KOMITE NASIONAL KESELAMATAN TRANSPORTASI
REPUBLIC OF INDONESIA

PRELIMINARY

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Aircraft Accident Investigation Report

PT White Sky Aviation

Bell 505; PK-WSU

Ungasan Heliport, Bali

Republic of Indonesia

12 July 2022

2022

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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Jakarta, 19 September 2022

KOMITE NASIONAL
KESELAMATAN TRANSPORTASI
CHAIRMAN

SOERJANTO TJAHJONO

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ABBREVIATIONS AND DEFINITIONS

AOC	:	Air Operator Certificate
C of A	:	Certificate of Airworthiness
C of R	:	Certificate of Registration
COM	:	Company Operation Manual
CPL	:	Commercial Pilot License
CV	:	*Commanditaire Vennootschap*
DGCA	:	Directorate General of Civil Aviation
FBH	:	Flybali Heliport
FOO	:	Flight Operation Officer
GCS	:	Glasgow Coma Scale
HDA	:	Helideck Assistance
HLO	:	Helicopter Landing officer
KM	:	Kilometer
KNKT	:	*Komite Nasional Keselamatan Transportasi*
LT	:	Local Time
LTD	:	Limited
NR	:	Rotor RPM
PT	:	*Perseroan Terbatas*
PTE	:	Private
RPM	:	Revolutions per Minute
SOP	:	Standard Operating Procedures
SQA	:	Safety Quality Assurance
UAI	:	Urban Air Indonesia
VP	:	Vice President
WSA	:	Whitesky Aviation

SYNOPSIS

A Bell 505 Helicopter registration PK-WSU (the helicopter) operated by Urban Air under Air Operator Certificate (AOC) of PT Whitesky Aviation, served sightseeing flight from Flybali Heliport (FBH), Ungasan Bali to fly above tourist iconic destinations around Bali.

On 12 July 2022, the helicopter was scheduled to conduct 12 sightseeing flights. The route was from FBH – Garuda Wisnu Kencana Statue (GWK) – Dreamland Beach – Uluwatu Temple and returned to FBH which took approximately 12 minutes.

About 16.15 LT, on day light condition, the helicopter landed on the FBH. The helideck assistant (HDA) came near to the helicopter to assist the passengers disembarkation to the waiting room. After about one minute, the helicopter engine idled and stabilized, the pilot shut down the engine.

When the main rotor rotation was around 60% RPM (NR), a loud sound was heard and the pilot felt the pedal vibrate. The engineer 1 checked on the behind of helicopter and saw that the engineer 2 was laid on the ground with face down position. Afterward, the engineer 1 asked the pilot to activate the rotor brake. After the rotors stopped rotating, the ground staff checked the engineer 2 which was laid on the ground behind the helicopter. The engineer 2 experienced injuries on the back and right hand.

Considering the injury and no ambulance was available, the engineer 2 was transported to the nearest hospital (Hospital 1).

About 1700 LT, the engineer 2 arrived at Hospital 1, and treated to stabilize the condition. About 23.30 LT, after the engineer condition has been stable, the engineer 2 was transported to Hospital 2 located about 17 KM from Hospital 1, which has more facilities.

On 23 July 2022, the Hospital 2 stated that the engineer 2 passed away due to septic shock and acute respiratory distress syndrome.

1 FACTUAL INFORMATION

1.1 History of the Flight

On 12 July 2022, a Bell 505 helicopter registration PK-WSU operated by Whitesky Aviation to serve sightseeing flight from Flybali Heliport (FBH), Ungasan, to fly above tourist iconic destinations around Bali.

On the day of the occurrence, the helicopter was scheduled to conduct 12 sightseeing flights. All flights of the day were uneventful until the helicopter landed.

On the last flight, the helicopter flew from FBH – Garuda Wisnu Kencana Statue (GWK) – Dreamland Beach – Uluwatu Temple and returned to FBH which took approximately 12 minutes.

