



**KOMITE NASIONAL KESELAMATAN TRANSPORTASI
REPUBLIC OF INDONESIA**

PRELIMINARY

KNKT.22.02.01.04

Aircraft Serious Incident Investigation Report

PT. Smart Cakrawala Aviation

Pilatus PC6/B2H4; PK-SNB

Bayabiru Airstrip, Paniai, Papua

Republic of Indonesia

26 February 2022

2022

This Preliminary Report was 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.

Readers are advised that the KNKT investigates for the sole purpose of enhancing aviation safety. Consequently, the KNKT reports are confined to matters of safety significance and may be misleading if used for any other purpose.

As the KNKT believes that safety information is of greatest value if it is passed on for the use of others, readers are encouraged to copy or reprint for further distribution, acknowledging the KNKT as the source.

When the KNKT makes recommendations as a result of its investigations or research, safety is its primary consideration.

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, 28 March 2022

**KOMITE NASIONAL
KESELAMATAN TRANSPORTASI
CHAIRMAN**



SOERJANTO TJAHHJONO

TABLE OF CONTENTS

TABLE OF CONTENTS	i
TABLE OF FIGURES	ii
ABBREVIATIONS AND DEFINITIONS	iii
SYNOPSIS	iv
1 FACTUAL INFORMATION	1
1.1 History of the Flight.....	1
1.2 Injuries to Persons.....	2
1.3 Damage to Aircraft	2
1.4 Other Damage	2
1.5 Personnel Information	3
1.6 Aircraft Information.....	4
1.7 Meteorological Information.....	4
1.8 Aids to Navigation.....	4
1.9 Communications	5
1.10 Aerodrome Information	6
1.11 Flight Recorders.....	7
1.11.1 APIBOX	7
1.11.2 Global Positioning System	8
1.12 Wreckage and Impact Information	8
1.13 Medical and Pathological Information	9
1.14 Fire.....	10
1.15 Survival Aspects	10
1.16 Tests and Research	10
1.17 Organizational and Management Information.....	10
1.17.1 Aerodrome Risk Classification	10
1.17.2 Flight Operation to Bayabiru.....	11
1.18 Additional Information	12
1.19 Useful or Effective Investigation Techniques	12
2 FINDINGS	13
3 SAFETY ACTION	15
4 SAFETY RECOMMENDATIONS	16
4.1 Smart Aviation.....	16

TABLE OF FIGURES

Figure 1: Runway condition of Bayabiru	1
Figure 2: Area, routes, and aerodromes information of Bayabiru.....	5
Figure 3: The airstrip condition (taken in 2020).....	6
Figure 4: The windsock location (yellow dot) and the airstrip.....	7
Figure 5: The windsock location (inside red-dotted square)	7
Figure 6: The aircraft condition taken after the aircraft stopped	8
Figure 7: The damaged of the propeller blades (left figure) and wrinkled of engine power section (right figure)	9
Figure 8: The bent of left-wing tip (red arrows) and the broken navigation light (black arrow)	9

ABBREVIATIONS AND DEFINITIONS

AIP	:	Aeronautical Information Publication
AOC	:	Air Operator Certificate
C of A	:	Certificate of Airworthiness
C of R	:	Certificate of Registration
CASR	:	Civil Aviation Safety Regulation
CPL	:	Commercial Pilot License
DGCA	:	Directorate General of Civil Aviation
FOO	:	Flight Operation Officer
GPS	:	Global Positioning System
ICAO	:	International Civil Aviation Organization
KNKT	:	<i>Komite Nasional Keselamatan Transportasi</i> /National Transportation Safety Committee
LT	:	Local Time
OM	:	Operation Manual
OM-C	:	Operation Manual Part C
SD	:	Secure Digital
SOP	:	Standard Operating Procedure
STSB	:	Swiss Transportation Safety Investigation Board
UTC	:	Universal Time Coordinated
VFR	:	Visual Flight Rules
VHF	:	Very High Frequency
VMC	:	Visual Meteorological Condition

SYNOPSIS

On 26 February 2022, a Pilatus PC-6/B2-H4 aircraft, registration PK-SNB was being operated by PT Smart Cakrawala Aviation (Smart Aviation) to conduct unscheduled passenger flight. The flight plan route of the day was from Douw Aturure Airport (WABI), Nabire, Papua to Bayabiru Airstrip, Paniai, Papua and return for two times. All flights would be conducted following Visual Flight Rules (VFR) on a single-pilot operation.

