AI2016-1

AIRCRAFT SERIOUS INCIDENT

INVESTIGATION REPORT

NEW CENTRAL AIRSERVICE CO., LTD.
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January 28, 2016

JTSB Japan Transport Safety Board

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.

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 SERIOUS INCIDENT INVESTIGATION REPORT

NEW CENTRAL AIRSERVICE CO., LTD. CESSNA 172P, JA4184 ATTEMPTED LANDING ON A CLOSED RUNWAY HYAKURI AIRFIELD, IBARAKI PREFECTURE, JAPAN AT AROUND 10:05 JST, SEPTEMBER 20, 2014

December 18, 2015

Adopted by the Japan Transport Safety Board

Chairman	Norihiro Goto
Member	Shinsuke Endo
Member	Toshiyuki Ishikawa
Member	Sadao Tamura
Member	Yuki Shuto
Member	Keiji Tanaka

1 PROCESS AND PROGRESS OF THE INVESTIGATION

This event falls under the category of "Attempted landing on a closed runway," as stipulated in Item (ii), Article 166-4 of the Ordinance for Enforcement of the Civil Aeronautics Act, and is classified as a serious incident.

On September 20, 2014, the Japan Transport Safety Board designated an investigator-in-charge and an investigator to investigate this serious incident. An accredited representative of the United States of America, as the State of design and manufacture of the aircraft involved in this serious incident, participated in the investigation. Comments were invited from parties relevant to the cause of the serious incident and the relevant State.

2 FACTUAL INFORMATION

2.1 History of the Flight

According to the statements of the captain and a controller at Hyakuri Airfield, Japan Air Self-Defense Force (hereinafter referred to as "the controller"), the history of the flight is summarized as follows.

On Saturday September 20, 2014, at around 09:18 Japan Standard Time (JST: UTC + 9hrs), a Cessna 172P, registered JA4184, operated by New Central Airservice Co., Ltd. (hereinafter referred to as "the Aircraft"), with the pilot in command and two staffs of the company onboard, took off from

	Ryugasaki Airfield in order to participate in the "Sky Day" event held at Hyakuri Airfield (hereinafter referred to as "the Airfield") following a Cessna 172P, registered JA3962 belonging to the company, and landed on the runway 03L (hereinafter referred to as "03L") of the Airfield at around 09:35. Then, the captain and three passengers boarded the Aircraft and the Aircraft took off from 03L of the Airfield for the first sightseeing at around 09:59. After taking off, the Aircraft turned right and entered the east side traffic pattern wider than usual. The Aircraft was given a landing clearance for 03L on the base-leg and the captain read it back. The captain understood the Aircraft should land on 03L. However, 03L paved with asphalt was melt into the brackish background and unclear. On the other side, the runway 03R (hereinafter referred to as "03R") was clearly looked white. Therefore, the captain thought it was 03L and the taxiway seen in the front was 03R, because 03R attracted the captain's attention and the captain could not see any runway in the back. It was planned that the Aircraft evacuated from the runway at the taxiway W and taxied towards the apron after landing. Therefore, the captain was approaching aiming at the touchdown zone marking that was the third from the threshold allowing the Aircraft to enter the apron without braking, thinking to perform the activities in an efficient way. At the moment, the captain could not see 03L on the left at all. The controller who controlled the Aircraft noticed that the Aircraft entered 03R when it approached the runway in the final approach and gave an instruction to the captain to make a go-around at around 10:05. Receiving this instruction of a go-around, the captain made a go-around. At this time, the Aircraft was flying at approximately altitude of 200 ft around the area where the nearest touchdown zone was not visible. The captain received the instruction of a go-around and was told that he was going to land on 03R from the controller. However, he did not understand what it meant. After the go around, the captain made a right turn at altitude of 500 ft. He looked back and noticed that the runway he tried to land was 03R for the first time. After that, the Aircraft entered a traffic pattern somewhat narrower than usual and landed on 03L at around 10:08.

