

AI2023-8

**AIRCRAFT SERIOUS INCIDENT
INVESTIGATION REPORT**

JANET CORPORATION

J A 6 1 1 3

Japan Coast Guard

J A 8 7 1 B

December 21, 2023

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

TAKE-OFF FROM A RUNWAY BEING USED BY OTHER AIRCRAFT

NOTO AIRPORT

AT ABOUT 10:13 JST, OCTOBER 15, 2022

1. JANET CORPORATION

BELL 206B (ROTORCRAFT), JA6113

2. JAPAN COAST GUARD

TEXTRON AVIATION B300C, JA871B

November 24, 2023

Adopted by the Japan Transport Safety Board

Chairperson TAKEDA Nobuo

Member SHIMAMURA Atsushi

Member MARUI Yuichi

Member SODA Hisako

Member NAKANISHI Miwa

Member TSUDA Hiroka

1. PROCESS AND PROGRESS OF THE AIRCRAFT SERIOUS INCIDENT INVESTIGATION

1.1 Summary of the Serious Incident	On Saturday, October 15, 2022, at Noto Airport, a Bell 206B, JA6113, operated by JANET CORPORATION, took off from the runway where a Textron Aviation B300C, JA871B, operated by the Japan Coast Guard was taxiing toward the apron.
1.2 Outline of the Serious Incident Investigation	<p>The occurrence covered by this report falls under the category of “Take-off from a runway being used by other aircraft” as stipulated in item (i), Article 166-4 of the Ordinance for Enforcement of Civil Aeronautics Act of Japan (Ordinance of Ministry of Transport No.56 of 1952), and is classified as a serious incident.</p> <p>On October 15, 2022, the Japan Transport Safety Board (JTSB) designated an investigator-in-charge and two other investigators to investigate this serious incident.</p> <p>An accredited representative of the Canada and United States of America, as the State of Design and Manufacture of the aircraft involved in this serious incident, participated in the investigation.</p> <p>Comments on the draft Final Report were invited from parties relevant to the cause of the serious incident. Comments on the draft Final Report were invited from the relevant States.</p>

2. FACTUAL INFORMATION

<p>2.1 History of the Flight</p>	<p>According to the statements of the captain of Bell 206B, JA6113 (hereinafter referred to as “Aircraft A”), operated JANET CORPORATION, the captain and the co-pilot of Textron Aviation B300C, JA871B (hereinafter referred to as “Aircraft B”), operated by the Japan Coast Guard, and Air Traffic Service Flight Information Officer who was in charge of Aerodrome Flight Information Service (AFIS) for Noto Airport at Osaka Airport Office OSAKA AFIS and Area/En-route Information Service (AEIS) Center (see 2.7 (5)) (hereinafter referred to as Noto Radio) as well as the communication records of Noto Radio and the image recording on TV equipment for AFIS (hereinafter referred to as “TV equipment”) (see 2.7.(8)), the history up to the serious incident is summarized as follows:</p> <p>Aircraft A came to Noto Airport in order to make sightseeing flights at the air festival hosted by School Corporation Japan Aviation Academy. From about 09:40 (JST: UTC+9 hours; unless otherwise noted, all times are indicated in JST in this report on a 24-hour clock), on October 15, 2022, using a grass area adjacent to the airport as its parking place (see Figure 3), Aircraft A was making sightseeing flights flying in the airspace around the airport for three to four minutes with three to four passengers on board a time.</p> <p>Aircraft B was flying toward Noto Airport for refueling, with seven persons on board, consisting of the captain, the co-pilot and other five members.</p> <p>At about 10:10, in order to start the fifth sightseeing flight, Aircraft A reported to Noto Radio from its parking place that it had been ready for starting. Having received the information from Noto Radio that Aircraft B was on a final approach to Runway 07 for landing, Aircraft A informed Noto Radio of its intention to taxi after Aircraft B landing.</p> <p>At 10:11:35, when confirming about the status of Aircraft B, Aircraft A received the information from Noto Radio, “An arrival aircraft is landing now, please stand by for a moment.”</p>
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Figure 1: Aircraft A