The first flight to Bayabiru was uneventful, and the pilot noticed that the soil of the runway surface was soft and some of area was muddy.

At 0029 UTC (0929 LT), on a daylight condition, the aircraft departed from Nabire to Bayabiru for the second flight with five passengers on board.

The aircraft cruised at altitude of 7,500 feet and the flight was uneventful until commencing landing approach to Runway 10 at Bayabiru. On final the pilot observed the weather was on visual meteorological condition (VMC) and based on the Global Positioning System (GPS) flight data record indicated that the wind was calm.

At 0959 LT, the aircraft touched down Runway 10 at Bayabiru and veered to the left. The pilot attempted to recover the aircraft to the center of the runway. The aircraft then skidded, and the left-wing tip impacted to bushes on the higher ground on the left runway strip. Thereafter, the aircraft swung to the left then the right wing, followed by the aircraft nose, impacted to the higher ground on the left of the runway strip.

After the aircraft stopped, the pilot and the passenger evacuated from the aircraft by themselves. No one injured in this occurrence and the aircraft was substantially damaged.

Following this occurrence, KNKT issued safety recommendation to the aircraft operator to address safety issues identified in this report.

The investigation involved the participation of the Swiss Transportation Safety Investigation Board (STSB) as the State of Design and the State of Manufacture. The agency has appointed accredited representatives to assist the investigation in accordance with the provisions in ICAO Annex 13.

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.

1 FACTUAL INFORMATION

1.1 History of the Flight

On 26 February 2022, a Pilatus PC-6/B2-H4 aircraft, registration PK-SNB was being operated by PT Smart Cakrawala Aviation (Smart Aviation) to conduct unscheduled passenger flight. The flight plan route of the day was from Douw Aturure Airport (WABI), Nabire, Papua¹ to Bayabiru Airstrip, Paniai, Papua² and return for two times. All flights would be conducted following Visual Flight Rules (VFR) on a single-pilot operation.

Prior to the flight commenced, the aircraft engineer of Smart Aviation and the pilot conducted preflight inspection of the aircraft included brake checking and tailwheel locking lever. The inspection did not find abnormality in the aircraft system and there was no problem recorded in the maintenance log.

During the preparation of the first flight, the pilot received information of weather and runway condition of Bayabiru, from the aircraft operator Flight Operation Officer (FOO). The reported condition was based on visual observation by local resident of Bayabiru which also providing photo of runway condition. The following photo was the picture of Bayabiru runway condition that was received by pilot.



Figure 1: Runway condition of Bayabiru

The weather was reported clear, and the photo of the runway condition depicted some of runway surface was wet as there was rain at the night before. The pilot considered that was the typical condition of the runway at Bayabiru and decided to conduct the flight.

¹ Douw Aturure Airport (WABI), Nabire, Papua will be named as Nabire for the purpose of this report.

² Bayabiru Airstrip, Paniai, Papua will be named as Bayabiru for the purpose of this report.

The first flight to from Nabire to Bayabiru departed at 2243 UTC (0743 LT³) on a daylight condition and cruised at altitude of 7,500 feet.

About 0814 LT, the aircraft landed on Runway 10 and made 180° turn to the beginning runway to disembark passenger and unload the cargo. At that time, the pilot noticed that the soil of the runway surface was soft and some of area was muddy. After the disembarkation and unloading process had been completed, the pilot returned to Nabire and departed Bayabiru about 0830 LT. The aircraft cruised at altitude of 6,500 feet.

At 0858 LT, the aircraft landed at Nabire and continued taxi to apron.