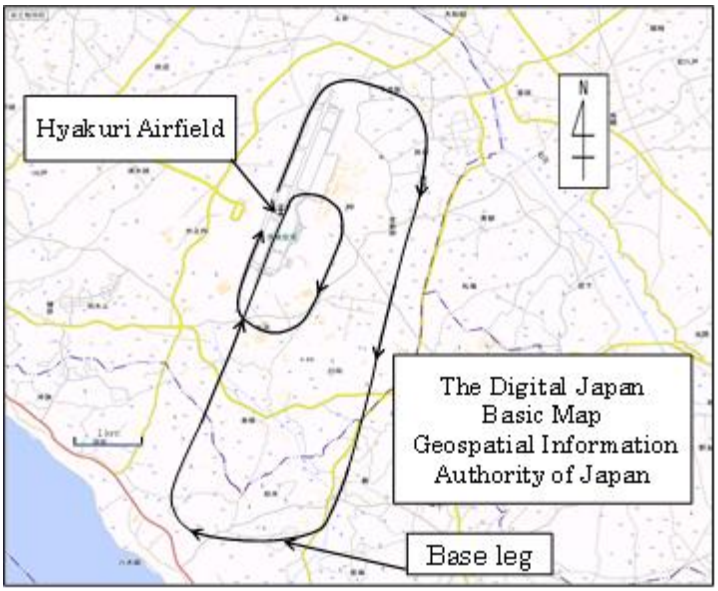

Figure 1　Estimated flight path

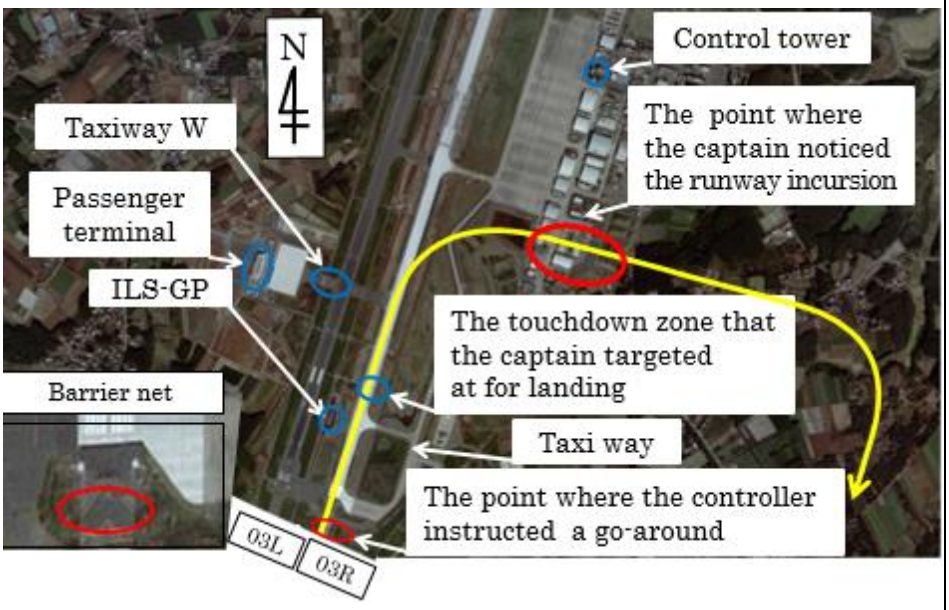

Figure 2　Situation of go-around

2.2 Injuries to Persons	None
2.3 Damage to Aircraft	None
2.4 Personnel Information	Captain Male, Age 59 Commercial pilot certificate(Airplane) : June 18, 1985 Type rating for single-engine (land) : October 8, 1984 Class 1 aviation medical certificate: Validity: July 29, 2015 Total flight time: 11,230 hours 00 minutes Total flight time on the type of aircraft: 5,583 hours 32 minutes
2.5 Aircraft information	Type: Cessna 172P Serial number: 17275273, Date of manufacture: July 27, 1981 Certificate of airworthiness: TOU-26-009, Validity: April 14, 2015

