



**KOMITE NASIONAL KESELAMATAN TRANSPORTASI  
REPUBLIC OF INDONESIA**

# **PRELIMINARY**

**KNKT 23.10.15.04**

**Aircraft Serious Incident Investigation Report**

**PT Smart Cakrawala Aviation**

**Cessna 208B EX; PK-SNI**

**Bilorai Airport, Papua**

**Republic of Indonesia**

**21 July 2023**

**2023**

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 investigation carried out by the KNKT in accordance with Annex 13 to the Convention on International Civil Aviation, 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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However, the KNKT fully recognizes that the implementation of recommendations arising from its investigations will in some cases incur a cost to the industry.

Readers should note that the information in KNKT reports, and recommendations is provided to promote aviation safety. In no case is it intended to imply blame or liability.

Jakarta, 7 September 2023  
**KOMITE NASIONAL  
KESELAMATAN TRANSPORTASI  
CHAIRMAN**



**SOERJANTO TJAHOJONO**

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## ABBREVIATIONS AND DEFINITIONS

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AOC	:	Air Operator Certificate
CASR	:	Civil Aviation Safety Regulation
C of A	:	Certificate of Airworthiness
C of R	:	Certificate of Registration
CPL	:	Commercial Pilot License
DGCA	:	Directorate General of Civil Aviation
FAA	:	Federal Aviation Administration
GPS	:	Global Positioning System
KNKT	:	<i>Komite Nasional Keselamatan Transportasi</i> (is the Indonesia Independent Investigation Authority also known as National Transportation Safety Committee/NTSC)
LT	:	Local Time
Lbs	:	Pound-Mass or Pound. lbs has been derived from a Roman word <i>Libra</i> , it is represented by 'lb' or 'lbs'. Pound is a Latin word meaning 'a pound by weight'. One pound is equal to 0.45359237 kilograms.
MFD	:	Multi-Function Display
OM-C	:	Operation Manual C
PF	:	Pilot Flying
PFD	:	Primary Flight Display
PIC	:	Pilot in Command
PM	:	Pilot Monitoring
SIC	:	Second in Command
SD	:	Secure Digital
TIBA	:	Traffic Information Broadcast by Aircraft
UTC	:	Universal Time Coordinate
VFR	:	Visual Flight Rules

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## SYNOPSIS

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On 21 July 2023 a Cessna C208B EX aircraft, registration PK-SNI was being operated by PT. Smart Cakrawala Aviation (Smart Aviation) for an unscheduled passenger cargo flight.

The occurrence flight was the third flight of the day for the pilots, which was from Douw Aturure Airport of Nabire, (WABI), Papua, to Bilorai Airport of Sugapa, (WAYB), Papua.

The aircraft departed from Nabire at 0045 UTC (0945 LT) and cruised at altitude of 9,500 feet. On board this flight were 2 pilots and 5 passengers and 1,003 kg of cargo. The Pilot in Command (PIC) acted as Pilot Flying (PF), and the Second in Command (SIC) acted as Pilot Monitoring (PM).

About 0127 UTC (1027 LT), the aircraft touched down on the threshold area of Runway 09 with a ground speed of 93 knots, and indicated airspeed about 85 knots. The PIC operated the reverser, and shortly after, the PIC felt the aircraft slightly tilted to the left and assumed that the left main landing gear tire burst. The PIC attempted to maintain the aircraft rolling at centerline by applying the right rudder pedal up to maximum, the control column deflected slightly to the right, and applying the propeller lever in beta to low idle several times. The aircraft was still going to the left side of the runway and continued exiting the left side of the runway. After passing on the wet and slippery grass the aircraft stopped with the left main landing gear dropped into a ditch.

The PIC shut down the aircraft engine, then performed the evacuation procedure for passengers and the crew. No one was injured in this occurrence.

At the time of issuing this investigation report, the KNKT had not been informed of any safety actions resulting from this occurrence. KNKT has not issued safety recommendations in this preliminary report.

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

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# 1 FACTUAL INFORMATION

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## 1.1 History of the Flight

On 21 July 2023 a Cessna C208B EX aircraft, registration PK-SNI was being operated by PT. Smart Cakrawala Aviation (Smart Aviation) for an unscheduled passenger cargo flight.

The occurrence flight was the third flight of the day for the pilots, which was from Douw Aturure Airport of Nabire, (WABI)<sup>1</sup>, Papua to Bilorai Airport of Sugapa, (WAYB)<sup>2</sup>, Papua.

