AI2010-4

AIRCRAFT SERIOUS INCIDENT
INVESTIGATION REPORT

PRIVATELY OWNED

J A 4 0 5 8

May 28, 2010

Japan Transport Safety Board

The investigation for this report was conducted by Japan Transport Safety Board, JTSB, about the aircraft serious incident of Privately Owned, Piper PA-46-310P, registration JA4058 in accordance with the Act for the Establishment of the Japan Transport Safety Board and Annex 13 to the Convention on International Civil Aviation for the purpose of determining causes of the aircraft serious incident and contributing to the prevention of accidents/incidents and not for the purpose of blaming responsibility of the serious incident.

This English version of this report has been published and translated by JTSB to make its reading easier for English speaking people who are not familiar with Japanese. Although efforts are made to translate as accurately as possible, only the Japanese version is authentic. If there is any difference in the meaning of the texts between the Japanese and English versions, the text in the Japanese version prevails.

Norihiro Goto
Chairman,
Japan Transport Safety Board

AIRCRAFT SERIOUS INCIDENT INVESTIGATION REPORT

PRIVATELY OWNED PIPER PA-46-310P, JA4058 ON THE TAXIWAY N-2 OF TOKUSHIMA AERODROME AT ABOUT 10:58 JST, OCTOBER 11, 2009

April 23, 2010

Adopted by the Japan Transport Safety Board (Aircraft Sub-committee)

1. PROCESS AND PROGRESS OF AIRCRAFT SERIOUS INCIDENT INVESTIGATION

1.1 Summary of the Serious Incident

On October 11 (Sunday), 2009, a privately owned Piper PA-46-310P, registered JA4058, landed on the runway 29 of Tokushima Aerodrome. At about 10:58 Japan Standard Time (JST: UTC+9hr, unless otherwise stated all times are indicated in JST), while it was taxiing towards the apron, it went into the construction area of the taxiway N-2 and stopped by hitting its nose to the ground.

The only person on board the aircraft was the captain, who did not sustain any injuries.

1.2 Outline of the Serious Incident Investigation

1.2.1 Investigation Organization

On October 11, 2009, the Japan Transport Safety Board designated an investigator-in-charge and one other investigator for investigation after it was notified that the occurrence was classified as an aircraft accident when the degree of the aircraft damage was judged so serious as to require a major repair. Afterwards, on October 30, 2009, it turned out that there was no such damage requiring major repair on the airframe. However, the occurrence fell under the category of “Inability to continue operation due to damage to propeller, rotor, landing gear, rudder, elevator, aileron or flap” as stipulated in Clause 8, Article 166-4 of the Civil Aeronautics Regulations of Japan, and was classified and notified again as a serious incident.

1.2.2 Representatives from Foreign Authorities

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.

1.2.3 Implementation of the Investigation

October 12, 2009 On-site investigation, aircraft examination and interviews

1.2.4 Comments from Parties Relevant to the Cause of the Serious Incident

Comments were invited from parties relevant to the cause of the serious incident.

1.2.5 Comments from the Participating State

Comments were invited from the participating State.

2. FACTUAL INFORMATION

2.1 History of the Flight

On October 11, 2009, a privately owned Piper PA-46-310P, registered JA4058 (hereinafter referred to as "the Aircraft"), took off from Yao Airport at 10:35, and landed on the runway 29 of the Tokushima Aerodrome (hereinafter referred to as "the Aerodrome") at 10:57, and was taxiing to spot No.1.

The outline of the submitted flight plan was as follows:

Flight rules: Instrument flight rules (IFR), Departure aerodrome: Yao Airport, Estimated off-block time: 10:25, Cruising speed: 160kt, Cruising altitude: 6,000ft, Route: SKE (ShinodaVOR/DME) – MIKAN (reporting point) – TSC (TokushimaVORTAC), Destination aerodrome: Tokushima Aerodrome, Estimated flight time: 0 h and 25 min

The history of the flight up to the time of the serious incident is summarized below, based on the statements of the captain of the Aircraft and air traffic controllers.

(1) Captain

I had about 38 years and a half flight experience, and I had been flying with the Aircraft for about 21 years of them. I had flown to the Aerodrome a number of times, and I had planned to go touring around Tokushima area by bicycle on the day. I took off from the runway 27 of Yao Airport without checking NOTAM and other things before departure.

After contacting with a Tokushima Approach, I approached the runway 29 by Visual approach. I got information on wind, 040°/08kt, from a Tokushima Tower (hereinafter referred to as "the Tower"), and I thought that there would be a slight tail wind when approaching the runway 29. There was no traffic back and forth and no rough air during the approach. The Aircraft had a normal touchdown as usual although the length of the after-landing roll was slightly longer. I retracted the flap and turned off the transponder.

After passing by the taxiway N-3 (hereinafter referred to as "N3"), I communicated with a Tokushima Ground (hereinafter referred to as "the Ground") following the instruction by the Tower. The Ground instructed me to taxi to the taxiway N-1 (hereinafter referred to as "N1"), and I thought that I read back N1, which seems to be an absent-minded read-back. I went a little too far from the entrance of the taxiway N-2 (hereinafter referred to as "N2") and turned right with a slight overshoot, and entered N2 as usual. I had a preconceived idea that I normally exited the runway by using N2. I did not notice unserviceability lights and "X" mark of closed marking. I might not have seen them from the left seat because the Aircraft has the long main wings, which might have shielded them. I think that I did not particularly watch the taxiway condition carefully, and taxied by maintaining the centerline. The surface of the taxiway looked as usual. I never expected that there was a hole on the taxiway, and I entered into the construction area without noticing.

Whenever I landed on the runway 29 of the Aerodrome, I used N2 at all times and never used N1. If I had felt abnormality when or after I entered N2, I should have

stopped immediately.