Figure 2: Aircraft B

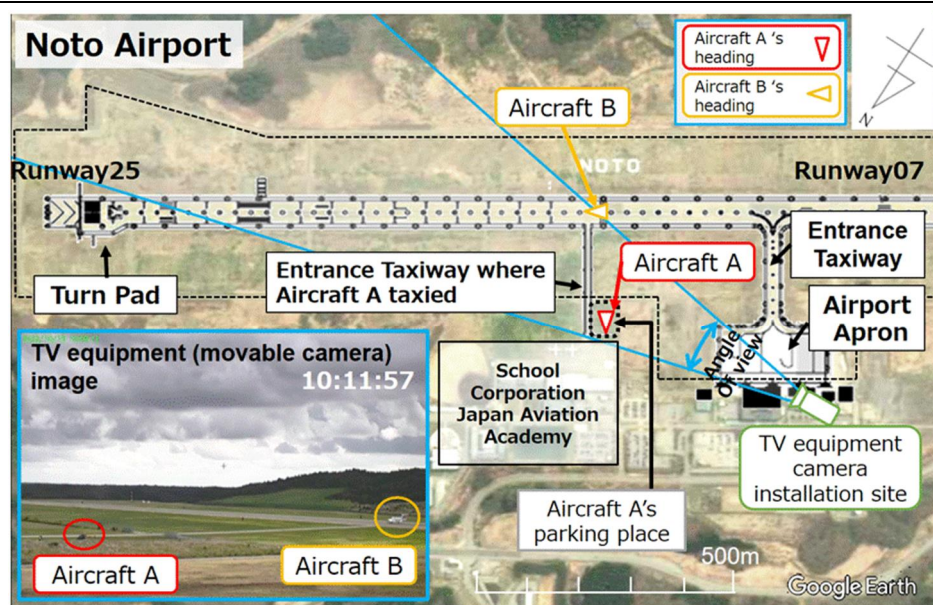


Figure 3: Position Relations before the Serious Incident (at 10:11:57)

At 10:11:54, Noto Radio informed Aircraft B, which had landed on Runway 07, that there was no en-route obstacle for taxiing up to the airport apron. Receiving the information from Noto Radio, Aircraft B continued taxiing toward the turn pad on Runway 25 in order to turn following landing roll.

At 10:12:35, Aircraft A reported to Noto Radio that it was ready for taxiing, and started air-taxiing*¹ (at an altitude of about 10 ft), with advice from Noto Radio that there was no en-route obstacle for taxiing up to Runway 07 and being told to report to Noto Radio when ready for take-off.

*¹ According to the definition in Annex 2 to the Convention on International Civil Aviation, "air-taxiing" refers to the movement of a helicopter above the surface of an aerodrome, normally in ground effect and at a ground speed normally less than 20 kt.

At 10:13:23, Aircraft A reported to Noto Radio that it was ready for take-off, and received from Noto Radio "RUNWAY IS CLEAR (see 2.7.(7))." At the position short of entering the runway, Aircraft A confirmed the runway located ahead of its own, entered the runway while turning to the left, and immediately started its take-off climb.

Around the time when completing turn at the turn pad on Runway 25, as Aircraft B heard Noto Radio transmitting "RUNWAY IS CLEAR" over the

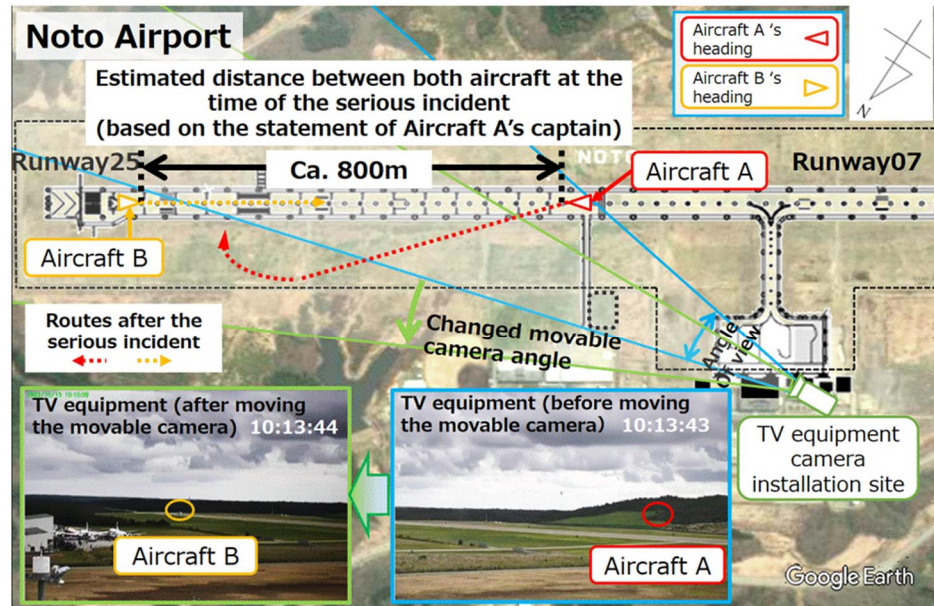


Figure 4: Estimated Position Relations at the Serious Incident (from 10:13:43 to 10:13:44)

radio, visually recognized the helicopter on the runway in front, held position, and then informed Noto Radio that its own aircraft was being still on the runway.