The pilot continued the flight operation to Bayabiru. Considering the first landing at Bayabiru was uneventful and there was no rain over the airstrip which could make the runway more slippery.

At 0929 LT, the aircraft departed from Nabire to Bayabiru for the second flight with five passengers on board.

The aircraft cruised at altitude of 7,500 feet and the flight was uneventful until commencing landing approach to Runway 10 at Bayabiru. On final the pilot observed the weather was on visual meteorological condition (VMC) and based on the Global Positioning System (GPS) flight data record indicated that the wind was calm.

At 0959 LT, the aircraft touched down Runway 10 at Bayabiru and veered to the left. The pilot attempted to recover the aircraft to the center of the runway. The aircraft then skidded, and the left-wing tip impacted to bushes on the higher ground on the left runway strip. Thereafter, the aircraft swung to the left then the right wing, followed by the aircraft nose, impacted to the higher ground on the left of the runway strip.

After the aircraft stopped, the pilot and the passenger evacuated from the aircraft by themselves.

1.2 Injuries to Persons

No one injured in this occurrence.

1.3 Damage to Aircraft

The aircraft was substantially damaged.

1.4 Other Damage

No other damage to property and/or the environment.

³ The 24-hours clock in Local Time (LT) is used in this report to describe the local time as specific events occurred. Local time is Universal Time Coordinated (UTC) +9 hours. The date for the UTC at this time was on 25 February 2022 while the local time was 26 February 2022.

1.5 Personnel Information

The pilot was 47 years old, French nationality, held valid Commercial Pilot License (CPL) and qualified as a single engine land aircraft pilot. The pilot had valid first-class medical certificate with medical limitation to wear corrective lenses for near and distant vision. The pilot used his corrective lenses during the occurrence flight.

The pilot had total flying hour of 5,127.4 hours, included 850 hours on Pilatus PC-6/B2-H4 aircraft. The total flying hour on Papua area was about 1,500 hours using three different aircraft types including Pilatus PC-6/B2-H4 aircraft. The total flying hour in the last 90 days was 12.6 hours, and the last 24 hours was flying for 3.5 hours.

The last proficiency check for the pilot was conducted on 9 August 2021 using Cessna 208 aircraft, the result was satisfactory without any remarks. On 11 November 2021, the pilot performed qualification check for flight instructor with inspector from Directorate General of Civil Aviation (DGCA). The PIC passed the check and qualified as flight instructor for Pilatus PC-6/B2-H4 aircraft.

Based on the pilot record, the pilot had flown nine times from Nabire to Bayabiru including the occurrence flight. All the flights were conducted in February 2022 and using the same aircraft with the occurrence flight. Those flights were the only experience of the pilot to fly to Bayabiru.

Prior to fly to Bayabiru, the pilot conducted a route qualification check with another captain pilot who had experience to fly from Nabire to Bayabiru. The route qualification check was performed on 21 February 2022 and the result was passed.

The details of the flight experiences of the PIC (on the route of Nabire to Bayabiru) were as follows:

Flight No.	Date (2022)	Remarks
1	21 Feb	Acted as observer on right pilot seat.
2	21 Feb	Acted as PF and accompanied with qualified pilot who seated on right pilot seat.
3	21 Feb	- Route qualification check. - Acted as PF and accompanied with qualified pilot who seated on right pilot seat.
4	23 Feb	Acted as PF and accompanied with qualified pilot who seated on right pilot seat.
5	23 Feb	Acted as PF and accompanied with qualified pilot who seated on right pilot seat.
6	25 Feb	- Acted as PF. - First time to fly alone to Bayabiru.
7	25 Feb	Acted as PF.
8	26 Feb	Acted as PF.
9	26 Feb	Acted as PF on the occurrence flight.

1.6 Aircraft Information

The Pilatus PC-6/B2-H4 aircraft with serial number of 1015, registered PK-SNB was manufactured by Pilatus Aircraft Limited, Switzerland in 2021. The aircraft was configured as single pilot operation.

The aircraft had valid Certificate of Airworthiness (C of A) and valid Certificate of Registration (C of R).