There was no trouble in the Aircraft and I did not change the seat position after it was adjusted to the best position. Visibility of the day was good and I had a good physical condition.

(2) Tower Controller

The Aircraft was approaching by Visual approach. I instructed the helicopter which was in training at spot D to stop training for a moment, and then issued the landing clearance to the Aircraft. I gave the wind information at short final that it was a crosswind.

At 10:57, the Aircraft landed on the normal touchdown point of the runway 29. During its taxiing, I instructed the Aircraft to taxi to N1 and to contact the Ground when it passed around N3. Afterwards, I informed the helicopter at spot D, on the right side from the tower, that there was no problem to restart the training, and I did not see the Aircraft then.

(3) Ground Controller

I had been in charge of the Ground for about one hour before the serious incident. I watched the Aircraft touching down to the runway 29. The control of the Aircraft was not transferred until it was on the runway after passing around N3. I instructed the Aircraft to taxi to spot No.1 via N1. The captain of the Aircraft read back correctly.

As the time for updating ATIS (Automatic Terminal Information Service) was drawing near, I left my position and went to the place inside the Tower where the recorder was located. ATIS is to be updated by the available controller in the Tower almost on the hour every hour.

When I was called again from the Aircraft, I asked the possibility of 180° turn as it seemed to have stopped on N2. However, it had already stopped by hitting its nose to the ground.

The serious incident occurred at about 10:58 on N2 of the Aerodrome (Latitude 34°08'08" N, Longitude 134°35'52" E).

(See Figure 1 Estimated Flight (Taxiing) Route, Photo 1 Serious Incident Site, Photo 2 Unserviceability Lights and Closed Marking, Attachment ATC Communication Records)

2.2 Injuries to Persons

None

2.3 Damage to the Aircraft

2.3.1 Extent of Damage

Minor damage

2.3.2 Damage to the Aircraft Components

Nose Landing Gear	The actuator was broken.
Fuselage	The bottom of engine cowling and the nose landing gear

door were damaged.

(See Photo 3 Damage Situation and Rub Marks of the Nose Wheel)

2.4 Personnel Information

2.4.1 Crew Information

Captain	Male, Age 71	
Commercial Pilot Certificate (Airplane)		December 9, 1975
Type rating for Single-piston engine (land)		September 7, 1972
Instrument Flight Certificate (Airplane)		June 6, 1977
Class 1 Aviation Medical Certificate		
Validity		April 29, 2010
Total flight time		2,805 h 38 min
Flight time in the last 30 days		8 h 32 min
Total flight time on the type of aircraft		1,420 h 00 min
Flight time in the last 30 days on the type of aircraft		8 h 32 min

2.4.2 The Controller Information

Ground Controller	Male, Age 23	
Certificate of ATC Controller		
Tower control		
Tokushima Tower		July 9, 2007
Aviation medical examination certificate		
Validity		August 24, 2010

2.5 Aircraft Information

2.5.1 Aircraft

Type	Piper PA-46-310P
Serial number	4608139
Date of manufacture	October 18, 1988
Certificate of airworthiness	DAI-20-563
Validity	December 18, 2009
Category of airworthiness	Airplane, Normal N
Total flight time	1,477 h 04 min
Flight time since last periodical check (500-hour check on June 11, 2009)	7 h 41 min

(See Figure 2 Three-angle View of Piper PA-46-310P, Photo 1 Serious Incident Site)

2.5.2 Weight and Balance

When the serious incident occurred, the Aircraft's weight is estimated to have been 1,527kg and the center of gravity is estimated to have been 3,475mm aft of the reference point, both of which are estimated to have been within the allowable range (maximum takeoff weight of 1,860kg, and 3,421 to 3,736mm of range of center gravity corresponding to the weight at the time of the serious incident).

2.6 Meteorological Information

Aeronautical weather observations for the Aerodrome around the time of the serious incident were as follows:

11:00 Wind direction 350° (variable 310 to 030°); Wind velocity 09kt;
Visibility 25km
Cloud: Amount FEW, Type Cumulus, Cloud base 3,000ft
Amount SCT, Type Stratocumulus, Cloud base 5,000ft
Amount FEW, Type Unknown, Cloud base 23,000ft
Temperature 19.8°C; Dew point 9.0°C
Altimeter setting (QNH) 30.15inHg

2.7 Communication Information

Communication between the Aircraft and the Tower/the Ground was good.
(See Attachment ATC Communication Records)

2.8 Aerodrome and Ground Facilities Information

2.8.1 Runway, N2 and Air Traffic Control

The Aerodrome was at 26ft elevation. The azimuth, length, and width of the runway are 11/29, 2,000m, and 45m, respectively. N2 is the taxiway obliquely crossed to the runway at about 30° and width is 23m. Distance from the runway 29 threshold to the entrance of N2 is about 1,650m. Distance from the entrance of N3 to the entrance of N2 is about 650m. Landing on the runway 29 and taxiing to civil apron, routing via N2 makes the taxiing distance a little shorter.

The air traffic control of the Aerodrome was conducted by Tokushima Air Support Squadron, Tokushima Air Training Group, Japan Maritime Self-Defense Force.
(See Figure 1 Estimated Flight (Taxiing) Route)

2.8.2 Lights and Marking

When this serious incident occurred, unserviceability lights (five aeronautical red lights: placed at about 3m intervals), which indicate to the aircrafts the unserviceability area in the aerodrome, were located on the entrance of N2 from the runway side and the entrance of N2 from the north parallel taxiway side. However, the lights were off as it was clear daytime.

The closed marking (yellow “X” mark) was displayed on N2 beyond the unserviceability lights on the runway side.