At 10:13:45, as there was a report from Aircraft B, Noto Radio advised Aircraft A to hold, but received a report from Aircraft A that it had already taken off and was watching Aircraft B. The captain of Aircraft A visually recognized Aircraft B approximately 800m ahead of its own aircraft during take-off climb. The captain of Aircraft A did not feel any particular risk, but in order to avoid the status of facing Aircraft B directly, the captain changed the heading to 20° to the left of Runway 07, and continued the take-off climb. And then, after the captain of Aircraft A confirming that Aircraft B, which had restarted taxiing, passed right beside its own aircraft, Aircraft A flew crossing over the runway, and landed at 10:17 on Runway 07 via the right down-wind leg.

The serious incident occurred on the runway at Noto Airport (37°17'36"N, 136°57'45"E) at about 10:13 on October 15, 2022.

2.2 Injuries to Persons	None																
2.3 Damage to the Aircraft	None																
2.4 Personnel Information	<p>(1) Captain of Aircraft A: Age: 53</p> <table border="0"> <tr> <td>Commercial pilot certificate (Rotorcraft)</td> <td>January 26, 1996</td> </tr> <tr> <td>Rating for single-engine turbine (Land)</td> <td>November 2, 1994</td> </tr> <tr> <td>Pilot competency assessment/confirmation</td> <td></td> </tr> <tr> <td>Expiration date of piloting capable period</td> <td>December 14, 2023</td> </tr> <tr> <td>Class 1 aviation medical certificate</td> <td>Validity: April 22, 2023</td> </tr> <tr> <td>Total flight time</td> <td>4,095 hours 45 minutes</td> </tr> <tr> <td>Flight time in the last 30 days</td> <td>3 hours 53 minutes</td> </tr> <tr> <td>Total flight time on the type of aircraft</td> <td>1,781 hours 44 minutes</td> </tr> </table>	Commercial pilot certificate (Rotorcraft)	January 26, 1996	Rating for single-engine turbine (Land)	November 2, 1994	Pilot competency assessment/confirmation		Expiration date of piloting capable period	December 14, 2023	Class 1 aviation medical certificate	Validity: April 22, 2023	Total flight time	4,095 hours 45 minutes	Flight time in the last 30 days	3 hours 53 minutes	Total flight time on the type of aircraft	1,781 hours 44 minutes
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	<p>Flight time in the last 30 days 1 hours 58 minutes</p> <p>(2) Captain of Aircraft B: Age 44</p> <p>Commercial pilot certificate (Airplane) October 16, 2003</p> <p>Rating for multiple-engine (Land) January 30, 2007</p> <p>Pilot competency assessment/confirmation</p> <p>Expiration date of piloting capable period December 10, 2023</p> <p>Class 1 aviation medical certificate Validity: October 30, 2022</p> <p>Total flight time 4,883 hours 04 minutes</p> <p>Flight time in the last 30 days 52 hours 10 minutes</p> <p>Total flight time on the type of aircraft 1,544 hours 58 minutes</p> <p>Flight time in the last 30 days 52 hours 10 minutes</p> <p>(3) Co-pilot of Aircraft B: Age 31</p> <p>Commercial pilot certificate (Airplane) October 9, 2018</p> <p>Rating for multiple-engine (Land) October 17, 2017</p> <p>Pilot competency Assessment/Confirmation</p> <p>Expiration date of piloting capable period October 28, 2022</p> <p>Class 1 aviation medical certificate Validity: December 3, 2022</p> <p>Total flight time 424 hours 28 minutes</p> <p>Flight time in the last 30 days 19 hours 22 minutes</p> <p>Total flight time on the type of aircraft 154 hours 37minutes</p> <p>Flight time in the last 30 days 19 hours 22 minutes</p> <p>(4) Noto Radio: Age 22</p> <p>Air traffic service flight information officer certificate (Mobile communication service) August 1, 2022</p> <p>(5) Person in charge of ATC service support: Age 20</p> <p>Air traffic service flight information officer certificate (Mobile communication service) None (during on-the-job training)</p>
2.5 Aircraft Information	<p>(1) Aircraft A</p> <p>Aircraft type: Bell 206B</p> <p>Serial number: 4192</p> <p>Date of manufacture: October 16, 1991</p> <p>Airworthiness certificate: Tou-2022-012</p> <p>Validity: April 20, 2023</p> <p>(1) Aircraft B</p> <p>Aircraft type: Textron Aviation B300C</p> <p>Serial number: FM-83</p> <p>Date of manufacture: September 12, 2019</p> <p>Airworthiness certificate: Tou-2021-395</p> <p>Validity: December 13, 2022</p>
2.6 Meteorological Information	<p>The observation data in the aviation aerodrome routine meteorological report at the airport at around the time of the serious incident were as follows:</p> <p>10:00 Wind direction: Variable, Wind velocity: 5 kt</p> <p>Prevailing visibility: 10 km or more</p> <p>Clouds: Amount 1/8, Type Cumulus, Cloud base 1,000 ft</p> <p>Clouds: Amount 3/8, Type Cumulus, Cloud base 1,500 ft</p> <p>Clouds: Amount 5/8, Type Cumulus, Cloud base 3,500 ft</p> <p>Temperature: 19 °C, Dew point: 17 °C</p> <p>Altimeter setting (QNH): 30.11 inHg</p>
2.7 Additional Information	<p>(1) Obligation for Keeping Watch and Others</p> <p>The Article 71-2 of the Civil Aeronautics Act of Japan stipulates that “Any person who is piloting an aircraft (or their on-board supervisor where the pilot is undergoing pilot training or instrument flight training) must, while in flight, keep watch so as not to collide with other aircraft or other objects irrespective of whether that person is engaged in a flight in accordance with the instructions given by the Minister of Land, Infrastructure, Transport and Tourism under the provisions of Article 96 paragraph (1), except under such weather conditions that will not permit that person to recognize any objects</p>

