



**KOMITE NASIONAL KESELAMATAN TRANSPORTASI
REPUBLIC OF INDONESIA**

PRELIMINARY

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Aircraft Serious Incident Investigation Report

PT. Alfa Trans Dirgantara

Cessna 208; PK-ASE

Kasonaweja Airstrip

Republic of Indonesia

12 December 2018

2019

This Preliminary Report is published by the Komite Nasional Keselamatan Transportasi (KNKT), Transportation Building, 3rd Floor, Jalan Medan Merdeka Timur No. 5 Jakarta 10110, Indonesia.

The report is based upon the initial investigation carried out by the KNKT in accordance with Annex 13 to the Convention on International Civil Aviation Organization, the Indonesian Aviation Act (UU No. 1/2009) and Government Regulation (PP No. 62/2013).

The preliminary report consists of factual information collected until the preliminary report published. This report will not include analysis and conclusion.

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Jakarta, January 2019
**KOMITE NASIONAL
KESELAMATAN TRANSPORTASI
CHAIRMAN**



SOERJANTO TJAHHONO

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ABBREVIATIONS AND DEFINITIONS

AOC	:	Air Operator Certificate
C of A	:	Certificate of Airworthiness
C of R	:	Certificate of Registration
CASR	:	Civil Aviation Safety Regulation
DGCA	:	Directorate General of Civil Aviation
GPS	:	Global Positioning System
KNKT	:	<i>Komite Nasional Keselamatan Transportasi</i> / National Transportation Safety Committee
LT	:	Local Time
MFD	:	Multi-Function Display
SD	:	Secure Data
UTC	:	Coordinated Universal Time

SYNOPSIS

On 12 December 2018, a Cessna 208 aircraft was being operated by PT. Alfa Trans Dirgantara (Alfa Aviation) as unscheduled passenger flight in Papua area, Indonesia. The flights of the day schedule for the aircraft were Sentani International Airport (WAJJ) – Kasonaweja Airstrip – Sentani – Bime Airstrip – Sentani – Borne Airstrip – Sentani.

About 0630 LT, the ground staff of Alfa Aviation at Kasonaweja provided the meteorological information to the pilot of which indicated that the weather was good. During the preflight preparation, there was no record or report of aircraft system malfunction.

At 0710 LT, the aircraft departed from Sentani with intended cruising altitude of 10,500 feet. On board the aircraft were one pilot and seven passengers with total cargo of 241 kg. The weather during cruising was good and when the aircraft approached Kasonaweja the pilot noticed several clouds on east and north of Kasonaweja.

The aircraft flew overhead Kasonaweja and the pilot had visual contact with the runway. The pilot then joined right downwind runway 17 and made orbit to check the runway condition and the final path of the runway. The pilot noticed slight rain on the base leg and the runway was wet. As the runway was in sight, the pilot decided to join the final to continue the landing approach.

On final, the runway was in sight and the pilot aimed to touch down on touchdown zone which indicated by several touchdown marks on the beginning runway 17.

About 0812 LT, the aircraft touched down about 140 meters from the beginning runway and then the pilot applied reverse and brake. The aircraft continued rolling and the pilot anticipated that the aircraft would not be able to stop on the runway. About the end of runway, the pilot applied left rudder and left brake to prevent the aircraft entering the down slope about 14 meters from the end of runway 17.

The aircraft skidded to the left and stopped outside the runway about 14 meters from the end of runway 17. The right main wheel was on downslope and the aircraft tilted to the right. The propeller blades bent backward and the right wing was damaged.

After the aircraft stopped the pilot shutdown the engine and conducted passenger evacuation using left forward door.

No one injured in this occurrence.

The KNKT informed safety actions taken by the Alfa Aviation resulting from this occurrence and acknowledged the safety actions taken by the Alfa Aviation, however, there still remain safety issues that need to be considered. Therefore, the KNKT issues the following safety recommendations addressed to the Alfa Aviation.