There remained taxiway centerline marking (yellow solid line) on N2 other than the construction area. There was a 10cm-wide groove, which was cut parallel to the taxiway right next to the taxiway centerline marking.
(See Figure 1 Estimated Flight (Taxiing) Route, Photo 1 Serious Incident Site, Photo–2 Unserviceability Lights and Closed Marking)

2.8.3 Construction Area

The construction area was located within the area controlled by Ministry of Defense. If an aircraft entered N2 from the runway side, it would get to the construction area about 194m ahead

from the unserviceability lights of the runway side. It was uneven ground, where the paved surface was removed and the gravel was exposed. The ground around where the Aircraft stopped by hitting its nose to the ground was 30cm deep from the paved surface.
(See Figure 1 Estimated Flight (Taxiing) Route, Photo 1 Serious Incident Site)

2.9 Information on the Serious Incident Site

2.9.1 Situation of the Serious Incident Site

The serious incident site was on N2 at the Aerodrome, within the construction area 126m north from the runway centerline. The Aircraft stopped by hitting its nose to the ground on the taxiway centerline with its nose facing the civil apron. There were no brake marks around.

There was black rub mark at the concrete base of the second left light, as viewed from the runway side, of the unserviceability lights at the entrance of N2 from the runway side. And a part of the concrete was chipped off. The fixing hardware of the base was bent, and position of the base was misaligned.

(See Figure 1 Estimated Flight (Taxiing) Route, Photo 1 Serious Incident Site, Photo 2 Unserviceability Lights and Closed Marking, Photo 3 Damage Situation and Rub Marks of Nose Wheel)

2.9.2 Detailed Situation of the Damage

The nose landing gear and both of the main landing gears of the Aircraft entered the construction area of N2 from the runway side. The nose landing gear leaned backwards in the retracting direction, and the bottom of the engine cowling touched the gravel. The actuator of the nose landing gear was broken at the mounting point, and the bottom of the engine cowling and the nose gear doors were damaged.

The tips of the two propellers were bent, and one side of the spinner was scarred.

There were white rub marks on the left side of the nose wheel.

(See Photo 3 Damage Situation and Rub Marks of Nose Wheel)

2.10 Additional Information

2.10.1 In Article 73-2 (Confirmation before Departure) of the Civil Aeronautics Act, Article 164-14 (Confirmation before Departure) and Article 188 (Movement on the Ground) of Civil Aeronautics Regulations of Japan, there are the following provisions. (Excerpt)

> *(1) The pilot in command shall not start an aircraft, unless he/she has confirmed that the aircraft has no problems for flight and the necessary preparation for air navigation has been completed, pursuant to the provision of Ordinances of the Ministry of Land, Infrastructure, Transport and Tourism.* (Act 73-2)
>
> *(2) Matters that must be confirmed by the pilot in command pursuant to Article 73-2 of the Act are as listed below:*
>
> *3) Information offered by the Minister of Land, Infrastructure, Transport and Tourism pursuant to the provision of Article 99 of the Act (hereinafter referred to as "aeronautical information").* (Regulations 164-14)
>
> *(3) When aircraft moves on ground in airport etc., it shall comply with the following standards:*

1) The forward view shall be thoroughly observed. (Regulations 188)

2.10.2 There were the following descriptions in Aeronautical Information Publication Supplement (Number 165/09, Published on September 24, 2009). (Excerpt)

165/09

Operational restrictions at Tokushima AD/RJOS

Operational restrictions at Tokushima AD will be placed due to construction as follows:

The exact date/time and change of planning period concerning TWY will be notified by further NOTAM RJOS/C.

Item	*Operational restrictions*		*Planning period(JST)*			*Remarks*
	Facility	*Condition*	*Start of Validity*	*End of Validity*	*Specified date/time zone*	
A	*TWY N2*	*closed*	*(1) —*	*OCT 09*	*2100-0600 exception: holidays etc.*	
			(2) OCT 09	*early APR 10*	*H24*	*•Unserviceability LGT and closed marking will be installed.*

2.10.3 There were the following descriptions in NOTAM concerning the closing of N2.

NOTAM No. 0096/09

N2 of Tokushima Aerodrome was to be closed from 06:00 on October 09, 2009 to 00:00 on April 11, 2010 (Japan Standard Time) due to construction. This NOTAM was related to Item A (2) concerning taxiway in Aeronautical Information Publication Supplement 165/09.

2.10.4 In Article 114 (Aerodrome Lights) and Article 117 (Criteria for Installation of Aerodrome Lights) of Civil Aeronautics Regulations, there are the following provisions for unserviceability light. (Excerpt)

(1) The types of aerodrome light shall be as listed below:

27) Unserviceability lights (Arrys of Lights installed to notify aircraft of an area that shall not be used)

(Regulations 114)

(2) The standards of the location, structure and so on of aeronautical lights shall be as listed below:

3) Aerodrome lights shall have the locations of installation, performance characteristics and structural designs specific to the respective light types as listed below:

(ff) Unserviceability lights

1) The lamp units of said light shall be installed such that, in the case where a runway or taxiway is in the area where use of aircraft is

forbidden, they shall be installed at both ends with approximate spacing of 3 meters (omitted).

(Regulations 117)

2.10.5 In Article 10 (Construction Practice Code in Restricted Area) of Air Navigation Service Processing Regulations established by the Civil Aviation Bureau of the Ministry of Land, Infrastructure, Transport and Tourism, there are the following provisions about closed markings. (Excerpt)

1 The color of closed markings shall be, (Omitted) yellow on taxiways and aprons.

3 The location of closed markings on taxiways and aprons shall be designated by the head of the Airport office of the Regional Civil Aviation Bureau as needed.