outside their own aircraft.”

In addition, as the navigation in the vicinity of airport etc., the Article 189(1), Item (vii) of the Ordinance for Enforcement of Civil Aeronautics Act of Japan stipulates that “*When an aircraft is to take off following another aircraft which is landing, it must not initiate the taxiing for take off before the preceding aircraft has landed and left the landing strip.*”

(2) Information about the Airport

Noto Airport is an airport with an air traffic information zone, in which aerodrome control services such as air traffic control instructions and clearances to aircraft landing on or taking off from the runway are not provided, but provided are AFIS to offer information necessary for flight safety, transmit the reports required for air traffic control between the ATC facilities and aircraft, and give other information necessary for flight safety.

It is required for the crewmembers of aircraft landing at or taking off from the airport to use the information obtained through AFIS and make safety confirmation by themselves so as not to collide with other aircraft or other objects.

The airport has a 2,000 m long by 45 m wide runway (07/25) and a taxiway connecting the runway and the apron (hereinafter referred to as “Entrance Taxiway”). And standard taxiing routes after landing and before take-off are as follows:

① Fixed wing aircraft

After landing, an airplane turns at the turn pad located at the runway threshold and taxis on the runway toward the opposite to the landing direction, heading for the apron via Entrance Taxiway. At the time of take-off, an airplane enters the runway via Entrance Taxiway, then taxis on the runway toward the opposite to the take-off direction, turns at the turn pad located at the runway threshold, and initiates take-off procedures.

② Rotorcraft

Although using the runway for take-off and landing, a rotorcraft usually takes off or lands around the intersection between the runway and Entrance Taxiway because a rotorcraft does not need to use the full runway length. After landing, a rotorcraft heads for the apron via Entrance Taxiway. At take-off, a rotorcraft taxis up to near the intersection between the runway and Entrance Taxiway via Entrance Taxiway, and commences take-off procedures. Installed on the east side of the apron of the airport were the apron for School Corporation Japan Aviation Academy and Entrance Taxiway that connects to the runway of the airport, and Aircraft A taxied on this Entrance Taxiway to land on and take-off from the vicinity of the runway intersection. (See Figure 3)

(3) Situation of Aircraft A

On the day of the serious incident, the sightseeing flights of the aircraft were planned 17 times between 09:00 am and 11:00 am excluding the time period of arrival and departure of scheduled flights at Noto Airport.

About the sightseeing flights, the captain of Aircraft A stated as follows:

① As each sightseeing flight was only three minutes long, the captain felt time pressure.

② Before starting to taxi, the captain thought that Aircraft B had already vacated the runway. As having received information that “RUNWAY IS CLEAR” from Noto Radio at the time entering the runway, the captain assumed that there would be no other aircraft on the runway.

③ From the time when Aircraft A entered the runway to the time when it took off, as the captain thought he had to keep the time for the sightseeing flight, when entering the runway, the captain performed take-off procedures while turning to the left. Therefore,

captain's attention was concentrated on control the aircraft and watching instruments. It was not until the aircraft was in a climb attitude at an altitude of about 80 ft and the captain looked ahead that Aircraft B could be visually recognized clearly.

(4) Verification of Visual Status from near Take-off Position of Aircraft A (see Figure 5)

The verification of visual status from near the take-off position of Aircraft A to the direction of the turn pad, where Aircraft B had turned after landing, revealed that it was feasible to visually recognize the vehicle placed near the turn pad even from the position lower than that height, although the actual height of view was different as Aircraft A had been air-taxiing.