The aircraft had total hour since new was 476 hours 14 minutes and the total cycles since new was 579 cycles. The engine installed on the aircraft was PT6A-27 model, manufactured by Pratt & Whitney Canada with serial number of PCE-RB0706. The total time of the engine since new was 476 hours 14 minutes.

There was no record of aircraft serviceability in the past 3 months prior to the occurrence. During the occurrence flight, the aircraft was operated within the weight and balance envelope.

1.7 Meteorological Information

Aviation meteorological provider was not available at Bayabiru. The Smart Aviation relied on the visual observation report from the local resident. The local resident who provided the weather observation did not have knowledge of meteorological nor flight operation.

The observation was conducted from the Bayabiru resident house which located about 120 meters from the beginning runway 10. About 0725 LT, the weather was reported clear and no rain over the airstrip. During the landing approach, the pilot recalled the weather was consistent with the information reported by the local resident and the wind was calm.

1.8 Aids to Navigation

The aircraft was fitted with GPS Garmin G950 which has capability to provide navigation data. The G950 allows the pilot to create, edit and store up to 99 flight plans with up to 99 waypoints on each flight plan. The G950 can be used to navigate direct point-to-point, which also can be used as guidance from a certain point or position to another point on the flight plan.

A ground-based navigation aid was not available in the Bayabiru and the airstrip information for Bayabiru was not included in the Aeronautical Information Publication (AIP). The Smart Aviation developed Operation Manual Part C (OM-C) which included area, routes and aerodromes information of Bayabiru that were used internally.

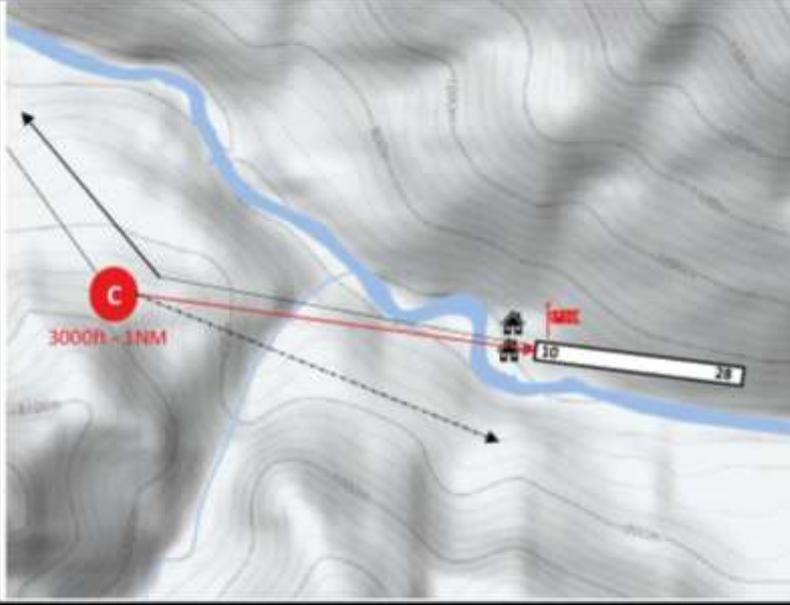
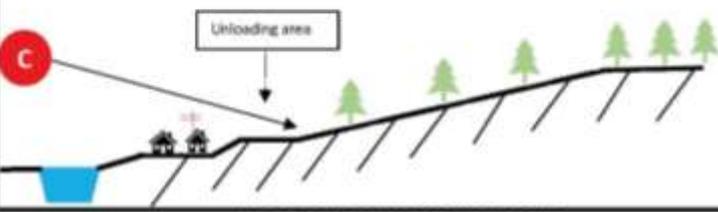
	BAYA BIRU - BYB	R105 NBR 47NM (30')
	S03 37.09 E136 15.94	WIND TIME 10:30
	Frequency	122.1 / 122.4
	Length	350m / 25m
	TDZ Elev.	2500 ft
	TOP Elev.	2550 ft
	Slope	5% to 7% UP
	Surface	Grass
	MLW	TBD
	Vref	60kts
	ROUTING	
	WABI	S 03° 22.00'E 135° 30.00'
	PTB	S 03° 30.39'E 135° 54.59'
HAZARDS / OBSTACLES / REMARKS		BYB S03° 37.09' E136° 15.94'
Situated in a tight valley, terrain to the South and North Small antenna on short final on top of the roof. Often helicopter traffic Occasional morning fog and rain by mid day Wind picks up from around 9 to 10 AM (often westerly wind for landing. (tailwind) Tariku PAC750 airframe parked at end of runway turn around area Grass tends to grow fast. If too tall ask them to cut the grass Unloading and loading at bottom of the strip		ALTITUDE VMC
LANDING		WABI - BYB: 7500ft BYB - WABI 6500ft
Landing runway 10 only / go around follow the river/ Unable to stop swerve right		
TAKEOFF		
Takeoff runway 28 only / aborted takeoff swerve to the right if unable to stop / Engine failure: go for the river		