In addition, according to the above regulations, the length of the lines of "X" mark shall be longer than 18m and the width of the lines shall be wider than 1.8m.

As described in 2.8.3, the construction area where this serious incident occurred was in the area controlled by the Ministry of Defense, but the closed marking had been installed according to the above regulations.

3. ANALYSIS

3.1 Flight Crew Qualifications

The captain possessed both valid airman competence certificate and a valid aviation medical certificate.

3.2 Airworthiness Certificate of the Aircraft

The Aircraft had a valid airworthiness certificate and had been maintained and inspected as prescribed.

3.3 Meteorological Conditions

As described in 2.1 (1) and 2.6, visibility at the time of this serious incident was good. Judging from the time when the serious incident occurred and the direction of movement along the runway or N2 on which the Aircraft ran, it is considered highly probable that the position of the sun was not a factor for blocking the visibility ahead.

3.4 The Situations of the Aircraft and the Captain

3.4.1 Before the Flight

As described in 2.10.3, N2 of the Aerodrome had been closed all day two days before the occurrence of this serious incident, but as described in 2.1 (1), the captain had not check the aeronautical information associated with the flight before departing Yao Airport. Therefore, it is considered highly probable that the captain did not know that N2 of the Aerodrome, the destination aerodrome, had been closed.

3.4.2 ATC Communications

As described in Attachment, the captain said the word "N1" a number of times in the communication with the Tower or the Ground, but as described in 2.1 (1), it is considered probable that he did not pay particular attention to the fact that he was instructed to take N1, which he had never taken before when landing on the runway 29 in past flights; therefore, he absent-mindedly read back the instruction from the controller.

3.4.3 Entry into N2

As described in 2.1 (1), it is considered highly probable that the captain used the Aerodrome a number of times before and had no prior experience of taking N1 to go out of runway, because whenever he landed on the runway 29, he taxied to the civil apron via N2, which had a shorter taxiing distance.

As described above and in 3.4.1, the captain did not know that the N2 had been closed. Therefore, it is considered possible that although, as a matter of fact, he was instructed to take N1 and read it back while taxiing after landing on the runway 29, he did not recognize this clearly as described in 3.4.2, and as he came around N2, which he had taken a number of times before, partially automatically, he made a right turn toward it.

3.4.4 Unserviceability Lights and Closed Marking

As described in 2.8.2, unserviceability lights at the entrance of N2 were installed pursuant to the provision as described in 2.10.4, and N2 closed marking were displayed pursuant to the provision as described in 2.10.5.

As described in 2.1 (1), it is considered highly probable that the Aircraft made a right-hand turn, slightly overshooting, as the Aircraft entered N2 from the runway. As described in 2. 8. 1, however, N2 obliquely crossed to the runway at about 30° . Therefore it is considered probable that it was not the kind of overshoot which shaded the unserviceability lights, installed around the entrance of N2, with the right main wing, and it is considered possible that the captain overlooked the unserviceability lights because he, partially automatically, entered N2 when coming to it.

As described in 2.8.2, five unserviceability lights fixed on the concrete bases were installed at the entrance of N2, and as described in 2.9.1 and 2.9.2, it is considered highly probable that the Aircraft passed over the fixing hardware of the base with its nose wheel rubbing the right edge of the base of the second left light, and both right and left main landing gears (distance between wheels: 3.7m) went through a space between the unserviceability lights, which are installed about 3m intervals. As described in 2.1 (1), it is considered highly probable that the captain was not aware of the Aircraft passing over the hardware with its nose wheel rubbing the base.

In addition, it is considered possible that the reason why the captain did not notice the “X” marked closed marking was because he was concentrating on aligning the Aircraft to taxi on the taxiway centerline after it entered N2 while slightly overshooting, and the Aircraft was already close to the closed marking when in alignment with the centerline, which put him in a condition where he was unable to see the entire “X” mark behind the engine cowling and he had difficulty recognizing it as the closed marking.

It is considered possible that if the captain had had an intention of entering N2 at an early stage as the Aircraft taxied on the runway, he would have noticed the unserviceability lights and the closed marking.

3.4.5 Entry into Construction Area

As described in 2.9.1, there were no brake marks around the area where the Aircraft stopped by hitting its nose to the ground. In addition, as described in 2.8.3 and Figure 1, it is considered probable that if the Aircraft had entered N2 from the runway, it would have taxied for over 200 meters up to the construction area which would have left enough time to correct the operation of entering N2, slightly overshooting before reaching the construction area, and that if the captain had noticed the construction area ahead, he would have dealt with the situation by stopping immediately or turning around.

Judging from the descriptions above and in 2.1 (1), it is considered highly probable that the captain continued taxiing on N2 without noticing the construction area ahead.

It is considered probable that the captain did not pay particular attention to the surface conditions of the taxiway although trying to keep the taxiway center since he was accustomed to the Aerodrome and he had used N2 on a regular basis, and that he continued taxiing without knowing N2 was unavailable because he had not checked the aeronautical information before departure, therefore not noticing the construction area.

It is considered highly probable that the Aircraft became unable to continue its taxiing because it stopped by hitting its nose to the ground and damaged its nose landing gear, when it went

into the construction area.

3.5 The Situation of the Controller

According to the ATC Communication Records (Attachment), after having a touchdown to the runway 29, the captain properly read back the instructions from the Tower to taxi to N1, and after being transferred to the Ground, started the communication by requesting to taxi to civil apron via N1. In response, the Ground controller issued the clearance to taxi to No.1 Spot via N1, and the captain properly read back the instruction that he would taxi to No. 1 Spot via N1.

Thus the word "N1" was used in every communication regarding the taxiway with no errors in it. Therefore, it is considered highly probable that it would have been very difficult for the Ground controller to expect the Aircraft to enter N2.