The aircraft departed from Nabire at 0045 UTC (0945 LT) and cruised at altitude of 9,500 feet. On board this flight were 2 pilots, 5 passengers and 1,003 kg of cargo. The Pilot in Command (PIC) acted as Pilot Flying (PF), and the Second in Command (SIC) acted as Pilot Monitoring (PM).

The flight from departure until descent was uneventful. During the approach to waypoint Bilai<sup>3</sup>, about 10 nautical miles from Bilorai Airport, the pilot contacted the Air Force personnel (airport personnel) at the airport to obtain weather information. The airport personnel informed the pilots that the weather was clear and the wind was calm. After received the weather information, the PIC conducted approach briefing related to the plan for arrival and landing. The SIC then read the approach and final checklist.

At the final approach of about 7,400 feet (160 feet above runway elevation), as indicated by the flight data log, the ground speed was about 98 knots, while the airspeed indicated about 89 knots. The headwind was about 4 knots, and the crosswind component was from the right about 3 knots.

There was no traffic on the ground, and the runway was clear, as reported by airport personnel at the airport.

About 0127 UTC (1027 LT), the aircraft touched down on the threshold area of Runway 09 with an indicated airspeed of about 85 knots. The PIC operated the reverser, and shortly after, the PIC felt the aircraft slightly tilted to the left and assumed that the left main landing gear tire burst. The PIC attempted to maintain the aircraft rolling at runway centerline by applying the right rudder pedal up to maximum, deflecting the control column slightly to the right, and applying the propeller lever in beta to low idle several times. The aircraft was still going to the left side of the runway and continued exiting the left side of the runway. After passing on the wet and slippery grass, the aircraft stopped with the left main landing gear dropped into a ditch.

The PIC shut down the aircraft engine<sup>4</sup>, and then performed the evacuation procedure for passengers and the crew. No one was injured in this occurrence. The aircraft was substantial damage, and there was no other damage to property and or the environment.

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<sup>1</sup> Do Douw Aturure Airport of Nabire (WABI), Papua, will be named Nabire for the purpose of this report.

<sup>2</sup> Bilorai Airport of Sugapa (WAYB), Papua, will be named Sugapa for the purpose of this report.

<sup>3</sup> According to the pilot statement, waypoint Bilai is beside Pogapa airstrip.

<sup>4</sup> Normal procedure for shutting down the engine in accordance with the Pilot's Operating Handbook because the engine was in normal condition and there was no propeller contact with the ground. The PIC added closed both fuel shut-off valves.

## 1.2 Damage to Aircraft

The aircraft was substantially damaged. The fork draglink spring bearing comes out, bolt fork draglink spring shear cut off, left main tire burst and the fairing damage and cargo pod C, D damage. The damages are shown in the figure below.



**Figure 1: Bolt AN6-52A shear cutoff and fork draglink spring bearing come out**



**Figure 2: Left main landing gear tire burst and fairing damage**





**Figure 3: Cargo pod C and D damage**

### **1.3 Personnel Information**

#### **1.3.1 Pilot in Command**

The PIC was Indonesian nationality who held valid Commercial Pilot License (CPL) and qualified as Single Engine Land pilot. The pilot also held valid Category First Class medical certificate without any medical limitation. The last proficiency check for the pilot was conducted on 27 March 2023.

The pilot had total flying hour of 4,558 hours, included 4,408 hours on Cessna 208B EX aircraft.

#### **1.3.2 Second in Command**

The SIC was Indonesian nationality who held valid Commercial Pilot License (CPL) and qualified as Single Engine Land pilot. The pilot also held valid Category First Class medical certificate without any medical limitation. The last proficiency check for the pilot was conducted on 16 December 2022. The pilot had total flying hour of 3,162 hours, included 2,969 hours on Cessna 208B EX aircraft.

### **1.4 Aircraft Information**

The Cessna 208B Grand Caravan EX, with serial number of 208B-5068, was manufactured by Cessna Textron, United States of America, in 2013. The aircraft registered PK-SNI and had valid Certificate of Airworthiness (C of A) and Certificate of Registration (C of R).

The aircraft had total hour since new of 4,363 hours and the total cycles since new of 14,070 cycles. The engine installed on the aircraft was PT6A-140, manufactured by Pratt & Whitney with serial number of VA-0802. The total time of the engine since new was 343.46 hours.

The propeller installed on the aircraft was 4HFR34C778, manufactured by McCauley with serial number 200707. The total time since new 1,450.11 hours.