Figure 2: Area, routes, and aerodromes information of Bayabiru

1.9 Communications

The pilot used two-way Very High Frequency (VHF) radio communication to communicate with Nabire tower controller and when made broadcast on a frequency in the uncontrolled airspace. The communication between pilot and Nabire tower controller was recorded in ground-based communication recorder, and the communication in the uncontrolled airspace was not recorded.

1.10 Aerodrome Information

The Bayabiru airstrip situated on a valley and next to a river. The airstrip was operated by local government of Paniai which had not been certified by the DGCA. Based on the area, routes and aerodromes information developed by the Smart Aviation, the airstrip information was as follow:

Coordinate	: 03°37.09'S 136°15.94'E
TDZ ⁴ Elevation	: 2,500 feet above mean sea level
Top Elevation ⁵	: 2,550 feet above mean sea level
Runway Direction	: 10/28
Runway Length	: 350 meters
Runway Width	: 25 meters
Surface	: grass
Slope	: 5% to 7%

The Smart Aviation used the runway 10 for landing and runway 28 for takeoff.



Figure 3: The airstrip condition (taken in 2020)

The airstrip was equipped with wind shock, located on the settlements near the airstrip about 170 meters from beginning runway 10 on bearing 275°.

4 TDZ is touchdown zone.

5 The runway of Bayabiru is an upslope runway, the top elevation is the highest elevation of the runway.



Figure 4: The windsock location (yellow dot) and the airstrip

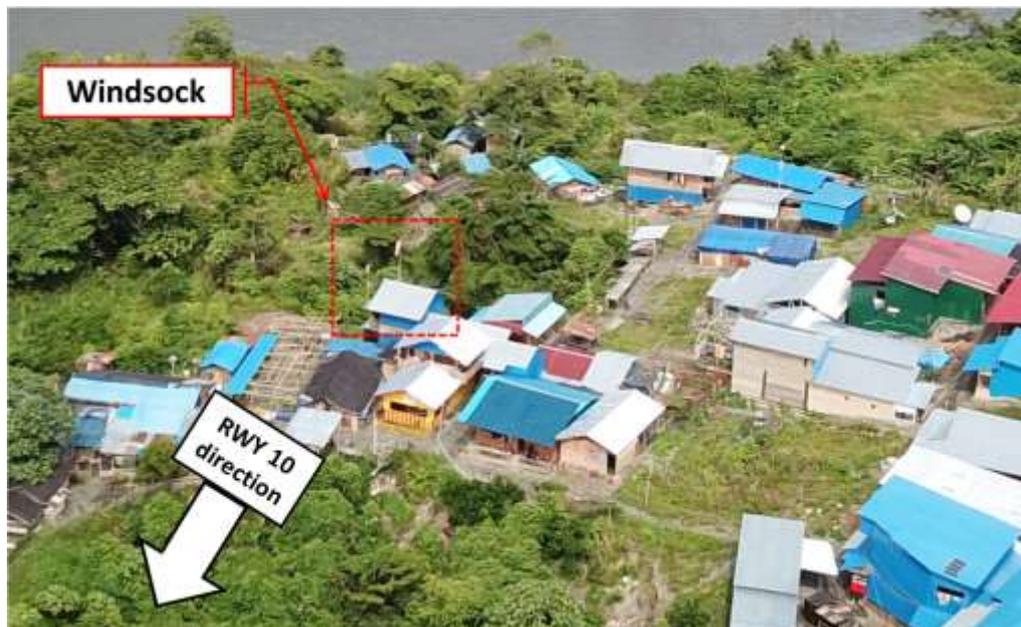


Figure 5: The windsock location (inside red-dotted square)