The investigation is continuing and should any further relevant safety issues emerge during the course of the investigation, KNKT will immediately bring the issues to the attention of the relevant parties and publish as required.

1 FACTUAL INFORMATION

1.1 History of the Flight

On 12 December 2018, a Cessna 208 aircraft was being operated by PT. Alfa Trans Dirgantara (Alfa Aviation) as unscheduled passenger flight in Papua area, Indonesia. The flights of the day schedule for the aircraft were Sentani International Airport (WAJJ)¹ – Kasonaweja Airstrip² – Sentani – Bime Airstrip – Sentani – Borne Airstrip – Sentani.

Prior departure, the Alfa Aviation ground staff at Sentani received information from the charterer agent at Kasonaweja that the weather was good. About 0630 LT³, the Alfa Aviation ground staff at Sentani forwarded the weather information to the pilot. During the preflight preparation, there was no record or report of aircraft system malfunction.

At 0710 LT, the aircraft departed from Sentani with intended cruising altitude of 10,500 feet. On board the aircraft were one pilot and seven passengers with total cargo of 241 kg. The weather during cruising was good and when the aircraft approached Kasonaweja the pilot noticed several clouds on east and north of Kasonaweja.

The aircraft flew overhead Kasonaweja and the pilot had visual contact with the runway. The pilot then joined right downwind runway 17 and made orbit to check the runway condition and the final path of the runway. The pilot noticed slight rain on the base leg and the runway was wet. As the runway was in sight, the pilot decided to join the final to continue the landing approach.

On final, the runway was in sight and the pilot aimed to touch down on touchdown zone which indicated by several touchdown marks on the beginning runway 17.

About 0812 LT, the aircraft touched down about 140 meters from the beginning runway and then the pilot applied reverse and brake. The aircraft continued rolling and the pilot anticipated that the aircraft would not be able to stop on the runway. About the end of runway, the pilot applied left rudder and left brake to prevent the aircraft entering the down slope about 14 meters from the end of runway 17.

The aircraft skidded to the left and stopped outside the runway about 14 meters from the end of runway 17. The right main wheel was on downslope and the aircraft tilted to the right. The propeller blades bent backward and the right wing was damaged.

After the aircraft stopped the pilot shutdown the engine and conducted passenger evacuation using left forward door.

No one injured in this occurrence.

1 Sentani International Airport (WAJJ), Papua will be named as Sentani for the purpose of this report.
2 Kasonaweja Airstrip, Papua will be named as Kasonaweja for the purpose of this report.
3 The Local Time (LT) in Papua is UTC+9 hours.

1.2 Personnel Information

Pilot in Command

Age	: 39 years old
Nationality	: Indonesia
Date of joining company	: 1 July 2013
License	: Commercial Pilot License
Date of issue	: 17 September 2012
Aircraft type rating	: Single Engine Land
Instrument rating validity	: 31 August 2019
Medical certificate	: First Class
Last of medical	: 5 June 2018
Validity	: 31 December 2018
Medical limitation	: None
Last line check	: N/A
Last proficiency check	: 11 July 2018

Flying experience

Total hours	: 1,462 hours 49 minutes
Total on type	: 1,247 hours 11 minutes
Last 90 days	: 132 hours 29 minutes
Last 30 days	: 79 hours 8 minutes
Last 7 days	: 7 hours 30 minutes
Last 24 hours	: 5 hours 19 minutes
This flight	: About 1 hour

1.3 Aircraft Information

The Cessna 208B aircraft registered PK-ASE was manufactured in 2015 by Cessna Aircraft Company with serial number of 20800571. The aircraft had valid Certificate of Airworthiness (C of A) and Certificate of Registration (C of R). The total hour since new was 2,354 hours and 14 minutes and the total cycles since new was 2,947 cycles.

