

AA2007-4

AIRCRAFT ACCIDENT INVESTIGATION REPORT

PRIVATERY OPERATED
PIPER PA-28R-200, JA3743
FUKUSHIMA CITY, FUKUSHIMA PREFECTURE, JAPAN
OCTOBER 19, 2006, AROUND 14:32 JST

MAY 25, 2007

Aircraft and Railway Accidents Investigation Commission
Ministry of Land, Infrastructure and Transport

The investigation for this report was conducted by Aircraft and Railway Accidents Investigation Commission, ARAIC, about the aircraft accident of PRIVATERY OPERATED PIPER PA-28R-200, JA3743 in accordance with Aircraft and Railway Accidents Investigation Commission Establishment Law and Annex 13 to the Convention of International Civil Aviation for the purpose of determining cause of the aircraft accident and contributing to the prevention of accidents and not for the purpose of blaming responsibility of the accident.

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

Norihiro Goto,
Chairman,
Aircraft and Railway Accidents Investigation Commission

AIRCRAFT ACCIDENT INVESTIGATION REPORT

PRIVATELY OPERATED
PIPER PA-28R-200, JA3743
FUKUSHIMA SKYPARK AIRSTRIP,
FUKUSHIMA CITY, FUKUSHIMA PREFECTURE, JAPAN
OCTOBER 19, 2006, AROUND 14:32 JST

11 May, 2007

To be adopted by the Aircraft and Railway Accidents Investigation Commission
(Air Sub-committee Meeting)

Chairman	Norihiro Goto
Member	Ikuo Kusuki
Member	Shinsuke Endo
Member	Noboru Toyooka
Member	Yuki Syuto
Member	Akiko Matsuo

1. PROCESS AND PROGRESS OF AIRCRAFT ACCIDENT INVESTIGATION

1.1 Summary of the Accident

A privately operated Piper PA-28R-200, JA3743, took off from Yamagata Airport for a leisure flight on October 19 (Thursday), 2006, with only the pilot-in-command(PIC) on board. Around 14:32*1, the aircraft sustained damage as it landed at Fukushima Skypark Airstrip, Ozaso, Fukushima City, Fukushima Prefecture.

Injury to person on board:	None	
Damage to aircraft:	Medium level;	No fire

1.2 Outline of the Accident Investigation

On October 27, 2006, the Aircraft and Railway Accidents Investigation Commission, upon notification of the accident, appointed an investigator-in-charge and another investigator for the accident. On October 28, the aircraft was investigated and interviews were conducted. From October 30 through November 1, interviews were conducted.

An accredited representative of the United States of America, the state of the design and manufacture of the aircraft, participated in the investigation.

Comments were taken from the parties relevant to the cause of the accident.

*1 : All of the times indicated hereafter are in Japan Standard Time (JST).

2. FACTUAL INFORMATION

2.1 History of the Flight

On October 19, 2006, a privately operated Piper PA-28R-200 (dubbed “Arrow”), JA3743, (hereinafter called “the aircraft”) took off from Yamagata Airport at 14:13 with only the PIC on board, bound for Fukushima Skypark Airstrip (hereinafter called “FSP”).

The outline of the flight plan submitted to the JCAB Yamagata Airport Office was as follows:

Flight rules:	Visual Flight Rules (VFR)
Departure aerodrome:	Yamagata Airport
Estimated off-block time:	14:20
Cruising speed:	110 kt
Cruising altitude:	VFR
Route:	Kaminoyama
Destination aerodrome:	FSP
Estimated flight time:	0 h and 45 min
Endurance:	2 h and 30 min
Persons on board:	1

The history of the accident flight is summarized below, which is based on interviews with the PIC and an eyewitness.

(1) PIC

I had been flying the aircraft for about 15 years and since 2004 I have used FSP as the base operating site. On the day of the accident, having been informed by Fukushima Flight Service (flight assistance radio station at FSP) that wind was calm. I entered the downwind leg of the traffic pattern from the east side of FSP. On the final approach course to the runway 14, I was nearly at the center of the course and made a steeper approach than normal. The throttle was not completely closed and a little power was remained. The speed appeared to be 85 to 90 mph. During the final approach, I set the flaps at the full angle of 40°.

At FSP, when windy, there is a tendency to be pulled down towards the valleys that lie below the approach path, and to lose altitude when landing either runway 14 or 32. Considering that, I usually took a rather steep approach angle. On the day of the accident, however, wind was calm and the aircraft was not pulled down.

Before the landing, the aircraft was slightly banked to the right, but the angle was so small that no correction was required. I flared the aircraft slightly too early, so it stalled without feeling ground effect, which resulted in a hard landing on the runway 14. I felt a strong impact, but taxied the aircraft by its own power to the apron. As I disembarked from the aircraft, I found cracks on the upper surface of the RH wing. I immediately inspected the aircraft with a maintenance engineer in charge, and found damage on the RH wing, repair of which, I thought would be classified as “major

repair.” I had not experienced such hard landing with the aircraft before, and there was no abnormality on the aircraft on that day before the accident.

