-go training aircraft had been using the runway at that time.</p> <p>(3) Mowing was conducted in the grass area beside the runway about one week before the accident.</p> <p>(4) The bird strike event at the airport had not been reported for the last two years.</p> <p>(5) The airport safety management manual provides that the wildlife strike control program containing the wildlife hazard assessment is to be developed. However, the wildlife strike control program had not been developed.</p>
<p><b>2.9 Bird Strike Preventative Measures at the airport</b></p>	<p>(1) The Article 47-2 of the Civil Aeronautics Act requires the airport operator to establish the airport safety management manual.</p> <p>(2) The Civil Aviation Bureau (CAB) in MLIT, establishes the guidelines on the development of the airport safety management manual, which provides that the manual should describe the wildlife strike control program that contains the assessment of the risk of wildlife strikes.</p> <p>(3) ICAO Airport Service Manual completely revised in 2012, describes that the national guideline should be developed to provide the basis for developing bird/wildlife strike control program, and that each airport operator should develop and implement an effective bird/wildlife strike control program as part of the aerodrome safety management system.</p> <p>(4) The CAB is currently working on the development of the guidance on bird strike control program, making reference to the ICAO Airport Service Manual.</p>

### 3. ANALYSIS

<p><b>3.1 Involvement of Weather</b></p>	<p>No</p>
<p><b>3.2 Involvement of Pilots</b></p>	<p>No</p>
<p><b>3.3 Involvement of Airplane</b></p>	<p>No</p>
<p><b>3.4 Analysis of Findings</b></p>	<p>The PIC confirmed no abnormal condition in the airplane at the preflight external check. It is highly probable that the there was no preexisting damage to the right wing leading edge.</p> <p>At the height of 3 m above the runway after takeoff, the PIC found something like a bird approaching from his right ahead. A bird was found dead on the runway as a result of the runway inspection conducted by the</p>

staff in the airport administration office upon receipt of the PIC report. After landing, large deformation was found on the right wing leading edge, with the slight bloodstains on the skin adjacent to the deformed area. Therefore, it is certain that the airplane sustained damage to the right wing leading edge due to the bird strike immediately after takeoff.

The PIC didn't recognize any shock or abnormal vibration at the time when the bird passed. Taking into account the loud noise from the engines and the propellers at takeoff power, it is probable that he did not notice the bird strike. In addition, the bird strike occurred immediately after takeoff so that he would have had time to avoid the bird even if he had been aware of the possibility to strike the bird approaching the airplane.

The bird colliding with the airplane was identified as the osprey, which is a fish-eating bird and belongs to the osprey family

It is probable that the airport administration office conducted the appropriate bird strike preventative measures such as bird patrols and mowing the grass on the airport.

Regarding the development of the bird strike control program that contains the bird strike risk assessment and evaluation of the efficacy of the measures, it is desired that the CAB develops the guidance on bird strike control program as soon as practicable, and that each airport operator including Aguni Airport uses for the guidance in developing the program commensurate with the local condition at the airport.

#### **4. PROBABLE CAUSES**

In this accident, it is certain that the airplane sustained damage to the right wing leading edge due to the bird strike immediately after takeoff from Aguni Airport.