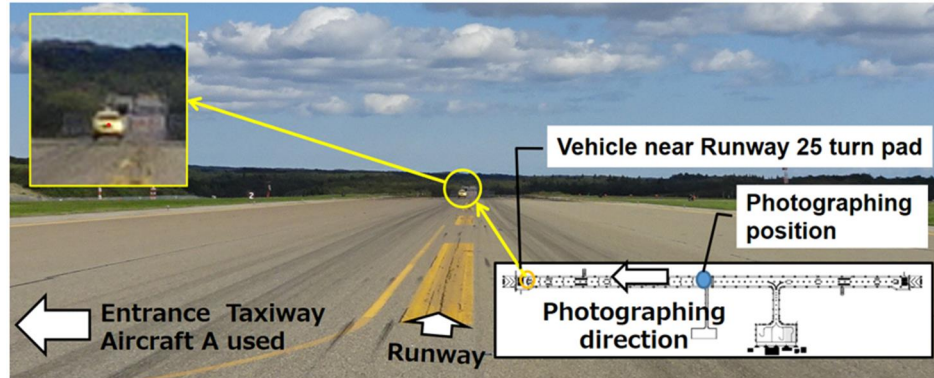


Figure 5: Visual Status from near Take-off Position of Aircraft A

(5) OSAKA AFIS and AEIS Center

① Aerodrome Flight Information Service (AFIS)

Air Traffic Service Flight Information Officer at Osaka Airport Office OSAKA AFIS and AEIS Center provides Aerodrome Flight Information Service for Noto Airport remotely. And OSAKA AFIS and AEIS Center also provides AFIS for Fukui, Oki, Tajima, Tottori and Iwami airports, respectively, other than Noto Airport. Additionally, it provides AEIS to offer flight information at information sites of Mikawa, Komatsu, Mikuniyama, Kushimoto and Miho.

② Service Provision System

On the day of the serious incident, eight Air Traffic Service Flight Information Officers worked at the center. The duty manager supervised overall work and assigned Noto/Fukui position with two officers, Iwami/Tottori position with one officer, Tajima/Oki position with one officer, and Area/En-route Information Service (AEIS) position with three officers.

The AFIS at the center is provided usually under the system with one Air Traffic Service Flight Information Officer in charge of two airports, but on the day of the serious incident, a number of aircraft were planned to visit the air festival held at Noto Airport, therefore, one officer was assigned for Noto and Fukui Airports respectively, and the other one officer in charge of AEIS was assigned as a service support staff for Noto Airport.

According to "Mobile Communication Services in the Fourth Flight Information Service of Air Traffic Service Procedure Handbook", it is stipulated that Air Traffic Service Flight Information Officer in charge of AFIS shall not engage in the services other than the relevant service except when it is recognized as not affecting the relevant service. In addition, it is stipulated that service support staff shall be assigned as much as possible in advance in order to respond to a sudden event and temporary increased workload.

Besides, a series of radio communications about a flight of aircraft shall be performed by the same Air Traffic Service Flight Information

Officer as much as possible, therefore, the service support staff shall be usually in charge of making communication and coordination with the airport office or operation monitoring organizations that handle flight plans by telephone, etc.

(6) The Status of AFIS at Noto Airport

According to the statement of Noto Radio, from 08:20 to 08:42 on the day of the serious incident, 17 flight plans related to Aircraft A's sightseeing flights were received through the flight information management processing system, but cancellation notification for seven of them were received, resulting in a little complicated process handling of the flight plans.

From about 09:40, Aircraft A's sightseeing flight started, and Noto Radio was inputting the departure or arrival time obtained through radio communications into the system. At this time, as there was a gap between the sightseeing flight departure time on the flight plan and the real one, and Noto Radio had wrongly input the departure time for the fourth sightseeing flight as that for the sixth into the system.

Noto Radio asked the service support staff to correct the wrong input data, but before the correction was completed, Aircraft A arrived, and the arrival time was unable to be input into the system, thus Noto Radio was feeling rushed.

Noto Radio stated that Noto Radio provided Aircraft A with "RUNWAY IS CLEAR" even though Aircraft B had not vacated from the runway, because as the radio communication with Aircraft A started (at 10:12:35) while feeling rushed as unable to keep up with the process handling, Noto Radio's attention was concentrated on Aircraft A, and Aircraft B was away from the mind of Noto Radio.

(7) Provision of Phrase "RUNWAY IS CLEAR"

The meaning and how to provide the phrase "RUNWAY IS CLEAR" in AFIS are described in Aeronautical Information Publication (AIP) and "Mobile Communication Services in the Fourth Flight Information Service of Air Traffic Service Procedure Handbook", respectively, as follows:

① AIP

3.2.2. Phraseology at airports where AFIS is provided

<i>phrase</i>	<i>meaning</i>
<i>"Runway is Clear"</i>	<i>This phrase is used when airport administrator reports that there is no traffic or obstruction on the runway, but it does not mean "CLEARED TO LAND" or "CLEARED FOR TAKE OFF".</i>

② Mobile Communication Services (Excerpt)

(4) Information on Airport Conditions

c When there is no obstruction, etc. on the runway, following phraseology shall be used to notify.