(2) Eyewitness (a staff of Fukushima Skypark management office)

At the time when the accident occurred, I was in charge of communication with the aircraft at Fukushima Flight Service, and looked at the landing of the aircraft.

The PIC reported me his entering base leg of the traffic pattern and then made an approach to the runway 14. The flare appeared to have been made at slightly high. I thought that the touch down point was slightly farther. I did not remember whether the aircraft was banked to the right before touchdown. There were no swirling winds during the period of the landing.

The accident occurred on the runway (37° 49' 31" N, 140° 23' 08" E) of FSP, Fukushima City, Fukushima Prefecture at, according to the log of the Fukushima Skypark management office, around 14:32.

(See Figure 1 and Photograph.)

2.2 Crew Information

PIC	Male, Age 63 years	
	Private pilot certificate (Airplane)	March 29, 1991
	Rating single-engine landplane	March 29, 1991
	2nd class aviation medical certificate	
	Validity of period	Until October 28, 2006
	Total flight time	1,396 h 20 min
	Flight time in the last 30 days	15 h 10 min
	Flight time on the aircraft type	Approximately 800 h
	Flight time in the last 30 days	15 h 10 min

2.3 Aircraft Information

Type	Piper PA-28R-200
Aircraft serial number	28R-7535237
Date of manufacture	April 30, 1975
Certificate of airworthiness	No. To-17-652
Validity of period	March 29, 2007
Airworthiness Category	Airplane, normal N
Total time in service	2,784 h 30 min
Time in service since last periodical check (50-hour check conducted on July 9, 2006)	31 h 05 min

Weight and Balance

When the accident occurred, the aircraft's weight and position of center of gravity are estimated to have been approximately 2,026 lb and approximately 86 in. aft of the datum point respectively, both of which are estimated to have been within the allowable ranges.

(See Figure 2.)

2.4 Meteorological Information

Weather observed by the Fukushima Skypark management office at the time relevant to the accident are as follows.

14:00 – Direction of wind...060°; Velocity of wind...02 kt; Visibility...10 km or more

2.5 Accident Site Information

2.5.1 Site Conditions

FSP (1,320 ft, or approximately 400 m, above mean sea level) is located in a mountainous area. The runway, azimuth 14/32, is 800 m long and 25 m wide. It is paved with asphalt and has a 60 m-long overrun area at each end. PAPI(precision approach path indicator) is not installed, aiming point marking and touchdown zone marking are not indicated. Because of the predominant mountain on the west side of FSP, only the traffic pattern on the northeast side of the runway is used.

For landing on either runway 14 or 32, there are deep valleys under the approach course.

(See Figure 1.)

2.5.2 Damage to Aircraft

RH wing Portions of the main structural members around the area where the RH main landing gear was fitted, sustained damage. The upper surface of the RH wing cracked and wrinkled.

(See Photograph.)

3. ANALYSIS

3.1 The PIC possessed an adequate airman certificate and valid airman medical certificate.

3.2 The aircraft had a valid airworthiness certificate and was maintained and inspected properly. Based on the interviews with the PIC, the investigation of the aircraft and the maintenance records of the aircraft, it is estimated that the aircraft had had no abnormalities up until the accident.

All of the damages described in 2.5.2 are estimated to have been caused by the impact of the hard landing.

3.3 It is estimated that the weather conditions prevailing at the time of the accident, did not contribute to the accident.

3.4 While accurate information which enables to analyze the approach angle, etc. of the aircraft was not obtained, it is estimated that, based on the descriptions in 2.1 and 2.5.2, the aircraft had rate of descent greater than normal at the time of touchdown.

When the aircraft approached and landed on the runway 14 of FSP with a slightly steeper angle than normal, it is considered that the aircraft made a hard landing from slightly higher point, because the PIC would have made flare slightly too early and subsequently made speed control inappropriately. It is also considered that the aircraft was slightly banked to the right immediately before touchdown, which would have caused the RH main landing gear to touch the ground first and this in turn would have caused the RH gear fitting area of the wing to receive substantial impact load that would have caused damage to part of the structural members of the RH wing.

As to the damage sustained by part of the RH wing's main structural members while the main landing gear was intact, it is considered possible that deterioration due to aging contributed to the damage as the aircraft was manufactured over 31 years ago.

3.5 As described in 2.1, the PIC inspected the aircraft with a maintenance engineer immediately after the accident and was afraid that the repair of the damage might be classified as "major repair." However, he did not confirm if the occurrence was classified as an accident or not.