2.6 Meteoro-logical information	Aeronautical weather observations for the Airfield around the time of the serious incident were as follows: 10:00 Wind direction 040°, Wind velocity 07 kt, Visibility:10 km or more Cloud Amount: FEW, Cloud base: 2,000 ft, Type: Cumulus Cloud Amount: BKN, Cloud base: 12,000 ft, Type : Altocumulus Cloud Amount: BKN, Cloud base, 20,000 ft Temperature: 20℃, Dewpoint: 13℃ Altimeter setting (QNH) 29.95 inHg
2.7 Additional information	(1) Operation condition of the Airfield In the Airfield, the east runway (03R/21L : 2,700 m x 45 m, concrete pavement) and the west runway (03L/21R : 2,700 m x 45 m, asphalt and concrete pavement) are laid in parallel and mutually at 210 m. Civil aircrafts often use the west runway with a civil apron. On the day, the barrier net* was inspected around the overrun area approximately 45 m south from the threshold of 03R from 09:37 through 10:33, the 03R was closed and requests for landing on 03R were not allowed. (2) Sightseeing flights The sightseeing flights planned flying the east traffic pattern widened to the south of the Airfield by two Cessna aircrafts for about 20 minutes per flight (flight time: about 10 minutes)and total 14 flights (six flights in the morning and eight flights in the afternoon) . The serious incident occurred in the first flight of the Aircraft in the morning. The captain participated in the sightseeing flight every year. That was the fourth time. The captain himself attended the coordination meeting before the "Sky Day" event and he knew well the contents of the event. He also understood that pilots were likely to misidentify the runways because the Airfield had parallel runways. (3) Characteristics of human attentiveness and vision In general, human attentiveness depends largely on visual. Therefore, the area to the which visual line is not addressed is hard to be paid attention and the visual acuity significantly decreases when slightly misaligned from the visual direction (gaze direction). Accordingly, pilots keep a lookout by continuously moving the point of gaze (scan). According to "Airplane operation textbook " (p.8, Published by Japan Civil Aviation Promotion Foundation, September 20, 1971) supervised by Civil Aviation Bureau, Ministry of Land Infrastructure, Transport and Tourism, "lookout" is described as follows: *United States' FAA recommends that "effective scan is to look out with the center of the visual field within the compartments made by dividing space to be looked out by rapidly moving visual line from a compartment to another compartment in order."*

* "Barrier net" is a net made with nylon equipped at the end of the runway to prevent accidents due to overrun. The net is remotely controlled from the control tower to arrest aircrafts.

3 ANALYSIS

3.1 Involvement of weather	No
3.2 Involvement of pilot	YES
3.3 Involvement of equipment	None
3.4 Analysis of Findings	(1) Misidentification of runways due to an assumption The captain tried to land on closed 03R misidentifying it as 03L. It is highly probable that the reason was that the captain mistook 03R that was clearly seen white compared to 03L obscurely seen appearing dimmer from the base-leg that was rather distant than usual because he made a flight along the route widened to the south for the sightseeing flight for 03L that he should land on and mistook the taxiway for 03R. (2)Probability not to notice the misidentification by gazing the landing point Two runways can be identified when the Aircraft approaches the Airfield. However, the captain did not notice the misidentification of runways. It is somewhat likely that the captain gazed at an optimum landing point so that the captain who well knew the plan of the sightseeing flight could shorten the time required to go from the touchdown point to the apron to effectively perform the sightseeing flight and he could not find the runway cleared to land that was slightly misaligned from the gazing direction.

4 PROBABLE CAUSES

It is highly probable that this serious incident was caused by the fact that the captain misidentified the closed 03R that was clearly seen from distance with the difference in visibility of the paralleled runways at the Airfield as 03L cleared to land by assumption.

Regarding the captain did not notice the misidentification of runways, it is somewhat likely that the captain gazed at the landing point to effectively perform the sightseeing flight and was unable to find the runway cleared to land.

5 SAFETY ACTIONS

Safety actions taken by company based on this serious incident as follows:

(1) Deliverance of notification for dissemination of the case study and the preventive measures and for through execution of report or contact in case of accidents.

(2) Revision of company operation manuals for preventing misidentifying runways
- Prior confirmation of Airfield facilities and sightseeing flight course. Specially, to clearly regulate confirmation items for flying to an Airfield with parallel runways.
- To make passengers not to speak to the captain after base-leg during sightseeing flight.

(3) To offer safety education to flight crews regarding the following items:
- Human factor and human error
- Cautions for entering and landing on the airports with multiple runways.
- Crisis management
- Confirmation of sightseeing flight standard

(4) Implementation of special training and examination for the captain including safety education.