The engine installed was PT6A-114A manufactured by Pratt & Whitney, Canada with serial number of PCE-PC2136. The total time since new was 2,354 hours and 14 minutes.

The aircraft equipped with Global Positioning System (GPS) manufactured by Garmin with type/model G1000 which has capability of flight data logging. According to the Garmin G1000 Integrated Flight Deck Pilot's Guide, the data logging capability would automatically store critical flight and engine data on a

Secure Digital (SD) data card inserted into the top card slot of the Multi-Function Display (MFD). The data logging is written to the SD data card once each second while the MFD is powered ON. If no SD card has been inserted, “NO CARD” is displayed. When data is being written to the SD card, “LOGGING DATA” is displayed.

The logging data capable to record 51 parameters including time, coordinate, GPS altitude, indicated airspeed, vertical speed, ground speed, pitch attitude angle and roll attitude angle. All of recorded parameters could be downloaded.

During the occurrence, the SD data card for the flight data logging was not inserted to the Garmin G1000 and the investigation unable to retrieve the data.

The aircraft was not equipped with flight recorder and it was not required by current Indonesia regulation for this type of aircraft.

1.4 Meteorological Information

The meteorological information at Kasonaweja was provided by charterer agent by visual observation.

1.5 Aids to Navigation

The Alfa Aviation published airstrip information which contained arrival and departure guidance to Kasonaweja airstrip.

