



**KOMITE NASIONAL KESELAMATAN TRANSPORTASI  
REPUBLIC OF INDONESIA**

# **PRELIMINARY**

**KNKT.23.05.09.04**

**Aircraft Accident Investigation Report**

**Yayasan Pelayanan Penerbangan Tariku**

**PAC 750 XL; PK-TET**

**Duma Airstrip**

**Republic of Indonesia**

**31 May 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 is published. This report will not include analysis and conclusion.

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Jakarta, 12 September 2023  
**KOMITE NASIONAL  
KESELAMATAN TRANSPORTASI  
CHAIRMAN**



**SOERJANTO TIAHJONO**

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## ABBREVIATIONS AND DEFINITIONS

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ATC	:	Air Traffic Control
CASR	:	Civil Aviation Safety Regulation
C of A	:	Certificate of Airworthiness
C of R	:	Certificate of Registration
CPL	:	Commercial Pilot License
CVR	:	Cockpit Voice Recorder
DGCA	:	Directorate General of Civil Aviation
FDR	:	Flight Data Recorder
FOO	:	Flight Operation Officer
ft	:	feet
HF	:	High Frequency
km	:	kilometer
KNKT	:	<i>Komite Nasional Keselamatan Transportasi</i>
LT	:	Local Time
MHz	:	Megahertz
MSN	:	Manufacturer's Serial Number
NM	:	Nautical Mile
OC	:	Operating Certificate
OM	:	Operation Manual
TIBA	:	Traffic Information Broadcast by Aircraft
UTC	:	Universal Time Coordinated
VHF	:	Very High Frequency

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## SYNOPSIS

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On 31 May 2023, a PAC 750 XSTOL aircraft, registered PK-TET, was being operated by Yayasan Pelayanan Penerbangan Tariku on a non-scheduled cargo flight from Mozes Kilangin Airport (WAYY), Timika, to Duma Airstrip (WABE), Dumadama. The flight was the first flight of the day.

The aircraft was loaded with 870 kg of cargo. The cargo uploading process was done while the weather was still cloudy. At 0635 LT, when the weather improved, the pilot decided to depart. At 0644 LT, the aircraft took off from Timika and cruised at an altitude of 8500 ft. There was only one pilot onboard the aircraft. The flight was uneventful until the aircraft approached Dumadama.

About 7 NM from Dumadama, the pilot was able to see the airstrip visually and started to approach the airstrip. On final approach, the pilot decided to prolong the touchdown due to a muddy surface at the beginning of runway 08.

During landing, the left main landing gear hit a boar, and then the aircraft started to veer off to the left side of the runway. The lower part of the left wing contacted the ground, hit the woodpiles and building materials near the runway, and then stopped with the nose wheel resting in the drainage ditch of the airstrip. The pilot evacuated himself from the aircraft, then performed a walk-around check and found that the wings were damaged and the left main landing gear had collapsed and detached. The boar, which was hit by the left main landing gear, was found dead.

The investigation is continuing, 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.

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# 1 FACTUAL INFORMATION

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## 1.1 History of the Flight

On 31 May 2023, a PAC 750 XSTOL aircraft, registered PK-TET, was being operated by Yayasan Pelayanan Penerbangan Tariku on a non-scheduled cargo flight from Mozes Kilangin Airport (WAYY), Timika<sup>1</sup>, to Duma Airstrip (WABE), Dumadama<sup>2</sup>. The flight was the first flight of the day.

At 0555 LT (2055 UTC<sup>3</sup>), the ground crew loaded the cargo containing building materials with a total weight of 870 kg, and the loading process was completed at 0603 LT while the weather around Timika was still cloudy.

At 0635 LT, the pilot decided to depart as the weather conditions improved. At 0644 LT, the aircraft took off from Timika and cruised at an altitude of 8,500 ft. There was only one pilot onboard the aircraft. The flight was uneventful until the aircraft approached Dumadama.

About 7 NM from Dumadama, the pilot was able to see the airstrip visually and started to make the approach for landing. On final approach, the pilot decided to prolong the touchdown due to a muddy surface at the beginning of runway 08.

During landing, the pilot felt that the aircraft hit a bumpy surface. The pilot observed a boar was crossing from the left to the right side of the runway. The aircraft then started to veer off to the left side of the runway. The lower part of the left wing contacted the ground, hit the woodpiles and building materials near the runway, and then stopped with the nose wheel resting in the drainage ditch of the airstrip.