★*RUNWAY [number], RUNWAY IS CLEAR.*

Note 1: The phrase "RUNWAY IS CLEAR" is used when airport management organization reports that there is no traffic or obstruction, etc. on the runway. In addition, upon using the phrase, the air traffic service flight information officer shall confirm the runway except the case that it is not possible to check the runway directly or monitor it by TV equipment due to conditions of weather, equipment status, traffic conditions, and other unavoidable reasons.

Note 2: Even when there is no obstruction, etc. on the runway in the take-off direction of a departure aircraft, if there is other aircraft on the relevant runway, "RUNWAY IS CLEAR"

shall not be notified.

Noto Airport is a regional airport established and managed by Ishikawa Prefecture, and Noto Airport Office in Ishikawa Prefecture conducts airport surface inspections, etc. At each regular or temporary airport surface inspection, Airport Office reports to an Air Traffic Service Flight Information Officer that “there is no obstruction on the runway”. On the other hand, regarding “there is no traffic”, an Air Traffic Service Flight Information Officer confirms aircraft movements by TV equipment or communicating directly with aircraft via radio communication.

(8) TV Equipment for AFIS

As AFIS is provided remotely at Noto Airport, Air Traffic Service Flight Information Officers are unable to do visual recognition to obtain the information, therefore, TV equipment is installed.

This TV equipment has three fixed cameras enable to oversee the full view of runway (top in Figure 6), and one movable camera (lower left in Figure 6), and the movable camera can be operated by using the functions on the operation panel seen at the bottom right of Figure 6.

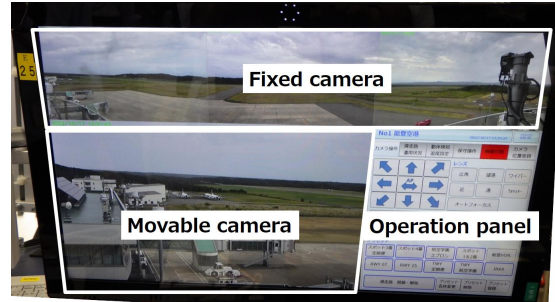


Figure 6: TV Screen

The four cameras are equipped with functions to detect motion, and one of which the movable camera is equipped with a function to track motion.

The operation of the TV equipment is described in "Mobile Communication Services in the Fourth Flight Information Service of Air Traffic Service Procedure Handbook" as follows:

19 Operation of TV Equipment for AFIS (excluding the TV equipment for remote control tower equipment)

(1) Application

TV equipment can be used to visually recognize the objects on the runway and the conditions of runways, taxiways, aprons, or grasp the aircraft movements such as take-off and landing, etc. at the airport.

Note: The use of TV equipment would not reduce the airport management organization's responsibility for the airport surface management.

(2) Operation Method

a In case of a visual confirmation of an obstacle on a runway using TV equipment, report the information to the airport management organization and request the physical confirmation.

b In case of a visual confirmation of an emergency aircraft using TV equipment, forward the information to the airport management organization and request the physical confirmation.

c In providing the information to aircraft on the obstacle on the runway based on the visuals by TV equipment, officers do so after the confirmation stipulated in above “a” was done as much as possible.

d In case that a visual confirmation by TV equipment is available for the aircraft's taking off, landing and vacating from the runway, the request for reporting to the relevant aircraft by radio communication may be omitted.

(9) Records on Movable Camera of TV Equipment and Communication Records

Before the serious incident occurred (see Figure 3), the movable camera of TV equipment recorded Aircraft A in parking and Aircraft B in the middle of taxiing toward the turn pad of Runway 25.

From 10:12:34 when Aircraft B taxied and became off from the viewing angle of movable camera to the time (10:13:44) when the movable camera was operated, upon receiving the report that there was Aircraft B on the runway, there was no video record that the camera had captured Aircraft B.

Besides, from the time when Aircraft B landed to the time when "RUNWAY IS CLEAR" was notified to Aircraft A, there was no record of movable camera that would check other aircraft on the runway and TV equipment functions to detect or track aircraft movements were not used.

Furthermore, according to the statement of Noto Radio, Noto Radio normally confirms aircraft movements with the movable camera not using TV equipment functions to detect or track aircraft movements, and when Aircraft B landed, Noto Radio also confirmed with the movable camera. However, Aircraft B became away from the mind of Noto Radio as the attention was focused on Aircraft A captured by the movable camera, therefore, Noto Radio failed to notice Aircraft B captured by the fixed camera.

Based on the communication records, after 10:11:54, when Noto Radio provided Aircraft B with the information that there would be no problem about taxiing, it was unable to confirm the communication that Noto Radio had requested Aircraft B to inform Noto Radio when Aircraft B vacated from the runway.