As described in 2.1 (3), however, after the Aircraft was transferred from the Tower to the Ground, the Ground controller left his position without continued monitoring the Aircraft although it was taxiing on the runway. It is considered possible that if he had continued monitoring it then, or if he had asked another controller to take over his job when he had to leave his position by necessity, they would have noticed the Aircraft entering N2 or taxiing on N2, and this serious incident was prevented from occurring.

3.6 Prevention of Recurrence

As described in 2.10.1 (1) and (2), it is prescribed that a pilot-in-command shall not start an aircraft unless he/she has confirmed aeronautical information. But, as described in 3.4.1, it is considered highly probable that he did not carry out this. Since checking aeronautical information concerning departure aerodrome, destination aerodrome, routes in flight and so on is one of the most fundamental procedures for a pilot, he/she should never neglect to carry out before each flight and should try to keep himself updated.

In addition, as described in 3.4.3, it is considered possible that the captain, partially automatically, made a right turn into N2 when the Aircraft came around N2. As described in 3.4.4, it is considered highly probable that the captain was not aware of the unserviceability lights installed at the entrance of N2 when the Aircraft's nose wheel passed over the fixing hardware of the base, and continued taxiing on N2 while unaware of the closed marking ahead, and that as described in 3.4.5, it went on to run into the construction area without noticing it ahead. As described in 2.10.1 (3), any aircraft shall, when moving on the ground at an aerodrome, exercise full observation ahead. Therefore, it is considered highly probable that the captain exercised inadequate observation ahead at the time of taxiing. Thus there were several chances after landing to prevent this serious incident from occurring. Despite this, the captain let all the chances slip by. It is considered probable that the fact that the captain was accustomed to the Aerodrome made him less cautious at the time of taxiing.

It is necessary for a pilot-in-command to maintain his attitude to adhere to basic principles concerning safety even if he is accustomed to the aerodrome.

4. PROBABLE CAUSE

It is considered highly probable that this serious incident occurred because the Aircraft stopped by hitting its nose to the ground and damaged its nose landing gear, and became unable to continue its taxiing, when it went into the uneven construction area which had a drop from the taxiway, after it entered the closed taxiway while taxiing to the apron after landing on the runway 29.

It is considered probable that the captain entered the closed taxiway because he had not confirmed the aeronautical information before departure and the fact that he was accustomed to the Aerodrome, which he had used a number of times before, made him less cautious at the time of taxiing.

