KOMITE NASIONAL KESELAMATAN TRANSPORTASI
REPUBLIC OF INDONESIA

PRELIMINARY

KNKT.24.09.19.04

Aircraft Accident Investigation Report

PT Trigana Air Service

ATR 42-500; PK-YSP

Stevanus Rumbewas Airport, Serui Papua

Republic of Indonesia

9 September 2024

2024

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 Law (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, 18 November 2024
KOMITE NASIONAL
KESELAMATAN TRANSPORTASI
CHAIRMAN

SOERJANTO TJAHJONO

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ABBREVIATIONS AND DEFINITIONS

ACO	:	Aeronautical Communication Officer
ACOL	:	Aeronautical Communication Officer License
AMEL	:	Aircraft Maintenance Engineer License
AOC		Air Operator Certificate
ARFF	:	Airport Rescue & Fire Fighting
ATPL	:	Airline Transport Pilot License
BEA	:	National Transport Safety Board, France
C of A	:	Certificate of Airworthiness
C of R	:	Certificate of Registration
CAMP	:	Continuous Airworthiness Maintenance Program
CAPT	:	Captain
CASR	:	Civil Aviation Safety Regulation
CVR	:	Cockpit Voice Recorder
DGCA	:	Directorate General of Civil Aviation
FA	:	Flight Attendant
FAC	:	Flight Attendant Certificate
FCOM	:	Flight Crews Operation Manual
FDR	:	Flight Data Recorder
FO	:	Flight Operation
FOO	:	Flight Operation Officer
FOOL	:	Flight Operation Officer License
GPS	:	Global Positioning System
hPa	:	Hectopascal
ICAO	:	International Civil Aviation Organization
ITT	:	Inter Turbine Temperature
Kg	:	Kilogram
KNKT	:	*Komite Nasional Keselamatan Transportasi,* Indonesia
LT	:	Local Time
NP	:	the propeller revolution per minute
NTSB	:	National Transport Safety Board, United States of America
P/N	:	Part Number
PEC	:	Propeller Electronic Control
PF	:	Pilot Flying
PIC	:	Pilot in Command
PM	:	Pilot Monitoring

S/N	:	Serial Number
SIC	:	Second in Command
TSB	:	Transport Safety Board, Canada
UPBU	:	*Unit Penyelenggara Bandar Udara*
UTC	:	Universal Time Coordinate
VOR	:	Very High Frequency Omni-directional Range

SYNOPSIS

At the time this preliminary report was published, the investigation has not conducted interview with the pilots due to their medical condition.

On 9 September 2024, an ATR 42-500 registered PK-YSP was being operated by Trigana Air Service on schedule passenger flight in Papua, Indonesia. The first three flight was uneventful.

During the fourth flight of the day, the flight was from Serui with intended destination of Sentani, on board of the aircraft were two pilots, two Flight Attendants (FA) and 44 passengers which included one engineer, and one flight operation officer (FOO). The Pilot in Command (PIC) acted as Pilot Monitoring (PM) and the Second in Command (SIC) acted as Pilot Flying (PF).

At 1035 LT, the aircraft started to takeoff. The aircraft speed continued increasing to about 100 knots, when both pilots noticed that the aircraft engines had abnormal condition. The PIC decided to cancel the take-off by retarded the power levers and selected to reverse. The aircraft then veer to the left out of the runway and stop about 1,200 meters from the beginning Runway 28.

Among the passengers were four Airport Rescue and Fire Fighting (ARFF) personnel of Serui who assisted the FA during the passenger evacuation process.

All passengers and crew were evacuated. Both pilots had serious injury, one FA and 18 passengers had minor injuries. All injured occupants were taken to the local hospital for treatment.

The investigation involving Bureau d'Enquêtes et d'Analyses (BEA), France as the state of manufacture, the Transport Safety Board (TSB) Canada as state of engine manufacture, and the National Transport Safety Board (NTSB), United States of America as the state of manufactured the powerplant or major components of the aircraft were involved in this investigation. BEA, TSB, and NTSB have appointed accredited representative and advisers to assist the investigation in accordance with the provisions of the ICAO Annex 13.

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 FACTUAL INFORMATION

1.1 History of the Flight

On 9 September 2024, an ATR 42-500 registered PK-YSP was being operated by Trigana Air Service on schedule passenger flight in Papua, Indonesia. The flight schedule of the day for the aircraft and flight crew were Sentani[1] – Serui[2] – Biak[3] – Serui – Sentani – Oksibil[4] – Sentani.

Prior to the first flight, medical examination carried out for all crewmember which consisted of heart rate, blood pressure, and body temperature. The result of the medical examination was no health issues for all crewmember. The first three flights were uneventful.