The main landing gear tire installed on the aircraft was a Condor aircraft tire manufactured by Michelin Company with part number 078-446-1. On July 4, 2023, the left main wheel landing gear assembly was replaced due to spot baldness. Remove and install in accordance with the aircraft maintenance manual, chapter 32-40-00.

Prior to the occurrence flight, there was no record of aircraft system malfunction.

According to the weight and balance sheet, the takeoff weight was 8,944.9 lbs of the maximum of 9,062 lbs. The landing weight was estimated at 8,672.9 lbs of the maximum of 9,000 lbs. The aircraft was operated within the weight and balance envelope.

## **1.5 Meteorological Information**

The meteorological station was not available in Bilorai Airport. The weather information was provided by airport personnel at the airport and informed to the pilots using radio communication.

According to the airport personnel, the weather was clear and the wind calm. During approach and landing, the pilots observed that the weather around Bilorai Airport was clear and the wind was calm.

## **1.6 Aids to Navigation**

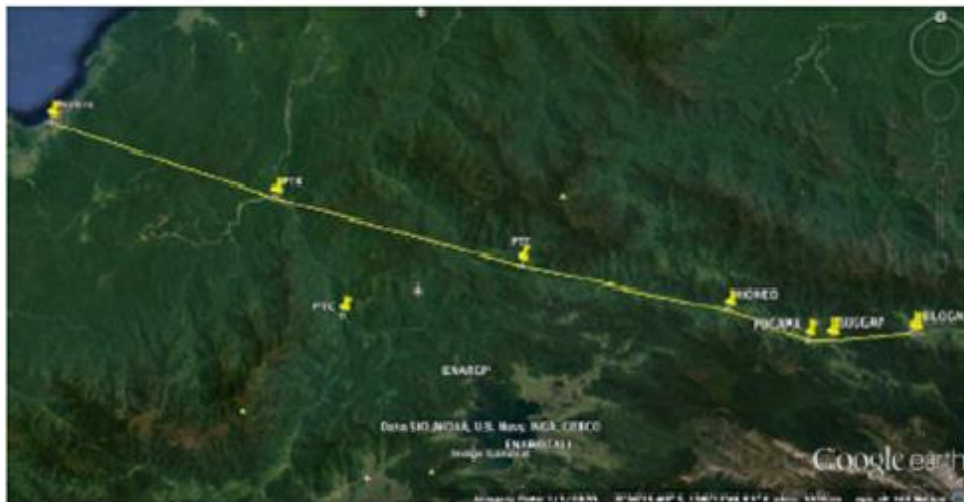
There was no navigation aid available at Bilorai Airport. Smart Aviation developed VFR routes in the Operation Manual Part C (OM-C), which included routes and detailed guidance of Bilogai<sup>5</sup> that were used internally. The route guidance for Nabire-Bilogai is shown in the figure below.

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<sup>5</sup> Bilogai is the name of village in the Sugapa district, where Bilorai Airport is located.

## 2.2 FROM NABIRE

### 2.2.1 NABIRE – BILOGAI (VFR)



Description	Remark
<p><b>Approach Procedure R/W 09</b> (Refer to figure UGU.1 and UG U.3)</p>	<ol style="list-style-type: none"> <li>1. Begin approach at "HOME0": <ul style="list-style-type: none"> <li>• Descend to 9,000 ft overhead "POGAPA" to avoid outbound traffic from Bilogai</li> <li>• After overhead "POGAPA", continue descent to 8,500ft</li> </ul> </li> <li>2. If clear, continue down to "SUGGAP" to 8,500 ft: <ul style="list-style-type: none"> <li>• Propeller – MAX (FULL FORWARD)</li> </ul> </li> <li>3. After passing "SUGGAP" about 5 nm out of Bilogai: <ul style="list-style-type: none"> <li>• Flaps – 20° (TO/APP)</li> <li>• All checks – completed</li> <li>• Continue descent down to 7,700ft</li> </ul> </li> <li>4. At 7,700 ft. and 2 nm out of Bilogai: <ul style="list-style-type: none"> <li>• Flaps – LAND</li> <li>• Speed – 95 kts</li> <li>• Aim a little off set to the right of final approach path for runway 09</li> </ul> </li> <li>5. Continue descent down to 7,350 ft: <ul style="list-style-type: none"> <li>• Target Key Point (KP) 1 nm final at 7,350 ft</li> <li>• Speed – Vref--3</li> <li>• COMMITTED ONCE ON TOUCHDOWN: if go around is required, do it on final</li> </ul> </li> </ol>
	<ol style="list-style-type: none"> <li>1. Begin approach at "HOME0": <ul style="list-style-type: none"> <li>• Descend to 9,000ft overhead "POGAPA" to avoid outbound traffic from Bilogai</li> <li>• After overhead "POGAPA", continue descent to 8,500 ft</li> </ul> </li> <li>2. If clear, continue down to "SUGGAP" to 8,500 ft: <ul style="list-style-type: none"> <li>• Propeller – MAX (FULL FORWARD)</li> </ul> </li> <li>3. After passing "SUGGAP": <ul style="list-style-type: none"> <li>• Continue descent down to 7,700ft</li> </ul> </li> </ol>