1.11 Flight Recorders

1.11.1 APIBOX

The aircraft was installed with a APIBOX which recorded flight data including audio data. The data is stored on a Secure Digital (SD) data card and memory unit. The APIBOX was able to record more than 100 different parameters of flight data, and up to 3 audio channels.

The SD data card of the APIBOX was successfully retrieved and the detail of the recorded data will be included in the final report.

1.11.2 Global Positioning System

The aircraft was equipped with Garmin G950 GPS, which has capability of flight data logging. The Garmin G950 was able store several data on a SD data card. After the occurrence, the data of the SD data card installed on the GPS was successfully retrieved.

The recorded file of the occurrence flight recorded 36 minutes of aircraft movement.

GPS flight data record indicated that during touched down the aircraft heading was 096° and reduced (aircraft veered to the left). About 60 meters after the touchdown, the aircraft heading started to increase while the aircraft track started to reduce from 096° (aircraft heading to the right while the aircraft veered to the left).

The further data of the GPS will be included in the final report.

1.12 Wreckage and Impact Information

After touched down, the aircraft veered and skidded to the left. Thereafter, the left wing impacted bushes on the left runway strip and the aircraft swung to the left then the right wing following by the aircraft nose impacted higher ground of the runway strip.

The aircraft stopped about 140 meters from touchdown on heading 345°. The aircraft tilted to the right as the right wheel was on a ditch with soft soil surface.



Figure 6: The aircraft condition taken after the aircraft stopped

The detail damaged of the aircraft were as follows:

- a. propeller blades damaged
- b. engine power section wrinkled



Figure 7: The damaged of the propeller blades (left figure) and wrinkled of engine power section (right figure)

- c. right wing tip damaged, and bent at wing rib station number 5610-6930
- d. left wing tip bent at wing rib station number 6600-6930
- e. both navigation lights broken



Figure 8: The bent of left-wing tip (red arrows) and the broken navigation light (black arrow)

1.13 Medical and Pathological Information

Medical and pathological information were not available at the time of the issuance of this report. Should any medical and/or pathological information be obtained during this investigation that is relevance to this investigation, it will be included in the final report.

1.14 Fire

There was no evidence of fire in-flight or after the aircraft impacted terrain.

1.15 Survival Aspects

After the aircraft stopped, the pilot and the passenger evacuated by themselves from the aircraft.

1.16 Tests and Research

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

1.17 Organizational and Management Information

The aircraft was operated by PT Smart Cakrawala Aviation (Smart Aviation) which had valid Air Operator Certificate (AOC) number 135-062. The Smart Aviation is authorized 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.

The Smart Aviation developed Operation Manuals (OM)s which contains policy and procedure approved by the Directorate General of Civil Aviation.

1.17.1 Aerodrome Risk Classification

According to the aircraft operator Operation Manual Part C (OM-C) subchapter 1.6, the aircraft operator adopted the ICAO airport categories. Most of aerodrome in Papua were classified as Category C which defined as:

An aerodrome requiring additional training or considerations to a category B airport and is considered to pose certain problems for the approach and / or landing and / or take off.

Prior to operating to a Category C aerodrome, each pilot shall have completed a specific checkout and received Chief Pilot approval to operate from that specific aerodrome. Most of the Category C airports operated by PT. Smart Cakrawala Aviation are located in Papua.