3. ANALYSIS

(1) Take-off of Aircraft A

The JTSC concludes that it is certain that even though Aircraft B had not yet vacated the runway it had landed on, Aircraft A took off from the runway.

From the verification result described in 2.7(4), Aircraft B in the vicinity of Runway 25 turn pad was most likely visible from the position where Aircraft A commenced to take off. However, the captain of Aircraft A had assumed that there would be no other aircraft on the runway, and while the captain of Aircraft A was feeling time pressure to keep the time schedule for the repeatedly continuing sightseeing flights, captain's attention was concentrated on pilot operations and confirmation of the instruments at the time of the take-off, and the captain more likely let Aircraft A take off without fully check of the safety on the runway.

It is highly probable that the captain of Aircraft A assumed that there would be no other aircraft on the runway, because of the contributing factor that Noto Radio forgot the existence of the Aircraft B taxiing on the runway and provided Aircraft A with information that "RUNWAY IS CLEAR".

Pursuant to the provision of Article 71-2 of the Civil Aeronautics Act, flight crew members shall keep watch for the runway by themselves so as not to collide with other aircraft or other objects at the time of take-off and landing. Besides, in the case where several aircraft use the same aerodrome, it is desirable for flight crew members of each aircraft to monitor the radio communication with other aircraft in addition to the information provided by AFIS in order to have common recognition among them regarding the air traffic condition.

Furthermore, in the case of the flight operation for sightseeing flight, etc. that would be repeated continuously in a short time, the time pressure will increase the workload and possibly cause wrong assumption or oversight, therefore, it is important to make a plan with plenty of time.

(2) Information Provided by Noto Radio

The JTSC concludes that it is certain that Noto Radio provided Aircraft A with "RUNWAY IS CLEAR" even though Aircraft B had not vacated from the runway.

It is highly probable that Noto Radio provided Aircraft A with "RUNWAY IS CLEAR" because while the workload increased due to the correction for the wrong input that occurred at the time of inputting the departure and arrival times for the repeatedly continuing sightseeing flights, the radio communication with Aircraft A started, and because Noto Radio's attention was focused on Aircraft A captured on the movable camera while having forgotten the existence of Aircraft B, Noto Radio judged that there would be no other aircraft on the runway without confirming with the movable camera regarding the status on whether there was no traffic on the runway to be used by Aircraft A.

It is necessary that while keeping in mind that flight crew members of aircraft conduct safety checks by using the information provided by AFIS in addition to their own outside watch, those engaged in AFIS shall provide the information "RUNWAY IS CLEAR" after ensuring that there is no relevant aircraft on the runway. In the case where several aircraft use the same aerodrome, it is important for those engaged in AFIS to grasp aircraft movements by communicating with the relevant flight crew members by radio communication, and it is desirable to use TV equipment functions to detect or track aircraft movements, as necessary.

In this serious incident, it is probable that by radio communication, Noto Radio should have required the aircraft that had landed, to report when vacating the runway in order to grasp the relevant aircraft movements, and should have confirmed the overall situation on the runway by checking with TV equipment after receiving the report that the relevant aircraft had vacated the runway.

(3) Implementation System for AFIS

The JTSC concludes that regarding AFIS implementation system at Noto Airport, although the system had been developed by assigning service positions and designating service support staff in preparation for complication of the services, the workload had been probably increasing when judging from the fact that Noto Radio was busy in operations of the services other than radio communication.

As AFIS is the services to provide information used for safety confirmation by aircraft, it requires the implementation system enable to provide reliable information to aircraft, even when the service operations become complicated due to temporary increase in operation workload of the services. Therefore, regarding the service implementation system, based on the characteristics and

service providing experiences at each airport, it is desirable to make a flexible and appropriate personnel management including assigning service positions so as to equalize the operation workload at each service position.

(4) Classification of Severity

The JTSB concludes that the distance between Aircraft A at the time of starting to take off and Aircraft B was certainly about 800 m. And the serious incident certainly falls under the severity classification of Category C (An incident characterized by ample time and/or distance to avoid a collision) of "Manual on the Prevention of Runway Incursions" of ICAO with classification tools provided by ICAO. (See Attachment "Severity Classifications of Runway Incursions").

4. PROBABLE CAUSES

The JTSB concludes that the probable cause of this serious incident that it is certain that even though Aircraft B had not yet vacated the runway it had landed on, Aircraft A took off from the runway.

It is probable that Aircraft A took off because the captain of Aircraft A had assumed that there would be no other aircraft on the runway, and the captain did not fully conduct visual safety check for the runway with a desire to keep the time schedule for the repeatedly continuing sightseeing flights.