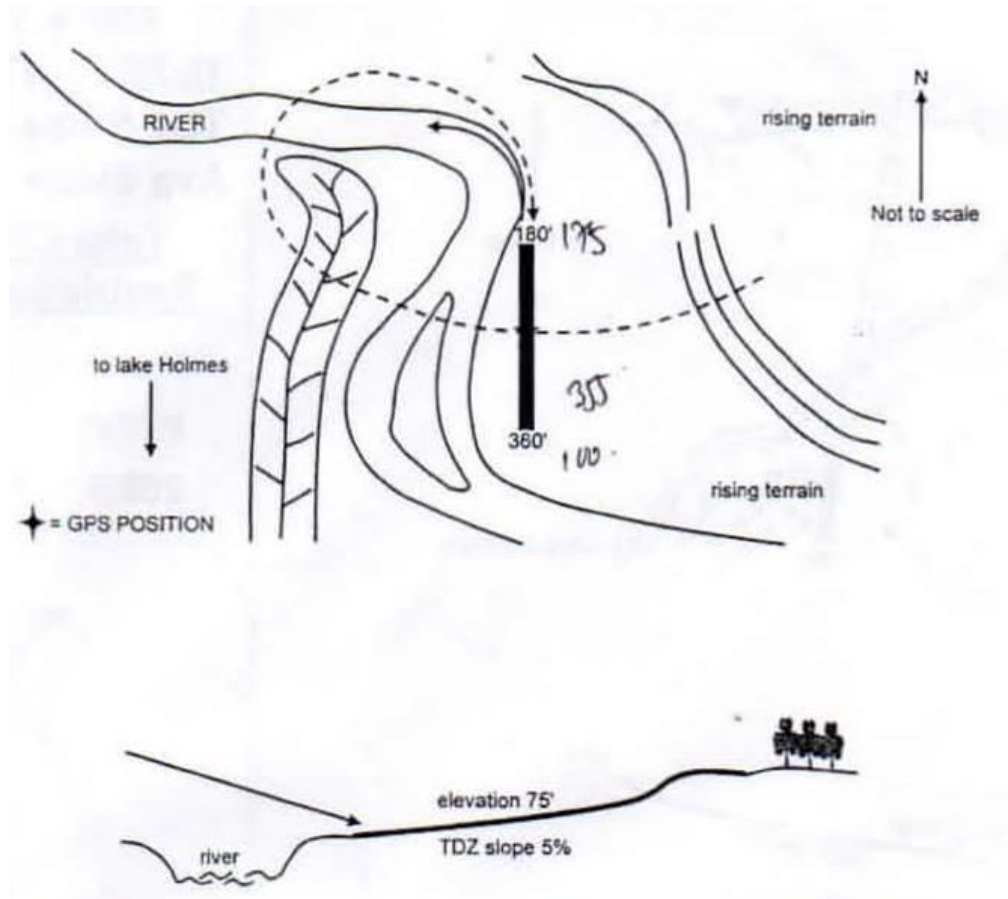


Figure 1: The departure and arrival guidance in Kasonaweja

1.6 Aerodrome Information

The Kasonaweja airstrip was located in the Mamberamo Raya district, Papua and operated by the Directorate General of Civil Aviation (DGCA). No air traffic services were provided at the Kasonaweja airstrip.

According to the Aeronautical Information Publication Volume IV published by the DGCA, the Kasonaweja airstrip information was as follows:

Aerodrome authority : Directorate General of Civil Aviation

Aerodrome reference point : 02°18'S; 138°03'E

Runway Information

- Number designation : 18 – 36
- Dimension : 450 x 23 meters
- Surface : Grass

The Alfa Aviation published airstrip information of Kasonaweja which contained the following information:

Aerodrome reference point : 02°18.18'S; 138°01.98'E

Runway Information

- Bearing : 180° – 360°, corrected to 175° – 355°
- Dimension : 457 x 23 meters
- Surface : Grass, can be muddy and slippery after rain.
Grass may be long

Weather : Normally open. Can have ground fog in the morning. Occasionally thunderstorms in the afternoon.

Hazards : Reduce load if soft. If in doubt about the conditions, contact SIL pilots.

1.7 Wreckage and Impact Information

The aircraft stopped outside the runway about 14 meters from the end of runway 17, the right landing gear was on downslope. The aircraft tilted to the right about 45°. The propeller and the right wing impacted ground. The propeller blades bent backward and the right wing was damaged.



Figure 2: The occurrence site



Figure 3: The propeller bent backward



Figure 4: The damaged right wing

1.8 Organizational and Management Information

1.8.1 Aircraft Operator

The aircraft is operated by PT. Alfa Trans Dirgantara (Alfa Aviation) which had valid Air Operator Certificate (AOC) number 135-012. The Alfa Aviation is authorized to conduct air transportation carrying passengers and cargo in non-scheduled operation within and outside Indonesia for aircraft operations under Civil Aviation Safety Regulation (CASR) Part 135.

The Alfa Aviation operated one Robinson R66 helicopter, one RA 390, one Cessna 172S, one Cessna 208B and two Cessna C208 aircraft (including the occurrence aircraft).

1.8.2 DGCA Circular Number SE.003 of 2018

On 26 January 2018, the Directorate General of Civil Aviation issued Circular number SE.003 of 2018⁴ which contained preventives measures of several occurrence types including runway excursion. The circular described runway excursion has in majority two main causes and the DGCA required all aircraft operator to follow preventive measures as follows:

Causes	Preventive Measures
Non-stabilized approaches	<ol style="list-style-type: none"> 1. Stabilized approach procedure and criteria 2. Policy to go around if destabilized in case of long landing

⁴ The DGCA Circular number SE.003 tahun 2018 can be seen on the following link https://dkppu.id/Regulation_.php?Regulation=VFZSQIBRPT0= .

Causes	Preventive Measures
	3. Instruction for landing in the touchdown zone 4. Flight Data Monitoring (if applicable to the operator) of approach stabilization and landing distance to touchdown
Poor awareness of effective landing distance	5. Calculation by crew of landing distance on short, or contaminated runway 6. Knowledge of ICAO runway distance marks

1.9 Additional Information

The investigation is continuing and should any further relevant safety issues emerge during the course of the investigation, KNKT will immediately bring the issues to the attention of the relevant parties and publish as required.