On board the helicopter was one pilot and four passengers which one of the passenger occupied left cockpit seat. About 1615 LT[1] (0815 UTC), on day light condition, the helicopter landed on the FBH heading to the windsock. The helideck assistant (HDA) came near to the helicopter to assist the passenger disembarkation to the waiting room.

After the helicopter engine idled and stabilized, the pilot performed engine shut down. Some ground staff including helicopter engineer (the engineer 1), documentation personnel, and HDA went to the helicopter in preparation for termination of the flight. Most of these personnel went to the cabin. Another engineer (the engineer 2) also went to the helicopter and stood near the tail boom, between the horizontal stabilizer and the tail rotor. The engineer 2 left the area and went to the cabin, then return to the first position, faced toward to the helicopter cabin.

When the main rotor rotation was around 60% RPM (NR), a loud sound was heard and the pilot felt the pedal vibrate. The engineer 1 checked on the area behind of helicopter and saw the engineer 2 laid on the ground. Afterward, the engineer 1 asked the pilot to activate rotor brake[2].

After the rotors stopped rotating, the ground staff checked the engineer 2 and found injuries on the back and right hand. The engineer 2 then transported to the nearest hospital.

1.2 Injuries to Persons

The engineer fatally injured after received medical treatment about 11 days in the hospital.

1.3 Damage to Aircraft

The aircraft substantially damage. Both tail rotor blades were broken, and the tail rotor gearbox found cracked.

[1] The 24-hours clock in Local Time (LT) is used in this report to describe specific events occurred. Local time is UTC+8 hours
[2] Rotor brake is a device used to stop the rotor blade during shutdown

1.4 Personnel Information

1.4.1 Pilot in Command

Gender	:	Male
Age	:	26
Nationality	:	Indonesian
Date of joining company	:	Single
License	:	CPL/H
Date of issue	:	03 November 2019
Aircraft type rating	:	Bell 505
Medical Certificate	:	First Class
Validity	:	15 December 2022
Medical limitation	:	None
Flying experience		
Total hours	:	750 hours
Total on type	:	162 hours
Last 90 days	:	124 hours 13 minutes
Last 30 days	:	25 hours 42 minutes
Last 7 days	:	4 hours
Last 24 hours	:	3 hours 42 minutes

1.4.2 Engineer 2

The engineer 2 was 39 years old, Indonesian nationality. The engineer 2 had experienced for 18 years as the helicopter maintenance engineer and joined the company since 24 May 2021. The engineer 2 held several helicopter type ratings such as Bell 505, Bell-412 series, AS 350 Series, and Sikorsky S-76 Series.

On 12 July 2022, the day of the occurrence, was the second day of duty for the engineer 2 after about 4 weeks off duty. On 11 July 2022, the engineer 2 with the other engineer performed the 400-hour inspection of the PK-WSU helicopter.

1.5 Aircraft Information

1.5.1 General

Registration Mark	:	PK-WSU
Manufacturer	:	Bell Helicopter Textron
Country of Manufacturer	:	Canada
Type/Model	:	Bell-505
Serial Number	:	65264

Year of Manufacture	:	2020

Certificate of Airworthiness

Date of issue	:	04 June 2022
Validity	:	03 June 2023
Category	:	Normal
Limitation	:	None

Certificate of Registration

Number	:	4303
Owner	:	Uniserve Trading Forwarding PTE Ltd
Date of issue	:	04 June 2021
Validity	:	03 June 2024
Time Since New	:	832.2 Hours
Cycles Since New	:	2,667 Flight Cycle
Last Major Check	:	26 May 2022 (2 Years Inspection) 692 hours and 2,239 cycles
Last Minor Check	:	11 July 2022 (400-hour inspection) 829 hours and 2,655 cycles

1.5.2 Engines

Manufacturer	:	Saffran Helicopter Engine
Type/Model	:	Arrius 2R
Serial Number engine	:	54102
Time Since New	:	832.2 Hours
Cycle Since New	:	1,286 Flight Cycles