During the fourth flight of the day, the flight was from Serui with intended destination of Sentani, on board of the aircraft were two pilots, two Flight Attendants (FA) and 44 passengers which included one engineer, and one flight operation officer (FOO). The Pilot in Command (PIC) acted as Pilot Monitoring (PM) and the Second in Command (SIC) acted as Pilot Flying (PF).

At 0125 Coordinated Universal Time (UTC) or 1025 LT, in daylight condition, the pilot requested start up clearance to Aeronautical Communication Officer (ACO) and informed the planned cruising altitude was 13,500 feet.

At 1033 LT, the aircraft started taxi to Runway 28 via taxiway Alpha.

At 1035 LT, the pilot reported to ACO that ready for departure, the ACO then advice that the runway was clear.

The engines power was increased and the aircraft started the takeoff roll. The aircraft speed continued increasing to about 100 knots, when the PIC noticed that the engines had abnormal condition. The PIC decided to cancel the take-off by retarding the power levers and selected to reverse. The aircraft then veer to the left out of the runway and stop about 1,200 meters from the beginning Runway 28.

After the aircraft stopped, the FA waiting for evacuation command from the PIC for 10 seconds but there was no command from the PIC. The FA then decided to evacuate the passenger using all four doors.

Among the passengers were four Airport Rescue and Fire Fighting (ARFF) personnel of Serui who assisted the FA during the passenger evacuation process.

[1] Sentani in this report is referred to Sentani International Airport (WAJJ), Jayapura
[2] Serui in this report is referred to Stevanus Rumbewas Airport (WABO), Serui
[3] Biak in this report is referred to Frans Kaisiepo Airport (WABB), Biak
[4] Oksibil in this report is referred to Oksibil Airport (WAJO), Oksibil

Figure 1: The aircraft condition after stop

1.2 Injuries to Persons

Injuries	Flight crew	Passengers	Total in Aircraft	Others
Fatal	-	-	-	
Serious	2	-	2	
Minor	1	18	19	
None	1	26	27	
TOTAL	4	44	48	

All occupants were Indonesian.

1.3 Damage to Aircraft

The aircraft was substantially damaged.

All landing gears and the left engine propeller blades were broken. Left wing tip bent. The fuselage skin on the aft of cockpit section wrinkle. On the cockpit area, the central and pedestal panels was pulled backward. The instrument panel removed from its mountings, indicating a high impact.

Figure 2: The aircraft Wreckage

1.4 Other Damage

One of the runway edge lights was broken.

Figure 3: The damage of runway edge lights

1.5 Personnel Information

1.5.1 Pilot in Command

The PIC was 36 years old Indonesia who held a valid Air Transport Pilot License (ATPL) and qualified as an ATR 42/72 aircraft pilot. The PIC also held a valid Class 1 medical certificate with a medical limitation the holder shall wear corrective lenses for near and distant vision.

The last proficiency check of the PIC was conducted on 25 April 2024 and the result was proficient.

The PIC had a total flying hour of 6,860 hours and 26 minutes. On the day of the occurrence, the PIC had performed three flights with a total flying hour of about two hours.

1.5.2 Second in Command

The SIC was 48 years old Indonesian who held a valid Air Transport Pilot License (ATPL) and qualified as an ATR 42/72 aircraft pilot. The SIC also held a valid Class 1 medical certificate with a medical limitation the holder shall wear corrective lenses for near and distant vision.

The last proficiency check of the SIC was conducted on 15 June 2024 and the result was proficient.

The SIC had a total flying hours of about 8,928 hours and 19 minutes. On the day of the occurrence, the SIC had performed three flights with a total flying hour of about two hours.

1.5.3 Flight Attendant

All Flight Attendants (FAs) were Indonesian who held a valid Flight Attendant Certificate (FAC). The FA1 rated on Boeing 737 and ATR 42/72 while the FA2 rated only on ATR42/72. The FAs also held valid Class 2 medical certificates.

1.5.4 Flight Operation Officer

The Flight Operation Officer on board had a valid Flight Operation Officer License (FOOL) and qualified as a Boeing 737 and ATR 42/72 aircraft flight operation officer.

1.5.5 Aircraft Engineer

The aircraft engineer had a valid Aircraft Maintenance Engineer License (AMEL) and qualified as an ATR 42/72 aircraft engineer.

1.5.6 Aeronautical Communication Officer

The Aeronautical Communication Officer (ACO) was Indonesian held a valid Aeronautical Communication Officer License (ACOL) and qualified as a Flight Information Services.