The aircraft operator considered to provide additional risk classification of the aerodrome Category C especially the aerodrome at Papua. The classification is conducted since there were additional hazards need to be considered, such as unimproved runway surface, slope etc. The risk classification of aerodrome was as follows:

a. Mountain Level 1:

Class 1 is the lowest of the category C airstrips but still represents a medium to high level of risk. Mountain Level 1 airstrips may have some or all of the following hazards: Slope, softness, slipperiness, undulations, wind issues (crosswind, tailwind and/or turbulence), crown, and/or shorter lengths. Most class 1 airstrips are one-way strips with a key point and abort point beyond which a go-around is not possible. Mountain Level 1 airstrips usually have weight restrictions for takeoff and may have higher field elevations.

b. Mountain Level 2:

Class 2 airstrips have all of the hazards and associated risks of Mountain Level 1 airstrips plus may have: higher touchdown slope, changes in slope along the runway length, side slope, visual illusions, short or modified approaches, even shorter runway Lengths, and are more susceptible to wind issues including updrafts and downdrafts on final. The weather may change rapidly causing the airstrip to close down quickly. Mountain Level 2 airstrips are considered high risk.

c. Mountain Level 3:

Class 3 airstrips are the highest risk airstrip. They may have all of the hazards and associated risks of Mountain Level 1 and Mountain Level 2 and additionally may have some or all of the following risks: sun / shadow, unseen hazards such as strong updrafts or downdrafts on short final, problems with wind requiring a wind restriction, strong visual illusions, reduced margin, very steep touchdown slope, many or large changes in runway slope, be very rough or soft, have changes in runway heading (doglegs), limited visual reference to the runway on approach or during takeoff, short, steep or angled approaches, quickly changing wind or weather conditions, be in very tight valleys where the abort point is quite far out and the go around options are very limited and require precise aircraft control.

According to the runway analysis document provided by the aircraft operator, the Bayabiru was classified as Mountain Level 3 airstrip.

1.17.2 Flight Operation to Bayabiru

On 20 January 2022, the aircraft operator conducted hazard identification and risk assessment prior to conduct flight operation to Bayabiru. The hazard identification process identified seven hazards including pilot qualification, and airstrip surface and its runway dimension. The following was the hazard identification and mitigation determined by the aircraft operator:

Hazard	Mitigation
<i>The flight mission could not be conducted safely if pilots have no qualification and inadequate experience accordingly.</i>	<ol style="list-style-type: none"> 1. <i>Smart Aviation assigned pilots who have qualification according to pilot class order and Airstrip Classification refer to OM C and SOP Mountainous</i> 2. <i>Follow airstrip & route information which has been established.</i>
<i>Runway grass, runway length 350m and width 25 m. At TDZ 5% up 7% level at top. Runway can be slippery when wet</i>	<ol style="list-style-type: none"> 1. <i>To ensure runway dry condition at baya biru prior to fly</i> 2. <i>Maintain runway center line</i>

After performed the mitigation, the aircraft operator determined the risk was acceptable and in February 2022, the flight operation to Bayabiru had been conducted.

1.18 Additional Information

The data collection in the occurrence site was limited due to the travel limitation during the Corona virus (COVID-19) pandemic.

The investigation involved the participation of the Swiss Transportation Safety Investigation Board (STSB) as the State of Design and the State of Manufacture. The agency has appointed accredited representatives to assist the investigation in accordance with the provisions in International Civil Aviation Organization (ICAO) Annex 13.

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.

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.