Figure 1　Estimated Flight (Taxiing) Route

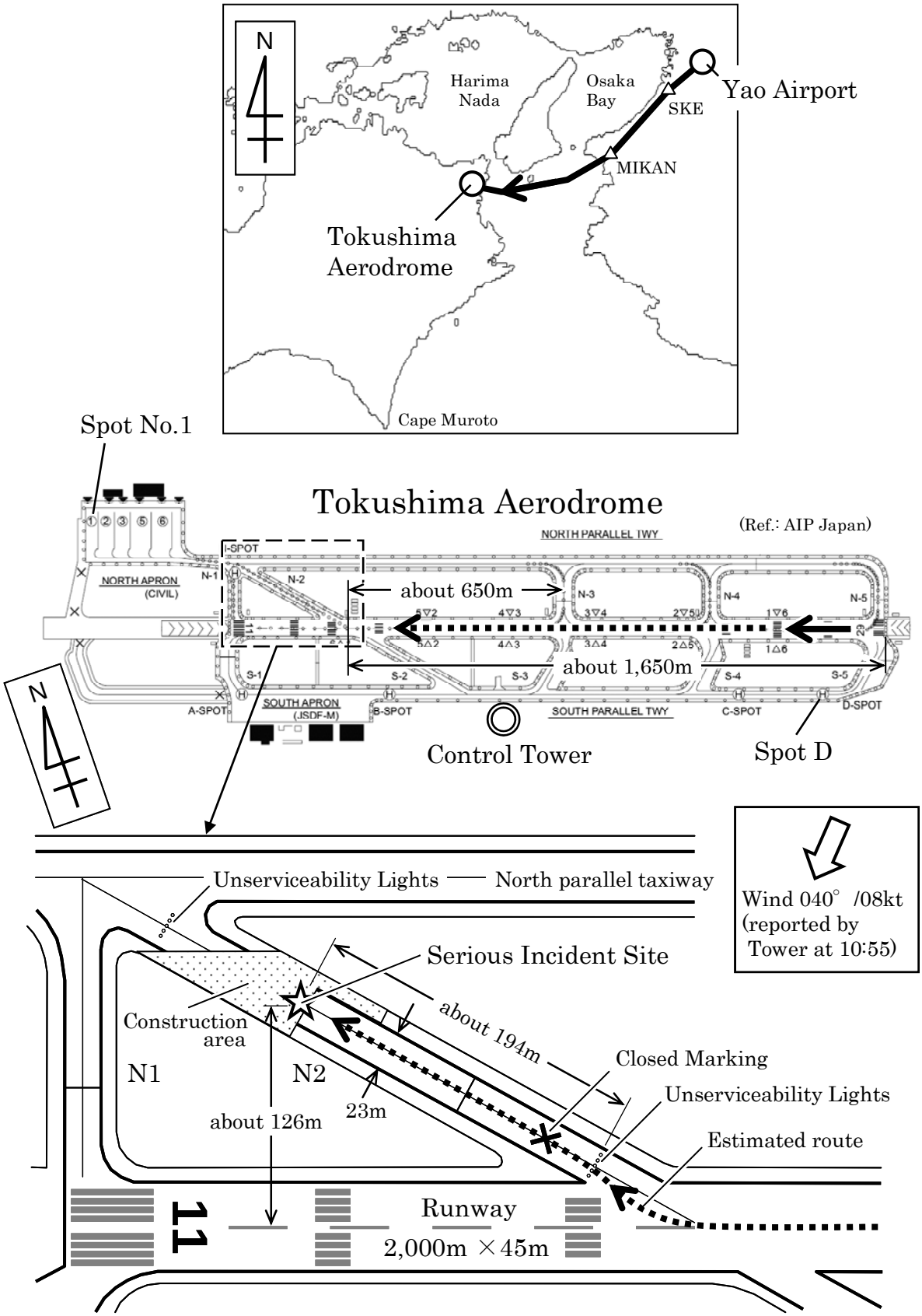


Figure 2　Three-angle View