

AI2022-2

**AIRCRAFT SERIOUS INCIDENT
INVESTIGATION REPORT**

**PRIVATELY OWNED
J A 2 0 1 M**

March 24, 2022

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 prevent future accidents and incidents. It is not the purpose of the investigation to apportion blame or liability.

TAKEDA Nobuo
Chairperson
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.

《Reference》

The terms used to describe the results of the analysis in "3. ANALYSIS" of this report are as follows.

- i) In case of being able to determine, the term "certain" or "certainly" is used.
- ii) In case of being unable to determine but being almost certain, the term "highly probable" or "most likely" is used.
- iii) In case of higher possibility, the term "probable" or "more likely" is used.
- iv) In a case that there is a possibility, the term "likely" or "possible" is used.

AIRCRAFT SERIOUS INCIDENT INVESTIGATION REPORT



February 4, 2022

Adopted by the Japan Transport Safety Board

Chairperson: TAKEDA Nobuo

Member: MIYASHITA Toru

Member: KAKISHIMA Yoshiko

Member: MARUI Yuichi

Member: NAKANISHI Miwa

Member: TSUDA Hiroka

Company	Privately owned
Type, Registration Mark	Piper PA28RT-201T JA201M
Incident Class	Runway excursion (when an aircraft is disabled to perform taxiing) Article 166-4, item (iv) of the Ordinance for Enforcement of the Civil Aeronautics Act of Japan
Date and Time of the Occurrence	At about 11:26 Japan Standard Time (JST: UTC + 9 hours, unless otherwise noted, all times are indicated in JST in this report on a 24-hour clock), July 18, 2021
Site of the Serious Incident	Niigata Airport (37°57'23 N, 139°06'51 E)

1. PROCESS AND PROGRESS OF THE INVESTIGATION

Summary of the Serious Incident	When landing at Niigata Airport, the aircraft halted after deviating to the grassy area on the north side of the runway and was disabled to perform taxiing. The captain and two persons were on board and none of them was injured. The tire of the right main landing gear sustained air leakage. There was no other damage to the airframe.
Outline of the Serious Incident Investigation	An investigator-in-charge and an investigator were designated on July 18, 2021. Comments were invited from the party relevant to the cause of the serious incident and the Relevant State.

2. FACTUAL INFORMATION

Aircraft Information	
Aircraft type:	Piper PA28RT-201T
Serial number: 28R-8531001	Date of manufacture: September 29, 1984
Airworthiness certificate: TO-2020-382	Validity: December 3, 2021
Personnel Information	
Captain:	Age: 57
Private pilot certificate (Airplane: Single-engine piston (Land))	July 1, 2002

Instrument flight certificate (Airplane)	June 11, 2012
Specific pilot competence certificate	
	Expiry of practicable period for flight: September 14, 2022
Class 2 aviation medical certificate	Validity: November 27, 2021
Total flight time	660 hours 32 minutes
Flight time on the type of the aircraft	317 hours 00 minutes

Meteorological Information

Weather conditions at the time of occurrence of the serious incident was good.

Event Occurred and Relevant Information

(1) History of the flight

At about 08:00 on the day of the occurrence, the captain began preparations for the round flight between Matsumoto Airport and Niigata Airport. In preflight inspection, the pneumatic pressure of each tire showed a normal value and no abnormal condition was found on the tires. Then, two persons boarded the aircraft. The aircraft took off from Matsumoto Airport at 10:25 by instrument flight rules under the control of the captain sitting in the left pilot seat. The aircraft continued an uneventful flight and landed on runway 28 at Niigata Airport at about 11:26. Touchdown of the aircraft was smooth with no sideslip or gap between the runway centerline and the axis of the airframe, and descent rate at the touchdown was normal.