1.5.3 Main Rotors

Manufacturer	:	Bell Helicopter Textron
Part Number	:	206-015-001-119
Serial Number-1 Blade	:	BH734255
Time Since New	:	832.2 hours
Cycle Since New	:	2667
Serial Number-2 Blade	:	BH738923
Time Since New	:	832.2 hours
Cycle Since New	:	2,667 flight cycles

1.5.4 Tail Rotors

Manufacturer	:	Bell Helicopter Textron
Part Number	:	206-016-201-135
Serial Number-1 Blade	:	CS21530
Time Since New	:	832.2 hours
Cycle Since New	:	2667
Serial Number-2 Blade	:	CS21531
Time Since New	:	832.2 hours
Cycle Since New	:	2,667 flight cycles

1.6 Aerodrome Information

Heliport Name	:	Fly Bali
Heliport Operator	:	CV Fly Bali
Heliport Certificate	:	0108/RSFC-DBU/I/2021
Validity	:	29 January 2024
Coordinate	:	08˚ 50’ 24.15” S; 115˚ 09’ 43.70” E
Heliport Dimension	:	22.5 meter (circle)
Surface	:	Concrete

The heliport located at Ungasan Village, Kuta Selatan regency, Badung district, Bali.

Figure 1. Fly Bali heliport layout

1.7 Flight Recorders

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

1.8 Wreckage and Impact Information

After contacted with the tail rotor, the engineer 2 was found in face down position behind the helicopter with severe bleeding. The tail rotor blades were broken. One of the broken blades was found on the area behind the helicopter and the other broken blades found in front of the helicopter on the area near the windsock.

1.9 Survival Aspects

About 16.15 LT, the helicopter landed. During the preparation for the termination of the flight of the day, the engineer 2 fell to the ground near the tail boom area. Injuries were found on the back and right arm. The engineer 1 asked the pilot to activate the propeller brake. After waiting for about two minutes for the tail rotor to completely stopped, the ground staff (HLO) and a Flight Operation Officer (FOO) approached to assist the engineer 2. The engineer 2 was seriously injured in face down position with severe bleeding. The Helicopter Landing Officer (HLO) checked the engineer 2 heart pulse and it was detected. The HLO and the FOO tried to stop the bleeding using available items on the first aid kit that was delivered by other personnel. Another personnel tried to call the ambulance however, the ambulance was not available.

As the bleeding could not be stopped and no ambulance was available, the engineer 2 was evacuated to the Hospital 1 using a car which was available at the heliport. The engineer 2 was laid down on a stretcher, guarded by the FOO. About 15 minutes later or about 1700 LT, the ambulance arrived at the hospital and the engineer 2 was administered to the emergency unit.

The medical team immediately examined the engineer 2 and stabilized the condition. According to the medical team, the blood pressure was low, indicated the sign of shock due to excessive blood loss, so the medical team conducted fluid resuscitation. The engineer 2 was conscious, with the Glasgow Coma Scale (GCS)[3] of E3V5M6.

The X-Ray was conducted later on and showed comminuted fracture on the right upper arm, complete fracture on some right ribs and lung injury. Considering the engineer 2 required an advance treatment by a subspecialist, the medical team decided to transfer the engineer 2 to Hospital 2 after stabilizing his hemodynamic condition.

At 0004 LT, the engineer was received by medical team at emergency unit of Hospital 2. The medical team conducted further treatment and preparing the engineer 2 for fracture reparation of the right upper arm and right ribs.

The first operation of the right upper arm was successfully performed later that day and the second operation for the ribs and the lung injury was performed six days later.

The general condition of the engineer was improved after the second operation. However, during the treatment at the hospital, infection occurred on the wounds and getting worse.