The pilot evacuated himself from the aircraft, then performed a walk-around check and found that the wings were damaged and the left main landing gear had collapsed and detached. The boar, which was hit by the left main landing gear, was found on the runway.



**Figure 1. The condition of the aircraft when it had stopped completely.**

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<sup>1</sup> Mozes Kilangin Airport (WAYY), Timika, will be named as Timika for the purpose of this report.

<sup>2</sup> Duma Airstrip (WABE), Dumadama, will be named as Dumadama for the purpose of this report.

<sup>3</sup> The 24-hour clock in Universal Time Coordinated (UTC) is used in this report to describe the local time as specific events occurred. Local time is UTC+9 hours.

## 1.2 Injuries to Persons

There were no injuries to persons as a result of this occurrence.

## 1.3 Damage to Aircraft

The aircraft was substantially damaged, as illustrated in Figures 2 to 6. The left main landing gear collapsed and detached. The nose landing gear was broken, wings and the left horizontal stabilizer were damaged.



**Figure 2. Aircraft condition from the front view**



**Figure 3. Damaged left wing (view looking inboard)**





**Figure 4. Damaged right wing (view looking forward)**



**Figure 5. Damaged leading edge of left horizontal stabilizers**



**Figure 6. Broken nose landing gear torque link**

#### **1.4 Other Damage**

There was no other damage to property and/or the environment.

## **1.5 Personnel Information**

### **1.5.1 Pilot in Command**

Gender : Male  
Age : 29 year  
Nationality : Indonesia  
Date of joining company : 1 February 2018  
License : CPL  
    Date of issue : 7 October 2017  
    Aircraft type rating : Single Engine Land  
Instrument rating validity : -  
Medical certificate : First Class  
    Last of medical : 23 February 2023  
    Validity : 2 September 2023  
    Medical limitation : Holder shall wear corrective lenses  
Last line check : 17 September 2018  
Last proficiency check : 21 October 2022

#### **Flying experience**

Total hours : 2,614 hours  
Total on type : 2,357 hours  
Last 90 days : 81 hours 12 minutes  
Last 30 days : 51 hours  
Last 7 days : 32 hours 54 minutes  
Last 24 hours : 4 hours 30 minutes  
This flight : 18 minutes

## **1.6 Aircraft Information**

### **1.6.1 General**

Registration Mark : PK-TET  
Manufacturer : Pacific Aerospace Limited  
Country of Manufacturer : New Zealand  
Type/Model : PAC 750 XSTOL  
Serial Number : XL-158  
    Year of Manufacture : 2009

#### **Certificate of Airworthiness**

Date of issue : 29 November 2022  
Validity : 28 November 2023  
Category : Normal  
Limitation : None

#### **Certificate of Registration**

Number : 4459  
Date of issue : 23 November 2022  
Validity : 22 November 2025  
Time Since New : 5,289 hours  
Cycles Since New : 8,579 cycles

#### **1.6.2 Engines**

Manufacturer : Pratt & Whitney Canada  
Type/Model : PT6A – 34  
Serial Number engine : PCE-RB0429  
Time Since New : 5,289 hours  
Cycle Since New : 1,358 cycles  
Last Inspection or Last Shop Visit Engine :  
Date : 24 February 2023  
Hour : 5,142 hours  
Cycle : 1,089 cycles

#### **1.6.3 Weight and Balance**

According to the weight and balance sheet of the occurrence flight, the calculation of the takeoff weight was 2,951 kg and the landing weight was estimated at 2,897 kg. the aircraft was operated within the weight and balance envelope.

#### **1.7 Meteorological Information**

The PIC received the weather information from the flight operation officer (FOO) which consisted of the weather information of the departure point, Timika. Since there was no weather data available for Dumadama, the PIC determined the weather condition by observing the visibility of his checkpoint, which is a valley on the route to Dumadama. The illustration of the location and the view of the valley shown in Figure 7 and Figure 8. On the day of the occurrence, low ground fog was observed at the area of the checkpoint.



**Figure 7. Location and view of the valley (not representing the actual weather condition at the time of occurrence)**



**Figure 8. View of the valley from Timika (not representing the actual weather condition at the day of the occurrence)**

## 1.8 Aids to Navigation

Ground-based navigation aids/onboard navigation aids/aerodrome visual ground aids and their serviceability were not a factor in this occurrence.

## 1.9 Communications

The aircraft was equipped with high frequency (HF) and very high frequency (VHF) radio communication systems. The pilot used the VHF radios for routine communication with air traffic control (ATC) and when broadcasting message in the Traffic Information Broadcast by Aircraft (TIBA) frequency with other pilots of other aircraft at the frequency of 122.4 MHz. At the day of occurrence, the VHF radios were serviceable. There is no radio station available at Dumadama.