1.6 Aircraft Information

1.6.1 General

ATR 42-500 aircraft with serial number of 559 registered PK-YSP was manufactured by Avions de Transport Regional in France in 1998. The aircraft had valid Certificate of Airworthiness (C of A) and Certificate of Registration (C of R).

The aircraft had total hours since new of 37,156 hours 29 minutes and total cycles since new of 40,673 cycles.

The engines installed on the aircraft was PW127F, manufactured by Pratt & Whitney Canada. The total time of the engine since new was 33,280 hours 31 minutes (engine 1/left engine) and 32,293 hours 38 minutes (engine 2/right engine).

The propellers installed on the aircraft was 568F-1 manufactured by Hamilton & Sundstrand. The total time of the propeller assemblies since new was 31,007 hours 2 minutes (left engine) and 36,984 hours 50 minutes (right engine).

1.6.2 Recent Maintenance History

No	Date	Discrepancy	Rectification
1	10 August 2024		1. Update Global Positioning System (GPS) Database VAT: 05 September 2024 Reference JIC: ATR-A-34-58-xx-01001-752A-A 2. Remove and Install TAS & Temperature indicator due to unreadable P/N: 7002838-907 S/N OFF: 07101922, S/N ON: 91020934 Reference ATR-A-34-15-80-0001-520A-A/72-A-A
2	11 August 2024	After takeoff cabin rate pressure system fluctuate	Cleaning both (electronic & pneumatic) out flow valves. Monitor for next flight.
3	19 August 2024		Perform work order number: 026/YSP/VII/2024 Reference Continuous Airworthiness Maintenance Program (CAMP) 42,500
4	27 August 2024		Remove and install left Propeller Electronic Control (PEC 1) due to company convenience. P/N OFF:

No	Date	Discrepancy	Rectification
			816332-5-401, S/N OFF: 10030014 P/N ON: 816332-5-004, S/N ON: 02077849. Reference MP.AT-A 61.21.60.01001.520 AA/720AA
5	28 August 2024		Remove and install main wheel assembly number 4 (outer right) due to worn out. P/N: 5006856-5, S/N ON: AUG98-1384, S/N OFF: MAR 1546. Reference MP.ATR-A-12-37-32-00001-520/720A-A
6	29 August 2024		Perform Very High Frequency Omni-directional Range (VOR) operational test due to periodic Reference CAMP ATR 42-500 form: TAS/42-5/APP4-3. Reference work order: 027/YSP/VIII/2024
7	30 August 2024	PEC 2 fault in flight	1. Check Propeller Electronic Control (PEC) memory, found message code 73. Perform deleted memory and retrim PEC. Operational test OK. Reference Maintenance Manual Hamilton Sundstrand 61.27.00 2. When transit Kepi, remove and install main wheel number 3 (inner right) due to flat spot. P/N: 5006856-R. S/N ON: MAR96-1077, S/N OFF: MAY01-16-13 Reference ATR-A-12.37.32.00001.520A.A/720A.A
8	1 September 2024		1. During daily inspection remove and install main wheel assembly number 4 (outer right) due to 1 bolt broken. P/N: 5006856-5 S/N ON: MAR00-1546, S/N OFF: AUG89-1384. Reference ATR.A 12.37.32.00001.520A.A/720A.A 2. During daily inspection remove and install electric hydraulic pump blue system due to CB pop out, test OK. P/N: 4019501, S/N

No	Date	Discrepancy	Rectification
			ON: AA777, S/N OFF: KR23 Reference ATR.A 29.1X.XX. 08001. 520A. A/720A.A 3. During daily inspection remove and install landing light assembly due to inoperative. Test OK P/N: 4213989. S/N ON: 49901, S/N OFF: 58301 (RH side). Reference ATR.A 33.42.50.00001.520A.A /720A.A
9	2 September 2024		1. Remove and install brake assembly number 1 (outer left) due to out of tolerance. Brake checks OK. P/N: 5006857-2, S/N ON: AUG91-701, S/N OFF: MAY90-489 Reference ATR-A-32-42-50-00001-520A.A/720A-A 2. Remove and install brake assembly number 4 (outer right) due to out of tolerance. P/N ON: 5006857-1, S/N ON: DEC87-575. P/N OFF: 5006857-1, S/N OFF: OCT91-735. Brake checks OK. Reference ATR-A-32-42-50-00001-520A.A/720A-A
10	3 September 2024	Landing gear not up	Continuity check at landing control lever pin code NM and landing selector valve pin code EC found open circuit. Rectification of the cable, functional test OK. ATR A.32.31.XX.01000.054.A.A ATR A.32.31.XX.00001.340.A.A
11	5 September 2024	IL291 return to Sentani, PEC #2, EEC #2 fault	Remove and install propeller valve module. Reference ATR-A-61-21-60 04003-520/720B-A. Ground run performance found good. P/N: C146440-2, S/N ON: 3265

