

AA2020-4

**AIRCRAFT ACCIDENT
INVESTIGATION REPORT**

**NEW JAPAN AVIATION CO., LTD.
J A 4 0 6 2**

July 30, 2020

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.

TAKEDA Nobuo
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



July 3, 2020

Adopted by the Japan Transport Safety Board

Chairman TAKEDA Nobuo

Member MIYASHITA Toru

Member KAKISHIMA Yoshiko

Member MARUI Yuichi

Member MIYAZAWA Yoshikazu

Member NAKANISHI Miwa

Company	New Japan Aviation Co., Ltd.
Type, Registration Mark	Aircraft Type: Cessna 172P, registered JA4062
Accident Class	Damage to Aircraft during Landing
Date and Time of the Occurrence	Around 11:20 JST (JST: UTC+9 hours; unless otherwise noted, all times are indicated in JST in this report on a 24-hour clock), on September 25, 2017
Site of the Accident	Satsuma Iojima Airport in Mishima-mura, Kagoshima-gun, Kagoshima Prefecture (30°47'11" N, 130° 16'14" E)

1. PROCESS AND PROGRESS OF THE AIRCRAFT ACCIDENT INVESTIGATION

Summary of the Accident	The Aircraft took off from Kagoshima Airport for passenger transport with a total of three persons on board, consisting of a captain and two passengers. It made a hard touchdown while landing at Satsuma Iojima Airport, and consequently sustained damage to the airframe.
Outline of the Accident Investigation	<p>The Japan Transport Safety Board (JTSB) received this accident notification from Japan Civil Aviation Bureau (JCAB) on March 6, 2019.</p> <p>JTSB designated an investigator-in-charge and two investigators on March 6, 2019 to investigate this accident.</p> <p>Comments were invited from parties relevant to the cause of this accident and the Relevant State.</p>

2. FACTUAL INFORMATION

Aircraft Information	
Aircraft type:	Cessna 172P
Serial number: 17275689;	Date of manufacture: March 10, 1982
Certificate of airworthiness: No. DAI-2016-535;	Validity: December 23, 2017

Personnel Information

Captain:	Male, Age 64
Commercial pilot certificate (Airplane)	August 3, 1989
Type rating for Single-engine (Land)	August 3, 1989
Class 1 aviation medical certificate	Validity: February 2, 2018
Total flight time	14,415 hours 37 minutes
Flight time in the last 30 days	47 hours 31 minutes
Flight time on the same type of aircraft	514 hours 20 minutes
Flight time in the last 30 days	47 hours 31 minutes

Meteorological Information

(1) The weather values observed at the Airport Office around the time of the accident were as follows:

11:00 Wind direction East-northeast, Wind velocity 1.6 m/s,
Maximum instantaneous wind velocity 8.7 m/s, Precipitation 0 mm

(2) According to the statement of the captain, around 10:50, the sea surface wind around the Iojima Island was blowing from the east and its wind speed was 15 to 20 kt (7.7 to 10.3 m/s), or 25 kt (12.9 m/s) in some other places.

Details of the Accident and Related Information

(1) History of the Flight

The Aircraft was flying to the Airport from Kagoshima Airport for transporting passengers with a total of three persons on board, consisting of a captain and two passengers.

The Captain confirmed the air currents around the Airport by making a low approach before landing. Although the wind was blowing from the east with a sudden gust and there were also updrafts and downdrafts, he judged that it would allow him to take a full control and landing would be possible, and

decided to make landing on Runway 18. While responding to crosswind, the Captain made landing, but the Aircraft made a hard touchdown together with a strong impact and then bounced.

Without performing a go-around, the Captain waited for the Aircraft to end its bouncing because he did not feel it bouncing hard. The Aircraft made a hard landing while bouncing several times with shaking vertically and horizontally. The captain confirmed that the nose wheel went flat after landing and reported the situation to the Company.

(2) Information regarding the Airport

The Airport is located in the Island in the northern part of the Satsunan Islands. The Airport does not provide aircrafts with any information regarding the active runway and weather conditions by means of radio communication since it has no air traffic services unit. According to