## 1.10 Aerodrome Information

The Duma airstrip was managed by local villagers, which there was no official operator for the airstrip. The airstrip management was supervised and monitored by Tariku Aviation.

Based on the airfield chart developed by Tariku Aviation, the airstrip information are as follows:

Coordinate	: 04°04'19" S 136°42'49" E
Elevation	: 4,530 ft (above mean sea level)
Runway direction	: 08/26
Runway length	: 355 meters
Runway width	: 24 meters
Surface	: hard clay and rock
Slope	: 10%

Tariku Aviation Policy requires using runway 08 for landing and runway 26 for takeoff. There were hazards or notes mentioned on the airfield chart that state a visual illusion that will cause favoring of the left side when rolling out due to more crowning on the right side, no level turns around, and the area may be soft.

There was no radio available on the airstrip. The airfield chart also mentioned cautions that the runway surface was slippery when wet, there was no fence, which will make it possible for incursion, and there was a side slope parking area.

At the time of the occurrence, the pilot observed that the fences around the airstrip were available but not in good condition. There were several gaps between the fences that allowed animals to enter the runway area. The grass condition of the airstrip had been overgrown.

## 1.11 Flight Recorders

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

## 1.12 Wreckage and Impact Information

The wreckage of the detached left main landing gear (illustrated in Figure 9) was found about 165 m from the suspected touchdown position, or about 60 m from the position of the aircraft after it stopped. The boar, which was hit by the left main landing gear, was found dead at a distance of about 40 m from the suspected touchdown position.



**Figure 9. The detached left main landing gear**

### **1.13 Medical and Pathological Information**

No medical or pathological investigations were conducted as a result of this occurrence, nor were they required.

### **1.14 Fire**

There was no evidence of in-flight or post-impact fire.

### **1.15 Survival Aspects**

After the aircraft stopped, the pilot evacuated himself safely from the aircraft.

### **1.16 Tests and Research**

Should any tests or research be carried out due to the occurrence, the results will be included in the final report.

### **1.17 Organizational and Management Information**

The aircraft was operated by Yayasan Pelayanan Penerbangan Tariku which held valid operator certificate with Operating Certificate (OC) number of 91-007. Yayasan Pelayanan Penerbangan Tariku has 2 fleets of the PAC 750XL.

Operation manual (OM) issued by The Tariku Aviation mentions the landing procedures on the airstrip as follows:

#### ***10.12.2. Airstrip Considerations***

*Consider and examine the following airstrip conditions before each landing. Pay particular attention when strip conditions are unknown or haven't been reported recently.*

- a. Grass height. If grass is tall enough to hide small animals or other dangers the strip should be temporarily closed until the grass is COMPLETELY cut.*
- b. Surface condition. Check for standing water, mud holes, soft ground, runway color, pig damage to the strip, if runway is reported recently wet after rain, do not conduct flights until reliable dry runway condition information is available.*
- c. Make a low pass to evaluate the actual condition if at all in doubt.*

## **1.18 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 course of the investigation, KNKT will immediately bring the issues to the attention of the relevant parties and publish as required.

## **1.19 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<sup>4</sup>

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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.

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

1. The aircraft had a valid Certificate of Airworthiness (C of A) and Certificate of Registration (C of R).
2. The pilot held valid licenses and medical certificates.
3. Prior to the event, there was no record or report of aircraft system malfunction.
4. During the occurrence flight, the aircraft was operated within the weight and balance envelope.
5. The aircraft was not fitted with a flight data recorder (FDR) or cockpit voice recorder (CVR).
6. During landing, the left main landing gear of the aircraft hit a boar.
7. The Duma airstrip was managed by local villagers and supervised by Tariku Aviation.
8. The fences around the airstrip are available but not in good condition. There are several gaps between the fences that allow animals to enter the runway area.

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<sup>4</sup> 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.



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### **3 SAFETY ACTION**

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At the time of issuing this draft Final 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.

### **4.1 Yayasan Pelayanan Penerbangan Tariku**

- **04.O-2023-9.01**

The pilot was unaware of the movement of the animals when landing on the runway until the aircraft hit the boar. The presence of animals, or other foreign objects on the runway, is a hazard for taking off and landing the aircraft.

Therefore, KNKT recommends the operator, Yayasan Pelayanan Penerbangan Tariku, to ensure wildlife hazards are well controlled by the local villagers at the airstrip.