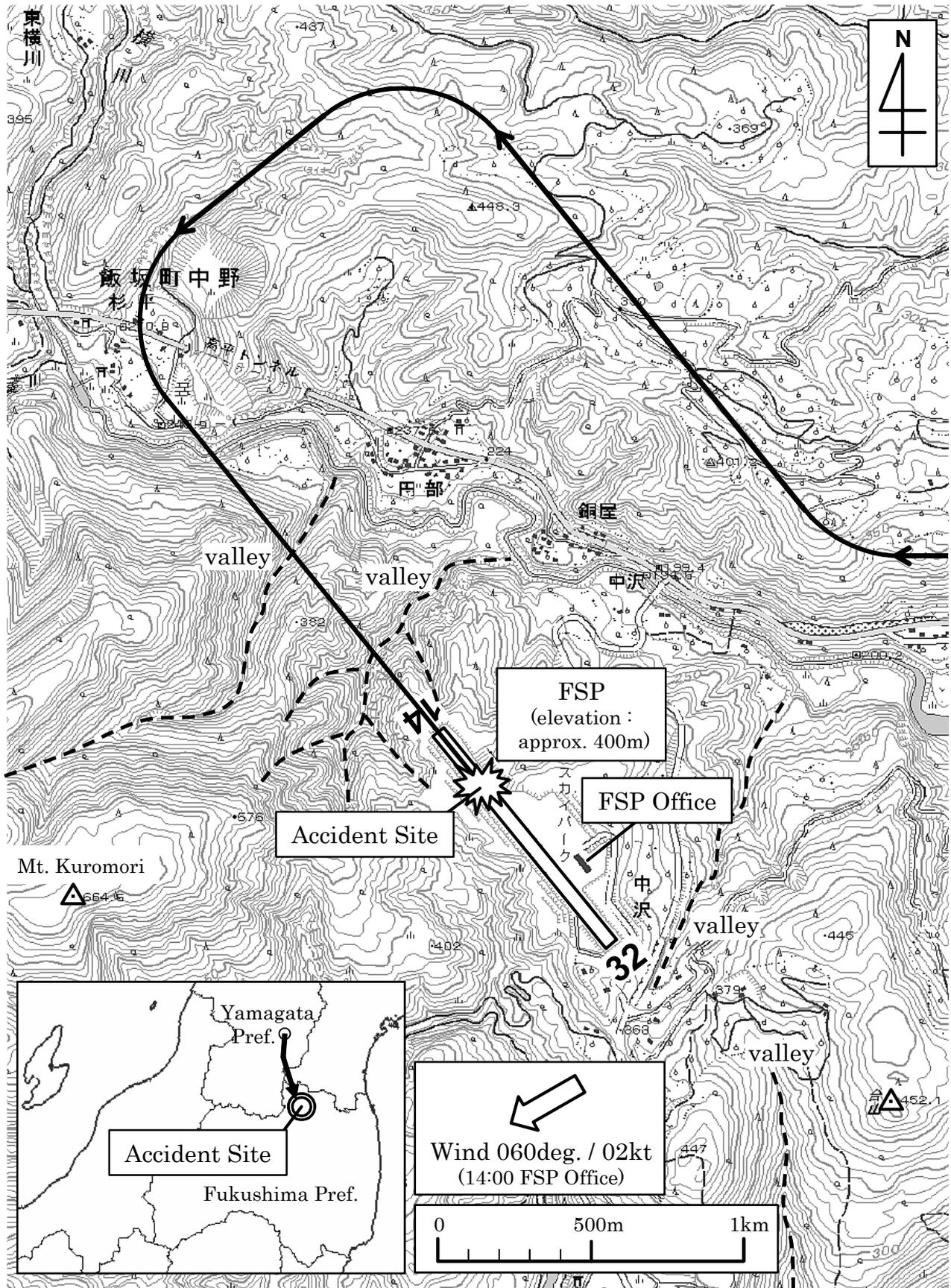
Article 76 (Duty of Report) of the Civil Aeronautics Law stipulates that, in the event of an accident, the PIC shall report its occurrence to the Minister of Land, Infrastructure and Transport. The accident covered in this report falls under "other accidents relating to aircraft as may be specified by Ordinances of the Ministry of Land, Infrastructure and Transport" as stipulated in Article 76 paragraph 1 subparagraph(5) of the Law, and specifically falls under "an occurrence which takes place during its operation, in which the aircraft sustains damage

(except for the case which the repair of aircraft does not fall into major repair)” as stipulated in Article 165-(3) of the Civil Aeronautics Regulations. While the PIC afraid that repair of the aircraft’s damage might fall under “major repair” stipulated in the table in Article 5-(6) of the Regulations, it is considered that he did not make confirmation because he did not fully understand the requirements stipulated in above-mentioned subparagraph(5).