of Piper PA-46-310P

Unit ： m

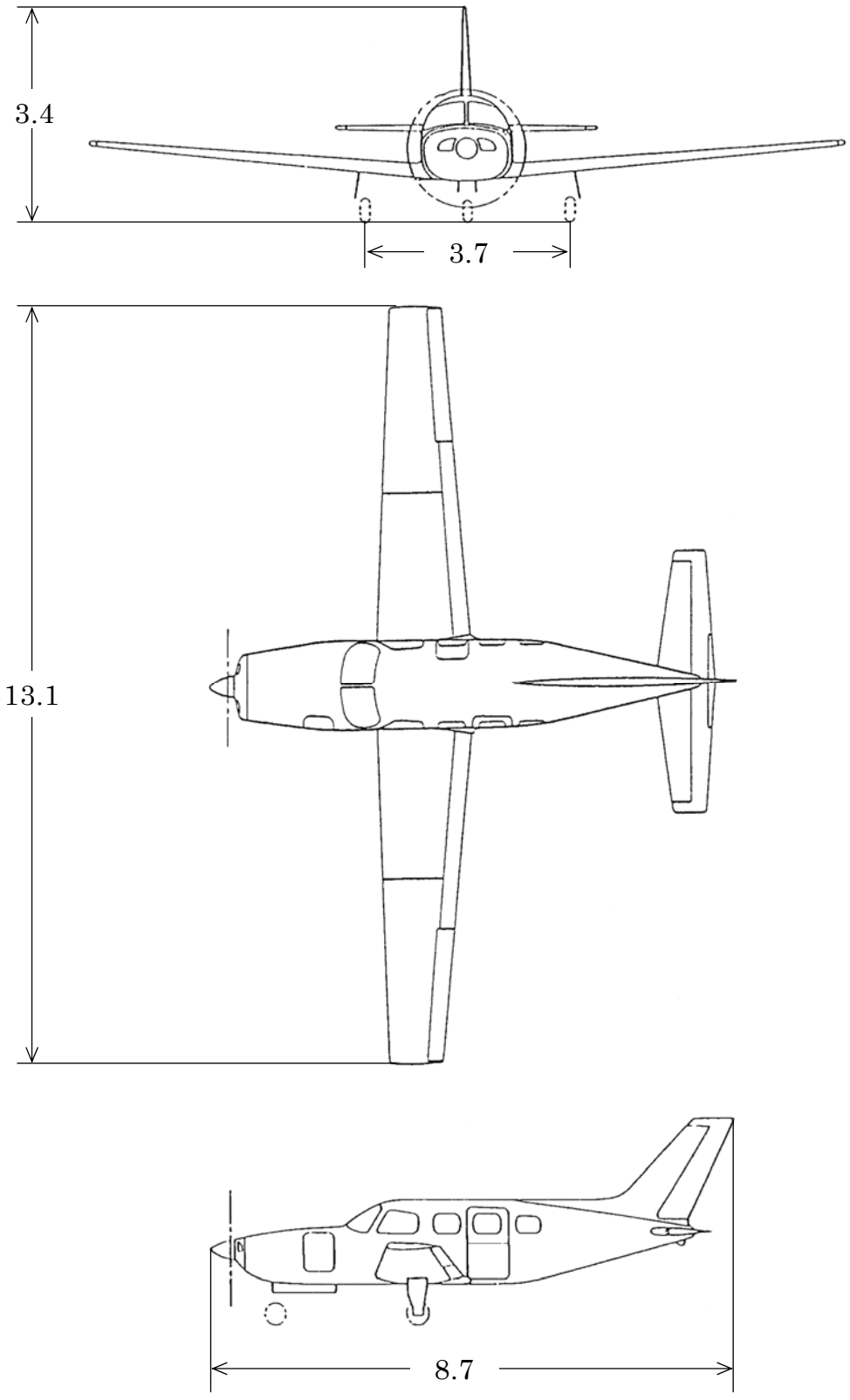
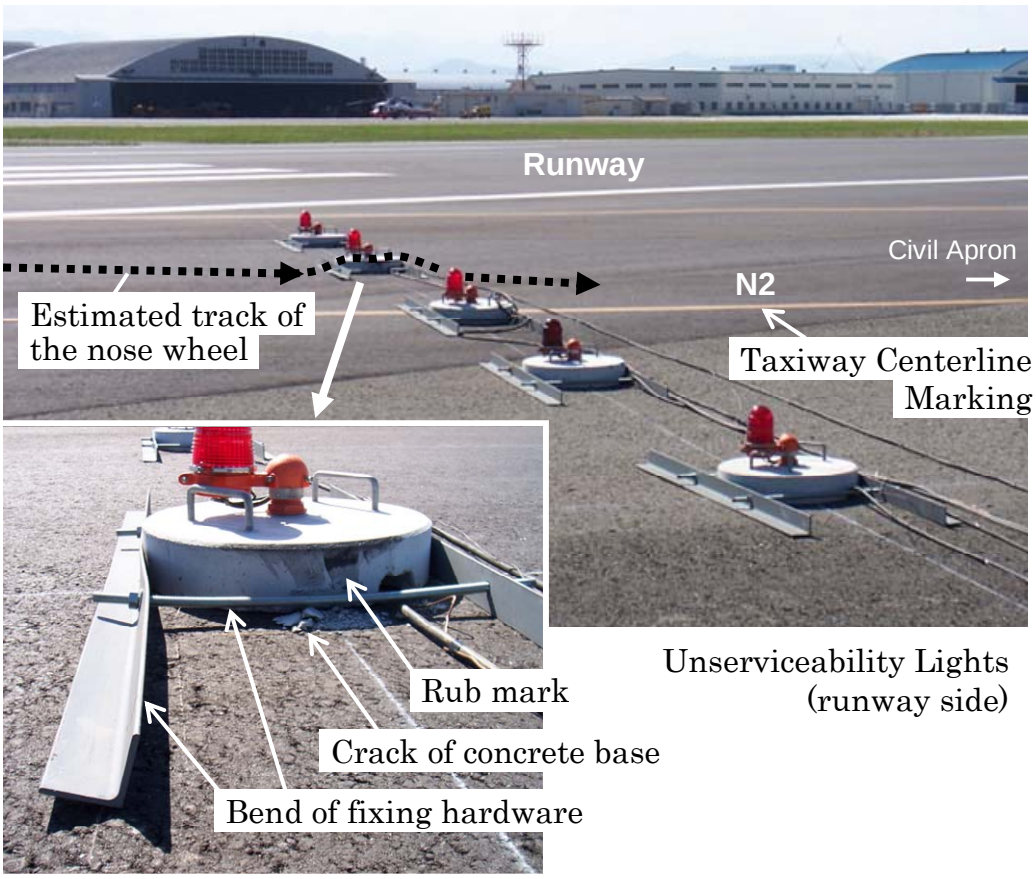