There was no abnormality recognized in the aircraft at the beginning of landing roll. The aircraft slowed down by the engine thrust set at idle position without applying brakes. While decelerating, the captain applied the left rudder to enter the B2 on the left after passing the junction to the P3 taxiway, the captain felt that the response of the aircraft to the rudder steering was slow. As this situation was quite similar to the punctured tire during taxiing the captain had once experienced, the captain judged that the right tire punctured. Because the captain wanted to avoid highly possible damage to the right main landing gear wheel that might occur if taxiing in such condition continued up to the taxiway on the left side of the course. In addition, the captain thought that deviating the runway could avoid runway closure and thereby did not hinder operations of scheduled flights, the captain decided to deviate to the grassy area on the right side (the north side of the runway). The captain notified the decision to the air traffic controller at Niigata Aerodrome Control Facility, changed the course to the right after decelerating to approximately 5 kt, and ran off the runway proceeding at almost right angles to the longer side of the runway. After entering the grassy area, the aircraft continued taxiing changing the course further to the right and came to a halt near 41 m in the north of the runway centerline with the nose facing east-northeast, almost reverse direction to the landing direction. After the aircraft halted, the captain shut down the engine at that position since the aircraft was in condition of being disabled to perform taxiing.

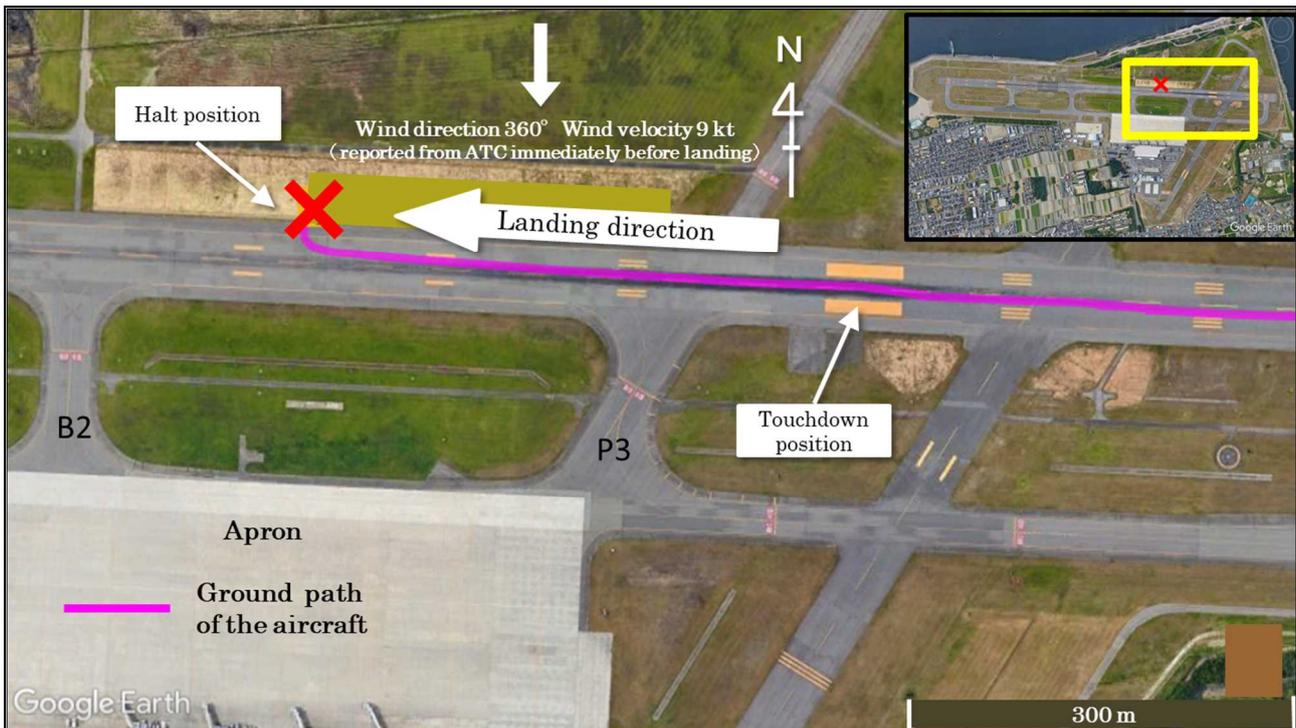


Figure 1 Estimated taxiing ground path of JA201M

(2) Situations of the closed runway at Niigata Airport

Runway 10/28 at Niigata Airport was closed from the occurrence until 18:13 with 18 scheduled flights cancelled.