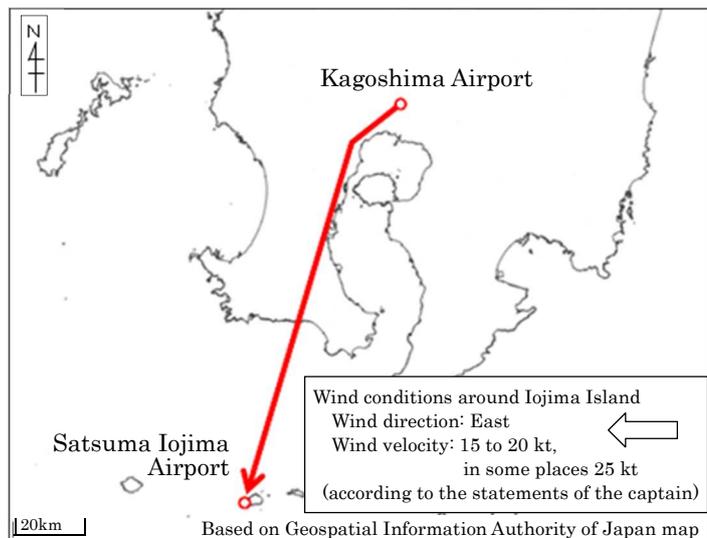


Figure1: Estimated flight route

the Company, the air currents becomes unfavorable*¹ due to topographic effects when an east wind blows around the Island, and the Company sometimes suspends the flight.

(3) Damage to the Aircraft (Extent of Damage: Substantial at the time of investigation on March 14, 2019)

The nose landing gear mounting areas of the forward fuselage bulkhead were damaged due to a large load applied from below, and the cockpit floor and the lower skin of forward fuselage were deformed. The extent of the propeller damage, however, could not be confirmed because it was not retained at the time of investigation.

(4) Process up to initiating the investigation

The Aircraft was disassembled and transported to the Company after the accident, and it was kept in the Company's warehouse as being left to be disposed. The Company was instructed regarding the Aircraft in the JCAB's safety audit conducted in February 2019, followed by the Captain report on this accident according to the Civil Aeronautics Act. Therefore, the occurrence covered by this report is classified as an aircraft accident on March 6, 2019, about a year-and-a-half after the accident.

3. ANALYSIS

(1) Damage to the Aircraft

From the extent of the damage, it is highly probable that the Aircraft had been damaged due to a large load applied to the forward fuselage after the nose wheel touched down severely.

(2) Wind condition at the Airport

It is probable that turbulent air was generated due to effects of the topography around the Airport because an east wind was blowing around the Island around the time of the accident.

(3) Landing of the Aircraft

It is probable that the Aircraft was in a porpoising (which refers to a motion of the aircraft to repeat the bounce like dolphins leaping with pitch oscillations), judging from the marks left on the airframe due to a hard touchdown of the nose wheel and the bounce. It is probable that the Aircraft was in a porpoising because it touched the ground before attaining a proper landing attitude, and it is somewhat likely that this resulted in insufficient rotation to a landing attitude due to turbulent air.

It is desirable that the pilot should perform a go-around without hesitation in case where the aircraft bounces during landing.

(4) Decision on the landing at the Airport

The pilots who are going to land at the Airport need to judge the suitability of landing by predicting wind direction and wind velocity since there is no weather information provided by air traffic services unit. It is important for the pilots to identify potential risks and make a careful judgement about landing including an option of returning to the departed airport because when especially an easterly wind blows around the Island, turbulent air is generated and the wind direction and wind velocity may change beyond prediction due to effects of the topography around the Airport.

*1 "NIPPON NO KUKO (Airports in Japan)" (by D.GRAPH, Ltd. 0616-01、REVISION No.43 05/5/16) contains the following description of the Airport. (excerpt)

Due to topographic effects from Mt. Iogatake (2309 ft), when an easterly wind blows, the southerly tail wind blows on the approach end on the side of Runway 36, the northerly tail wind blows on the approach end on the side of Runway 18, but no wind around the center of the Runway, thus generating unique weather conditions.

4. PROBABLE CAUSES

In this accident, it is probable that the airframe was damaged because it fell into a state of porpoising during landing, and the nose wheel touched down severely.

5. SAFETY ACTIONS

In the wake of the accident, the Company took following safety actions:

- (1) Provided re-training on take-off / landing operations / go-around and special examination for the Captain.
- (2) Made thorough notification of the followings across to all the employee as measures related to the operations at Satsuma Iojima Airport.
 - a. Make use of information from Satsuma Iojima Airport and websites, etc. and when an east wind component of about 15 kt or more is expected to blow around the Island, flights of aircraft shall be suspended.
 - b. Even when the operation of aircraft is carried out, if it is expected that an east wind component will be about 15 kt or more, return to the departed airport without making an approach.
 - c. When the operation of aircraft is carried out, the pilot shall make a low approach over the runway at the Airport to judge the condition of air currents, but abort a landing in case of severe turbulence.
 - d. Even when judging that landing is possible and making an approach, the pilot shall perform a go-around whenever he gets dangerous feeling.