2 FINDINGS

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. The pilot held valid Commercial Pilot License (CPL) and qualified as a single engine land aircraft pilot. The pilot also had valid first-class medical certificates with medical limitation to wear corrective lenses for near and distant vision.
2. The last proficiency check pilot was conducted on 9 August 2021 using Cessna 208 aircraft and the result were satisfactory without any remark.
3. The pilot was a qualified company flight instructor for Pilatus PC-6/B2-H4 aircraft.
4. Based on the pilot record, the pilot had flown nine times from Nabire to Bayabiru including the occurrence flight. All the flights were conducted in February 2022 and using the same aircraft with the occurrence flight. Those flights were the only experience of the pilot to fly to Bayabiru.
5. Prior to fly to Bayabiru, the pilot conducted a route qualification check with another captain pilot who had experience to fly from Nabire to Bayabiru. The route qualification check was performed on 21 February 2022 and the result was passed.
6. The aircraft had valid Certificate of Airworthiness (C of A) and a valid Certificate of Registration (C of R).
7. There was no record of aircraft serviceability in the past 3 months prior to the occurrence. During the occurrence flight, the aircraft was operated within the weight and balance envelope.
8. The aircraft was installed with a APIBOX which recorded flight data including audio data, and equipped with Garmin G950 GPS, which has capability of flight data logging.
9. The pre-flight inspection performed by the aircraft engineer of Smart Aviation and the pilot did not find any abnormality on the aircraft system.
10. During the preparation of the first flight, the pilot received information of weather and runway condition of Bayabiru from the aircraft operator Flight Operation Officer (FOO). The reported condition was based on visual observation by local resident of Bayabiru which also providing photo of runway condition.
11. The weather at Bayabiru was reported clear, and the photo of the runway condition depicted some of runway surface was wet as there was rain at the night before. The pilot considered that was the typical condition of the runway at Bayabiru and decided to conduct the flight operation.

12. During the first landing at Bayabiru, the soil of the runway surface was soft and some of area was muddy, consistent with the photo provided by the local resident.
13. The pilot continued the flight operation to Bayabiru considering the first flight was uneventful and there was no rain over the airstrip which can make the runway more slippery.
14. GPS flight data record indicated that during touched down the aircraft heading was 096° and reduced (aircraft veered to the left). About 60 meters after the touchdown, the aircraft heading started to increase while the aircraft track started to reduce from 096° (aircraft heading to the right while the aircraft veered to the left).
15. The left wing impacted bushes on the left runway strip and the aircraft swung to the left then the right wing, followed by the aircraft nose, impacted to the higher ground on the left of the runway strip.
16. The aircraft stopped about 140 meters from touchdown on heading 345°. The aircraft tilted to the right as the right wheel was on a ditch with soft soil surface.
17. On 20 January 2022, the hazard identification and risk assessment performed by the aircraft operator determined that the runway at Bayabiru can be slippery when wet. The mitigation for that hazard was ensuring the runway was dry prior to fly and to always maintain runway centerline.

3 SAFETY ACTION

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

4 SAFETY RECOMMENDATIONS

4.1 Smart Aviation

- **04.O-2022-01.1**

On 20 January 2022, the hazard identification and risk assessment performed by the aircraft operator determined that the runway at Bayabiru can be slippery when wet. The mitigation for that hazard was ensuring the runway was dry prior to fly and to always maintain runway centerline.

Prior to the first flight to Bayabiru, the runway condition of Bayabiru had been provided to the pilot which indicated that some of runway surface was wet as there was rain at night. The pilot considered that was the typical condition of the runway at Bayabiru and decided to conduct the flight operation.

During the first landing at Bayabiru, the soil of the runway surface was soft and some of area was muddy, consistent with information provided to the pilot before the flight. The pilot continued the flight operation to Bayabiru. Considering the first landing at Bayabiru was uneventful and there was no rain over the airstrip which could make the runway more slippery.

A soft surface and muddy condition on an unpaved runway can make the runway became slippery and increase the difficulty to control the aircraft. The departure with information of wet runway was not in accordance with the hazard identified by the aircraft operator for Bayabiru airstrip.

Therefore, the KNKT recommends the Smart Aviation to ensure flight operation to follow mitigation that have made by the company during hazard identification and risk assessment.

KOMITE NASIONAL KESELAMATAN TRANSPORTASI REPUBLIK INDONESIA

Jl. Medan Merdeka Timur No.5 Jakarta 10110 INDONESIA

Phone : (021) 351 7606 / 384 7601 Fax : (021) 351 7606 Call Center : 0812 12 655 155

website 1 : <http://knkt.dephub.go.id/webknkt/> website 2 : <http://knkt.dephub.go.id/knkt/>

email : knkt@dephub.go.id