1.10 Useful or Effective Investigation Techniques

The investigation was conducted in accordance with the KNKT approved policies and procedures, and in accordance with the standards and recommended practices of Annex 13 to the Chicago Convention.

2 FINDINGS⁵

According to factual information during the investigation, the KNKT identified findings as follows:

1. The pilot held valid license and medical certificate.
2. The aircraft had valid Certificate of Airworthiness (C of A) and Certificate of Registration (C of R). Prior to departure, there was no report or record of aircraft system malfunction.
3. The aircraft was not equipped with flight recorder and it was not required by current Indonesia regulation for this type of aircraft.
4. The aircraft equipped with Global Positioning System (GPS) manufactured by Garmin with type/model G1000 which has capability of flight data logging which was capable to record 51 parameters. During the occurrence, the SD data card for the flight data logging was not inserted to the Garmin G1000 and the investigation unable to retrieve the data.
5. The occurrence flight was the first flight for the pilot and the aircraft.
6. Prior departure, the Alfa Aviation ground staff at Sentani received information from the charterer agent at Kasonaweja that the weather was good who then forwarded the weather information to the pilot.
7. During flight while approaching Kasonaweja the pilot noticed several clouds on east and north.
8. The pilot made orbit on right downwind to check the runway condition and the final path of the runway. The pilot noticed slight rain on the base leg and the runway was wet and continued the landing approach.
9. On final, the pilot aimed to touch down on touchdown zone which indicated by several touchdown marks on the beginning runway 17. The aircraft touched down about 140 meters from the beginning runway and then the pilot applied reverse and brake.
10. The aircraft continued rolling and the pilot anticipated that the aircraft would not be able to stop on the runway.
11. About the end of runway, the pilot applied left rudder and left brake to prevent the aircraft entering the down slope about 14 meters from the end of runway 17. The aircraft skidded to the left and stopped outside the runway about 14 meters from the end of runway 17.
12. The right main wheel was on downslope of the downhill and tilted the aircraft to the right. The propeller bent backward and the right wing was damaged.
13. After the aircraft stopped the pilot shutdown the engine and conducted passenger evacuation using left forward door.

⁵ Findings are statements of all significant conditions, events or circumstances in the accident sequence. The findings are significant steps in the accident sequence, but they are not always causal, or indicate deficiencies. Some findings point out the conditions that pre-existed the accident sequence, but they are usually essential to the understanding of the occurrence, usually in chronological order.

14. The meteorological information at Kasonaweja provided by charterer agent using visual observation and no air traffic services were provided at the Kasonaweja.
15. The aerodrome reference point coordinate mentioned in the AIP Volume IV was different with the coordinate mentioned in the Alfa Aviation airstrip information.

3 SAFETY ACTION

The Komite Nasional Keselamatan Transportasi (KNKT) informed safety actions taken by the Alfa Aviation resulting from this occurrence.

On 17 December 2018, issued safety circular which reminded all pilots to

- identify windshear possibility;
- take precaution of the wet runway;
- review the DGCA Circular number SE.003 of 2018 concerning the prevention measures of runway excursion;
- conduct Return to Base (RTB) if necessary.

4 SAFETY RECOMMENDATIONS

The KNKT acknowledged the safety actions taken by the Alfa Aviation, however, there still remain safety issues that need to be considered. Therefore, the KNKT issues the following safety recommendations addressed to the Alfa Aviation.

- **04.O-2019-43.1**

The PK-ASE aircraft was equipped with Global Positioning System (GPS) manufactured by Garmin with type/model G1000 which has capability of flight data logging that can be used as Flight Data Analysis for the safety management system and support the investigation process to enhance safety. During the occurrence, the GPS was not inserted with a Secure Digital (SD) data card to record the flight data.

The KNKT recommends the Alfa Aviation to ensure SD data card for data logging is inserted in all aircraft that installed with Garmin G1000 for the purpose of enhancing safety.

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