(3) Runway strip at Niigata Airport

The position where the aircraft halted (the location 41 m away from the centerline of runway 28) was inside the area designated as a runway strip ^{*1} pertaining to runway 28 (see Figure 2).

Besides, when a disabled aircraft halts in a runway strip, a runway is forced to be closed by “Guidelines for runway operations when a disabled aircraft exists” (KOKU-KU-AN-HO No. 933 dated March 28, 2014), which forced the runway to be closed until the aircraft was cleared off.



Figure 2 Runway strip of runway 10/28 at Niigata Airport (aerial photograph of Google Earth with some explanatory modifications added)

(4) Condition of the aircraft and runway after the occurrence

On-site investigation of the aircraft revealed that air in the tire with a tube attached to the right main landing gear leaked. No other damage to or abnormal of the aircraft and the control system was confirmed.

The tire was removed from the right main landing gear wheel for an overhaul. As a result,

^{*1} “runway strip” means a rectangular area including a runway and its surrounding area that is established and extended to the specific direction to serve for take-off or landing of aircraft.

it was found that an air leakage occurred from a crack (approximately 2 mm overall length) in the tube. The tire and tube had been used for approximately three years and the number of landing was 216.

Besides, runway inspection was conducted at the airport after the occurrence, which found no abnormal condition including an unusual object, etc. that could damage the tire.

3. ANALYSIS

(1) Judgement of the captain

The JTSA concludes that it is highly probable that when the captain recognized the punctured tire of the right landing gear during landing roll, the captain wanted to avoid continuing taxiing to the taxiway on the left for preventing damage to the right main landing gear wheel and decided to go to the grassy area on the right side. Besides, the judgement of the captain is probable to have based on the recognition that simply deviating from the runway could avoid runway closure and thereby did not hinder operations of scheduled flights.

However, the location where the aircraft halted and could not perform taxiing was inside the runway strip of runway 28 at the airport that forced the runway to be closed until a disabled aircraft was cleared off. It is highly probable that the recognition of the captain that, "Deviation from the runway could avoid the runway closure," was due to his or her insufficient understanding of the extent and operations of the runway strip.

(2) Deviation from the runway

The JTSA concludes that it is highly probable that steering system of the aircraft was normally operating during the period from landing at Niigata Airport until the complete halt of the aircraft.

Besides, it is highly probable that the air in the tire of the right main landing gear gradually leaked from the tube after landing since the air leakage occurred only from one crack approximately 2 mm in length, there was no sharp change in the direction and there was no uncontrollable condition of the aircraft.

From these, it is highly probable that control of taxiing direction of the aircraft by the captain's steering was practicable during the period from landing until halt of the aircraft, and the deviation from the runway was performed by intentionally maneuvering by the captain.

In addition, the disabled taxiing after the deviation from the runway is highly probable to have been due to the collapsed and deformed tire and the wheel of the right main landing gear that was in no condition to rotate.

(3) Air leakage from the tire of the right main landing gear

The JTSA concludes from landing conditions of the aircraft that the load generated on the tire when the aircraft grounded on the runway is highly probable to have been normal, and the possibility that the captain's steering contributed to the air leakage is probable to have been low.

Besides, the air leakage is possible to have occurred after landing at Niigata Airport since the pneumatic pressure of the tire was normal in preflight inspection and the captain recognized no abnormality at the time of departure from Matsumoto Airport.

4. PROBABLE CAUSES

The JTSA concludes that it is highly probable that the serious incident occurred by the captain's own steering, who recognized that the tire of the right main landing gear had punctured during landing roll, to deviate to the grassy area in the north side of the runway.