The captain of Aircraft A had assumed that there would be no aircraft on the runway is most likely because with the increasing workload, Noto Radio, who had forgotten the existence of the Aircraft B having landed on the runway, provided Aircraft A with the information that "RUNWAY IS CLEAR" without fully confirming there was no traffic on the runway.

5. SAFETY ACTIONS

<p>5.1 Safety Actions Required</p>	<p>As described in ANALYSIS, flight crew members have to surely keep watch for the runway by themselves at the time of take-off and landing, and it is necessary to follow the procedures to implement this thoroughly. Besides, in the case where several aircraft use the same aerodrome, in order to have common recognition among them regarding the air traffic condition, it is desirable for flight crew members of each aircraft to make efforts to grasp other aircraft movements by monitoring not only the information provided by AFIS but also the radio communication with other aircraft as much as possible.</p> <p>Furthermore, in the case of the flight operation for sightseeing flight and others that would be repeated continuously in a short time, it is important to plan with plenty of time.</p> <p>In the case where those engaged in AFIS provide the information "RUNWAY IS CLEAR", it is important to implement thoroughly the procedures to ensure that there is no relevant aircraft on the runway.</p>
<p>5.2 Safety Actions Taken after the Serious Incident</p>	<p>(1) Safety Actions Taken by JANET CORPORATION</p> <ul style="list-style-type: none"> ① Disseminated this serious incident to all pilots. ② Provided safety education based on the past similar incidents, etc. ③ Revised sightseeing flight operation procedures and stipulated the following contents. <ul style="list-style-type: none"> a The sightseeing flight time shall be planned as five minutes or more and the passenger boarding and alighting time as five minutes, and flight operation information about scheduled flights, etc. shall be collected as much as possible. b Preliminary meetings shall be held with Airport Office and relevant ATC facilities to discuss radio communication, flight plan file methods, etc. c Radio communication shall be always monitored without changing tower or AFIS frequencies even at the time of passenger boarding and alighting time on the ground in order to always grasp traffic information on other aircraft. d Be sure to watch to ensure that there is no other aircraft on the

	<p>runway before landing and taking off, in addition, keep watch on other aircraft even in flight.</p> <p>e Be sure to hold short of the runway holding position, and shall not enter the runway before ensuring that there is neither other aircraft, etc. on the runway nor other aircraft over the both directions of runway extension lines. At this time, the captain shall call out that there is no other aircraft, etc. before taking action.</p> <p>f Do not revert to the original schedule even when the sightseeing flight is behind schedule.</p> <p>④ Provided all pilots with special training based on the revised sightseeing flight operation procedures.</p> <p>(2) Safety Action taken by the Civil Aviation Bureau (CAB)</p> <p>① Regarding the regulation in the Air Traffic Service Procedure Handbook that stipulates that service support staff shall be assigned as much as possible in advance, in order to respond to the sudden event and temporary increased workload, the CAB thoroughly made it known again to other local facilities that provide AFIS.</p> <p>② The CAB stipulated in the Air Traffic Service Procedure Handbook that work experiences and others of Air Traffic Service Flight Information Officers shall be taken into consideration according to the characteristics and service volume for each aerodrome at the time of assigning Air Traffic Service Flight Information Officers, who are engaged in AFIS or support the services.</p> <p>③ The CAB stipulated in the Air Traffic Service Procedure Handbook that services to ensure safety such as air radio transmits and receives, handling of ATC communications, runway condition checks, etc. shall be given priority over other services.</p> <p>④ The CAB stipulated in the Air Traffic Service Procedure Handbook that each local facility should establish in their operation procedures by taking into consideration the operating environment regarding the procedures to ensure that after confirming there has been no other aircraft on the runway, "RUNWAY IS CLEAR".</p> <p>⑤ Regarding ④ above, when each local facility establishes operation procedures, etc., the CAB has provided each local facility with guidance on how to properly conduct runway checks.</p>
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Severity Classifications of Runway Incursions

Severity classifications described in ICAO “Manual on the Prevention of Runway Incursions” (Doc 9870) are as described in the table below

Table 6-1 Severity classification scheme

<i>Severity classification</i>	<i>Description**1</i>
<i>A</i>	<i>A serious incident in which a collision is narrowly avoided.</i>
<i>B</i>	<i>An incident in which separation decreases and there is significant potential for collision, which may result in a time-critical corrective/evasive response to avoid a collision.</i>
<i>C**2</i>	<i>An incident characterized by ample time and/or distance to avoid a collision.</i>
<i>D</i>	<i>An incident that meets the definition of runway incursion such as the incorrect presence of a single vehicle, person or aircraft on the protected area of a surface designated for the landing and take-off of aircraft but with no immediate safety consequences.</i>
<i>E</i>	<i>Insufficient information or inconclusive or conflicting evidence precludes a severity assessment.</i>

**1 See the definition of “incident” of Annex 13.

**2 Shaded to show the pertinent classification of the serious incident.