Photo 1　Serious Incident Site

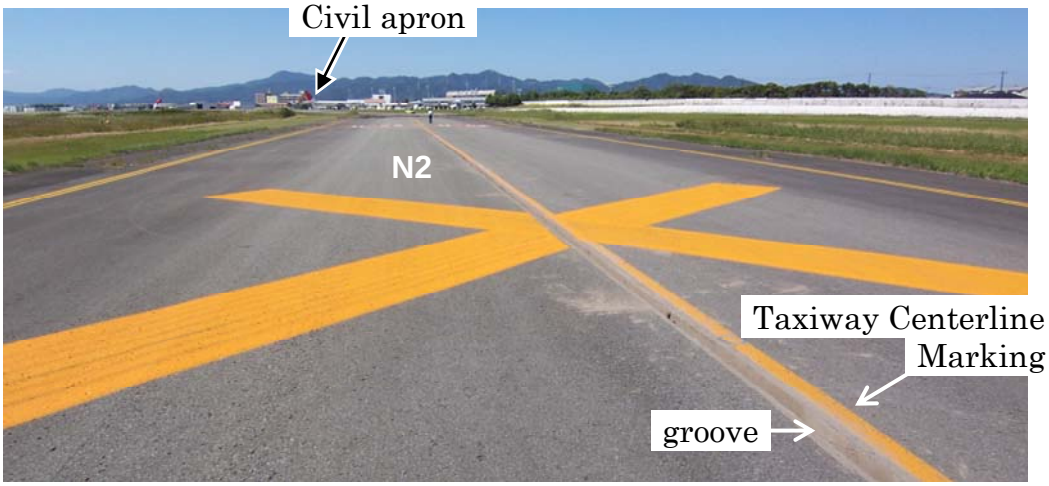
The Aircraft

Construction area

Photo 2　Unserviceability Lights and Closed Marking

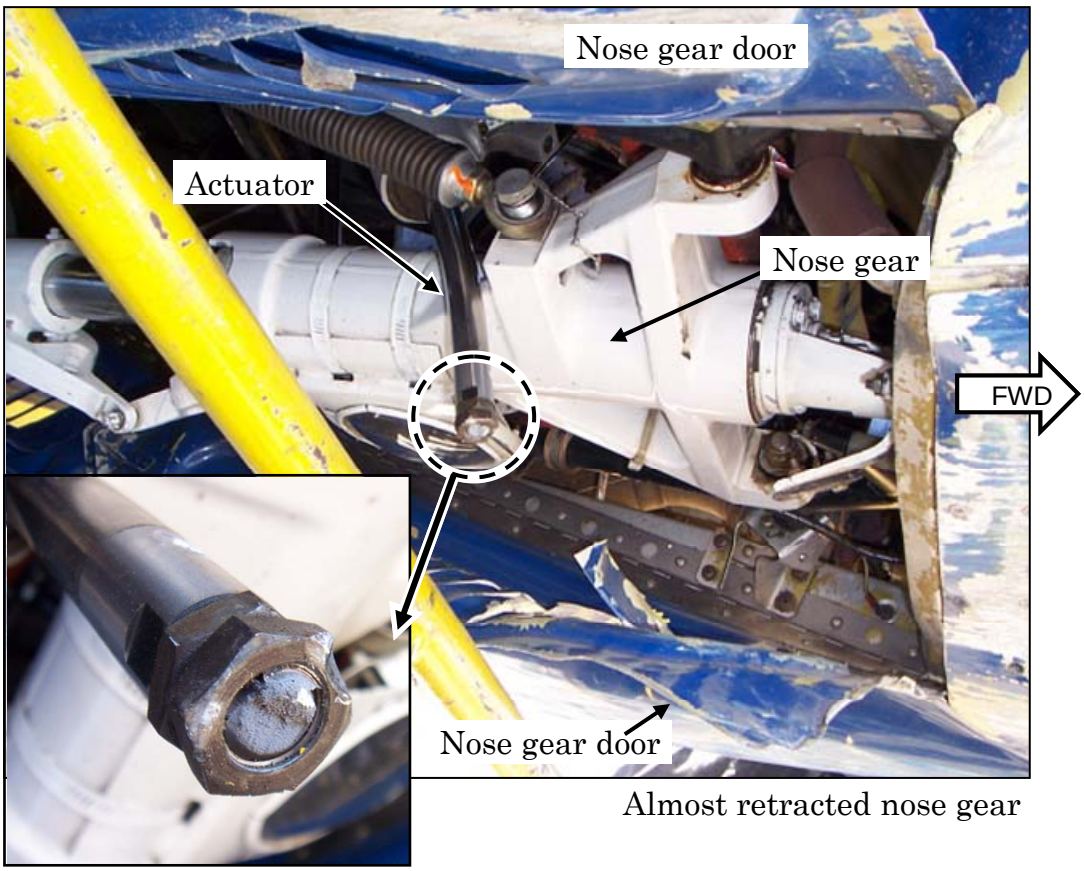


Unserviceability Lights (runway side)



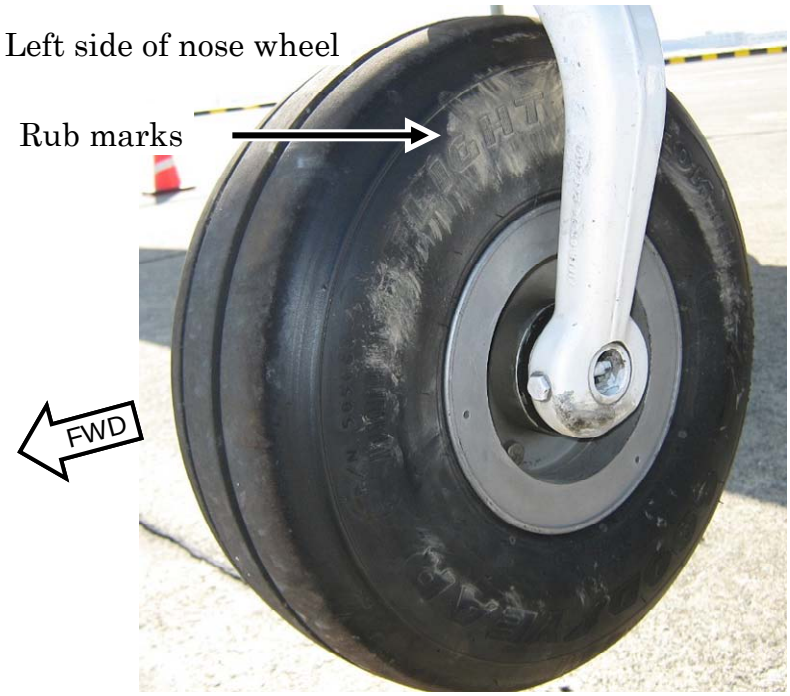
Closed Marking

Photo 3　Damage Situation and Rub Marks of the Nose Wheel



Almost retracted nose gear

Fractured part of the actuator



Attachment　ATC Communication Records

JST	From	Contents
		[Omitted]
10:52:47	APP	JA4058, turn right heading 280.
10:52:51	JA4058	*.. heading 280, 4058.
10:53:29	JA4058	Tokushima Radar, JA4058, field insight, 5.6 DME.
10:53:36	APP	4058, roger, ah..6 mile east of Tokushima, cleared for visual approach, runway 29, but surface wind 040 at 9. Caution slightly tail wind, contact Tokushima Tower 126.2.
10:53:49	JA4058	*.. tail wind, roger, contact Tokushima 126.2, 4058, good day.
		[Frequency changed, APP to TWR]
10:54:00	JA4058	Tokushima Tower, JA4058, to 4 miles on final, runway 29.
10:54:06	TWR	JA4058, Tokushima Tower, runway 29, cleared to land, 040 at 8.
10:54:12	JA4058	040 at 8, cleared to land, gear down three green, 4058.
10:55:12	TWR	Wind 040 at 8, caution cross wind.
10:56:37	TWR	Caution birds on the ground near the South-three.
		[The Aircraft touched down at about 10:57.]
10:56:56	TWR	JA4058, taxi to South..correction, **North-one** taxiway, contact Ground.
10:57:02	JA4058	**North-one** taxiway, contact Ground, 4058, good day.
10:57:07	TWR	JA109R, no traffic, report complete.
10:57:11	JA109R	Roger, report complete.
		[Frequency changed, TWR to GND]
10:57:18	JA4058	Tokushima Ground, good morning, JA4058, request taxi to civil terminal via **North-one** taxiway.
10:57:25	GND	JA4058, Tokushima Ground, good morning, taxi to..num..spot number one via **North-one**.
10:57:32	JA4058	Via **North-one** spot..number one, 4058.
		[Occurrence of the serious incident at about 10:58]
10:58:29	JA4058	Tokushima Ground, JA4058, <uh.. um.. >
10:58:39	GND	JA4058, <can you make a 180° turn at the point? >
10:58:43	JA4058	< Uh, I entered this taxiway and made a trouble hitting its nose on the ground. >
		[The rest is omitted.]

Legend
JST : Japan Standard Time
JA4058 : The Aircraft
JA109R : Helicopter in traning at the D-spot
APP : Tokushima Approach (124.0MHz)
TWR : Tokushima Tower (126.2MHz)
GND : Tokushima Ground (118.0MHz)
* : Unintelligible word
[ ] : Editorial insertion
< > : Japanese