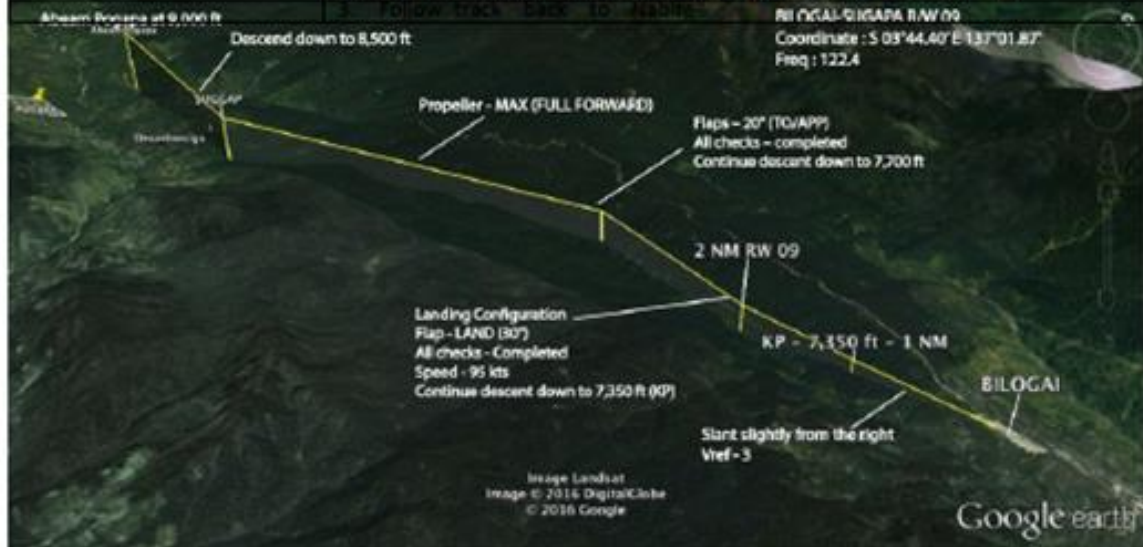
Figure 4: Smart Aviation route guidance for Nabire-Bilogai



# OPERATION MANUAL

## PART C AREA, ROUTES AND AERODROMES

	<ul style="list-style-type: none"> <li>Join left downwind</li> </ul> <ol style="list-style-type: none"> <li>On left downwind at 7,700ft:             <ul style="list-style-type: none"> <li>Flaps - 20° (TO/APP)</li> <li>All checks - Completed</li> </ul> </li> <li>On final:             <ul style="list-style-type: none"> <li>Speed - 90--95kts</li> <li>Flaps - LAND</li> <li>Target Key Point (KP) 1 nm final at 7,400 ft</li> <li>Watch for high tower on the right side</li> <li>Speed - V ref--3</li> <li>COMMITTED ONCE TOUCHDOWN: if go-- around is required, do it to the right toward Hitadipa Valley</li> </ul> </li> </ol>
Departure Procedure R/W 09	<ol style="list-style-type: none"> <li>Slightly slant to the right</li> <li>Left turning climb:             <ul style="list-style-type: none"> <li>Speed 92kts - Flaps --- UP</li> </ul> </li> <li>Follow track back to Nabire</li> </ol>
Departure Procedure R/W 27	<ol style="list-style-type: none"> <li>Immediate left turn after departure due to rising terrain ahead</li> <li>Be very careful with the the high terrain on the left</li> </ol>



**Figure 5: The route guidance of Nabire to Bilogai**

The OM-C also described the approach path to the runway 09 and 27 of the Bilogai Airport as follow:

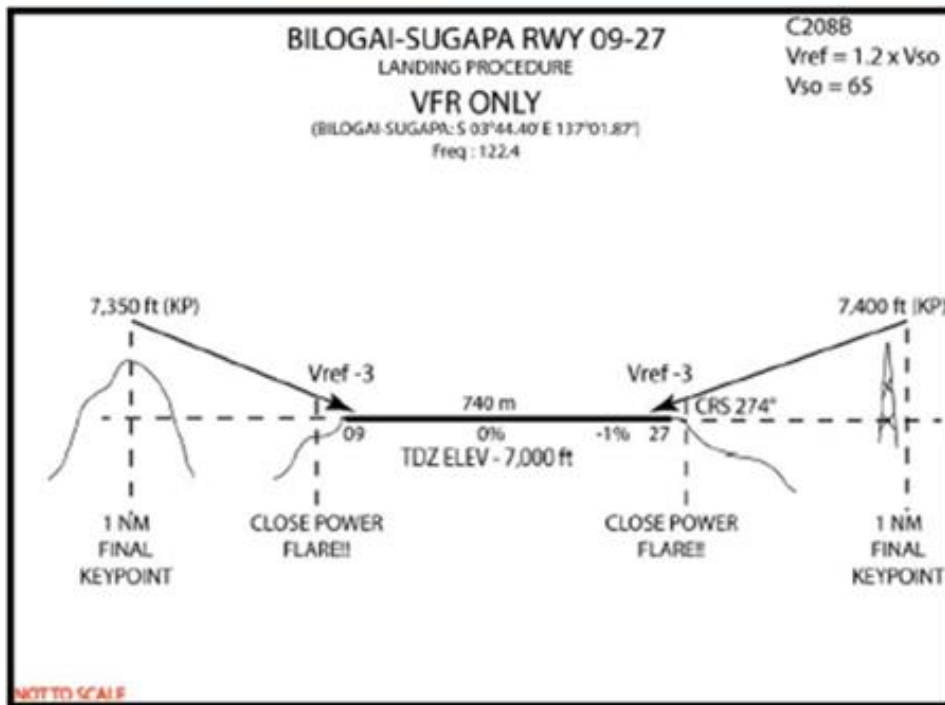
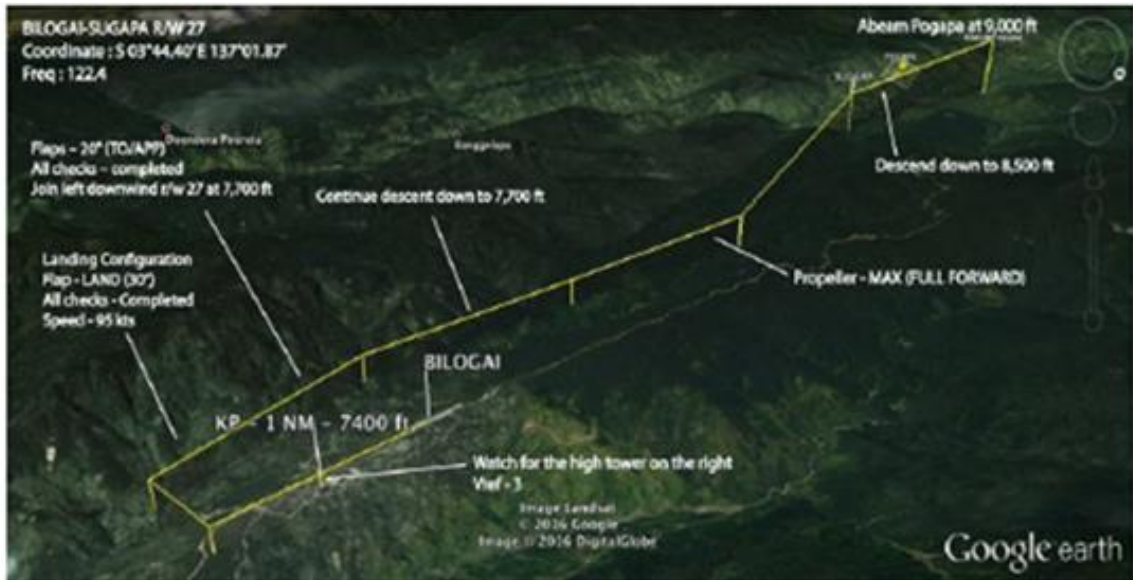


Figure 6: The approach path for Runway 09 and 27 of Bilorai Airport

## 1.7 Communications

Air traffic services was not available at Bilorai Airport. The flight information was provided by the Air Force personnel who provide the aerodrome information. All aircraft are advised to use Traffic Information Broadcast by Aircraft (TIBA).