[3] The Glasgow coma scale (GCS) is a tool used to assess and calculate a patient's level of consciousness. The GCS uses a triple criteria scoring system: best eye opening (maximum 4 points), best verbal response (maximum 5 points), and best motor response (maximum 6 points). These scores are added together to provide a total score between 3 and 15 (Glasgow coma scale explained | The BMJ)

On 23 July 2022, the hospital stated that the engineer 2 passed away due to septic shock[4] and acute respiratory distress syndrome[5].

1.10 Organizational and Management Information

1.10.1 PT Whitesky Aviation

Aircraft Owner	:	Uniserve Trading Forwarding PTE LTD
Address	:	82 Kew Height Singapore 466228 - Singapore
Aircraft Operator	:	PT Whitesky Aviation
Operator Certificate	:	AOC 135-016
Address	:	Secure Building-building A, 1st floor. Jl Raya Protokol Halim Perdanakusuma Jakarta 13610-Indonesia
Validity	:	26 January 2026

Whitesky Aviation (WSA) operated two Cessna 208B Grand Caravan, one Bell 429 and three Bell 505 including PK-WSU helicopter. The Whitesky Aviation provided air charter services utilizing the PK-WSU helicopter to Urban Air Indonesia (UAI) under the aircraft charter and services agreement since 26 April 2021.

1.11 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.

1.12 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.

[4] Septic shock is a potentially lethal drop in blood pressure due to the presence of bacteria in the blood. (Septic shock or septicemia | definition of Septic shock or septicemia by Medical dictionary (thefreedictionary.com)

[5] Acute respiratory distress syndrome is an acute, diffuse, inflammatory form of lung injury life-threatening condition of seriously ill patients, characterized by poor oxygenation, pulmonary infiltrates, and acuity of onset. (Acute Respiratory Distress Syndrome - StatPearls - NCBI Bookshelf (nih.gov))

2 FINDINGS

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. The aircraft had valid Certificate of Airworthiness (C of A) and Certificate of Registration (C of R).
2. The pilot held valid license and medical certificate.
3. The engineer 2 held a valid license.
4. After the completion of the flight, some ground staff including helicopter engineer (the engineer 1), documentation personnel, HDA went to the helicopter in preparation for termination of the flight.
5. Another engineer (the engineer 2) also went to the helicopter and stood near the tail boom, between the horizontal stabilizer and the tail rotor.. The engineer 2 left the area and went to the cabin, then return to the first position, faced toward to the helicopter cabin.
6. After the helicopter engine idled and stabilized, the pilot performed engine shut down. When the main rotor rotation was around 60% RPM (NR), a loud sound was heard and the pilot felt the pedal vibrate. The engineer 1 checked on the behind of helicopter and saw that the engineer 2 laid on the ground. Afterward, the engineer 1 asked the pilot to activate rotor brake. After waiting for about two minutes for the tail rotor to completely stopped, some ground staff approached to assist the engineer 2. While another ground staff contacted ambulance. .
7. As the bleeding could not be stopped and no ambulance was available, the engineer 2 was evacuated to the Hospital 1 using a car available at the heliport.
8. The medical team immediately examined the engineer 2 and stabilized the condition. The engineer 2 was conscious, the blood pressure was low, indicated the sign of shock due to excessive blood loss.
9. The X-Ray examination found comminuted fracture on the right upper arm, complete fracture on some right ribs and lung injury.
10. Considering the engineer 2 required an advance treatment by a subspecialist, the medical team decided to transfer the engineer 2 to Hospital 2 after stabilizing his condition.

11. The first operation of the right upper arm was successfully performed later that day and the second operation for the ribs and the lung injury was performed six days later.
12. The general condition of the engineer was improved after the second operation. During the treatment at the hospital, infection occurred on the wounds and getting worse. After about 11 days of medical treatment in the hospital, the engineer 2 passed away.

3 SAFETY ACTION

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

4 SAFETY RECOMMENDATIONS

The Komite Nasional Keselamatan Transportasi is not issuing safety recommendation in this preliminary report. 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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