4. PROBABLE CAUSE

It is estimated that when landing on the runway 14 of FSP the accident was caused by inappropriate flare that the PIC performed, which resulted in touchdown at a large rate of descent and damage of the aircraft.

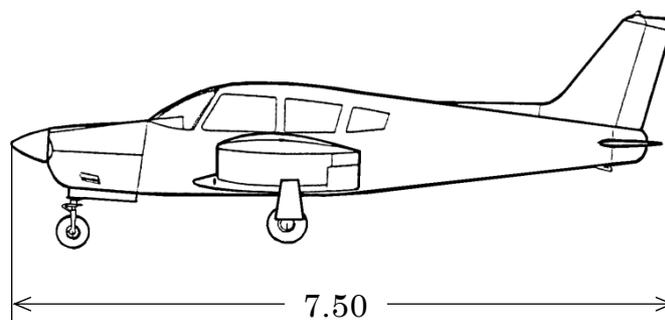
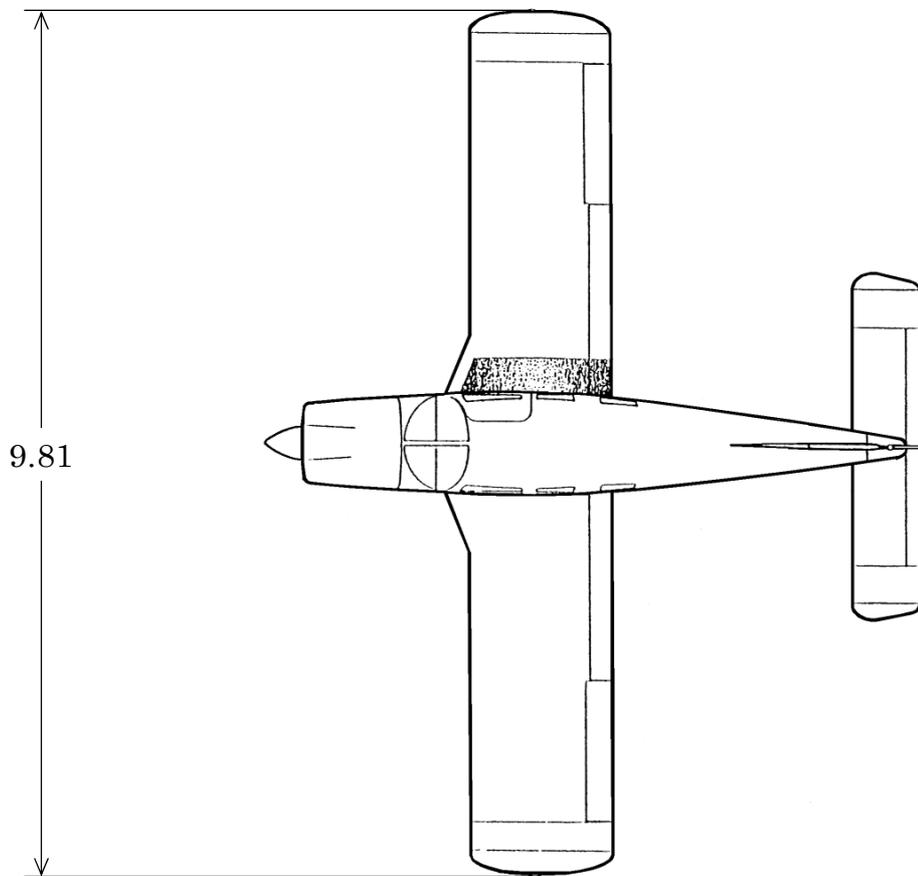
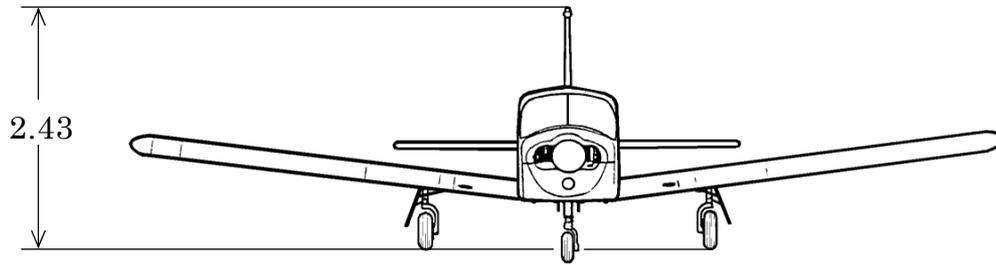
Figure 1 Estimated Flight Route



1:25,000 Scale Topographic Map by Geographical Survey Institute

Figure 2 Three views of Piper PA-28R-200

Unit : m



Photograph: Condition of Damages