## 1.8 Aerodrome Information

The Bilorai Airport (WAYB) was operated by the Directorate General of Civil Aviation. The runway surface was asphalt with dimension of 750 meters in length and 18 meters in width. The airport elevation was 7,316 feet, and the aerodrome reference point was on coordinate 03°44'23" S; 137°01'51" E.

## 1.9 Flight Recorders

The aircraft was not fitted with a flight data recorder or cockpit voice recorder. Neither recorder was required by current Indonesian aviation regulations.

The aircraft was fitted with a Garmin G1000 which consists of Primary Flight Display (PFD) and Multi-Function Display (MFD). The flight data logging feature of the Garmin G1000 system will automatically store the flight and engine data on the Secure Digital (SD) card that is inserted on the MFD. The flight data log was successfully downloaded, containing several flights, including the occurrence flight. The details of the flight data log will be included in the final report.

## 1.10 Wreckage and Impact Information

Due to security reason, the investigators did not go to the site and for data collection conducted by Air Force personnel and the crew via photograph and video.

Based on video and photograph, the aircraft touchdown point was about 35 meters from the beginning of Runway 09. The marks of the aircraft exiting the runway were found on the left side of the runway and then continued until the aircraft stopped about 440 meters from the beginning of Runway 09.

An illustration of the aircraft's runway excursion and stop position is shown in the figure below.



**Figure 7: Illustration of the aircraft's runway excursion**



**Figure 8: The aircraft tire marks outside the runway**



**Figure 9: The aircraft position at the rest condition**

## **1.11 Tests and Research**

Test and research information were not available at the time of the issuance of this preliminary report. Should any test or research information be obtained during this investigation that is relevance to this investigation will be included in the final report.

## **1.12 Organizational and Management Information**

### **1.12.1 Aircraft Operator**

The aircraft was operated by PT Smart Cakrawala Aviation and had a valid Air Operator Certificate (AOC) number of 135-062.

The operator was authorized by the Directorate General of Civil Aviation (DGCA) to conduct air transportation carrying passengers and cargo in scheduled and non-scheduled operation within and outside Indonesia for aircraft operations under Civil Aviation Safety Regulation (CASR) Part 135.

### **1.13 Additional Information**

The investigation is continuing and KNKT plans to complete the investigation within 12 months since the day of the occurrence. Should any further relevant safety issues emerge during the investigation, KNKT will immediately bring the issues to the attention of the relevant parties and publish as required.

### **1.14 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.



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## 2 FINDINGS

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The 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.

In this occurrence, the KNKT identified several findings as follows:

1. Both pilots held valid licenses and medical certificates.
2. The aircraft had a valid Certificate of Airworthiness (C of A) and a valid Certificate of Registration (C of R).
3. The occurrence flight was the third flight of the day for the pilots.
4. During the occurrence flight, the PIC acted as Pilot Flying (PF) and the SIC acted as Pilot Monitoring (PM).
5. During the occurrence flight, the aircraft was operated within the weight and balance envelope.
6. During approach and landing, the weather around Bilorai Airport was reported clear and the wind was calm.
7. The aircraft landed about 35 meters from the beginning of Runway 09 with an indicated airspeed of about 85 knots. The PIC applied the propeller reverse, and shortly after, the PIC felt the aircraft slightly tilted to the left and assumed that the left main tire burst.
8. The PIC attempted to maintain the aircraft rolling at centerline by applying the right rudder pedal at maximum, the control column slightly to the right, and applying the propeller reverse in beta to low idle several times. The aircraft was still going to the left side of the runway and continued exiting the left runway.
9. After passing on the wet and slippery grass the aircraft stopped with the left main tire dropped into a ditch.
10. The aircraft was substantial damaged. The fork draglink spring bearing comes out, the bolt fork draglink spring shear cut off, left main tire burst and the fairing damage and cargo pod C, D damage
11. The aircraft rest position was about 440 meters from the beginning of Runway 09.
12. No one was injured in this occurrence.

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### **3 SAFETY ACTION**

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At the time of issuing this Preliminary Report, the KNKT had not been informed of any safety actions resulting from this occurrence.

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## **4 SAFETY RECOMMENDATIONS**

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The safety recommendation in this investigation report is made with the intention of preventing accidents or incidents and which in no case has the purpose of creating a presumption of blame or liability for an accident or incident.

At the time of publishing the Preliminary Report, KNKT did not identify yet any safety issue. Therefore, KNKT did not issue recommendation.

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