No	Date	Discrepancy	Rectification
			S/N OFF: 507
12	7 September 2024		1. During daily inspection found right oil scavenge filter pop out. Replace oil filter P/N: 7578659AM. Reference ATR.A 79.22.60.40001.520A.A/720A.A 2. During daily inspection found left oil pump pressure filter pop out. Replace oil filter P/N: 7587923AM. Reference ATR.A 79.21.60.A.1001.520A.A/720A.A

1.6.3 Weight and Balance

According to the weight and balance sheet of the occurrence flight, the calculation of the take-off weight was 17,673 Kg of maximum takeoff weight was 18,600 Kg. The aircraft was operated within the weight and balance envelope.

1.7 Meteorological Information

The weather report for the Stevanus Rumbewas Airport, issued on 9 September 2024, at 0100 UTC was as follows:

Wind	:	240°/ 6 knots
Weather	:	good visibility and no low cloud (ceiling and visibility OK)
Temperature	:	30°C
Dewpoint	:	24°C
Pressure	:	1,006 hPa
Weather	:	no significant change expected

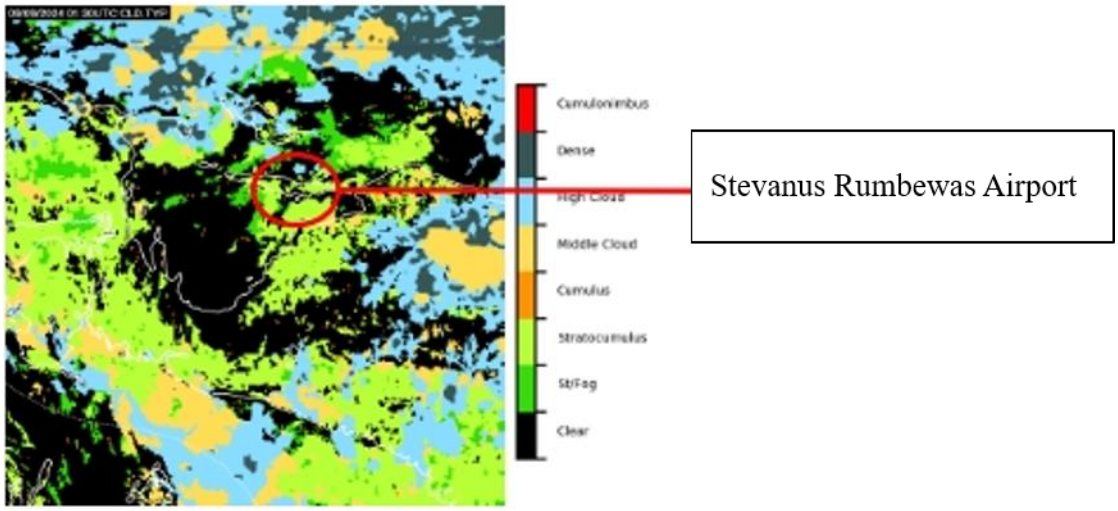

Figure 4: The satellite image of the occurrence site (red circle) at 0130 UTC

1.8 Aids to Navigation

No ground-based navigation aid was not available at Stevanus Rumbewas Airport. Aircraft navigation system was not relevant for the investigation.

1.9 Communications

All communications between Aeronautical Communication Officer (ACO) and the pilots were recorded on Cockpit Voice Recorder (CVR) for full duration of the flight. The detail of communication will be included in the final report.

1.10 Aerodrome Information

Airport Name	:	Stevanus Rumbewas, Serui
Airport Identification	:	WABO
Airport Operator	:	*Unit Penyelenggara Bandar Udara (UPBU)* under DGCA
Airport Certificate	:	0177/SBU/IX/2023
Validity	:	29 September 2028
Coordinate	:	01°49’ 47.8” S 139°04’09.7’ E
Elevation	:	75 feet
Runway Direction	:	10/28 (100°/280°)
Runway Length	:	1,600 meters
Runway Width	:	30 meters
Surface	:	Asphalt

1.11 Flight Recorders

1.11.1 Flight Data Recorder

The aircraft was fitted with a Flight Data Recorder (FDR), manufactured by L3 Communications, type/model was F1000, Part Number (P/N) S800-3000-00, and Serial Number (S/N) 000002194. The data contained 249 parameters and approximately 54 hours 41 minutes of aircraft operation, which consisted of 49 flights including the occurrence flight.

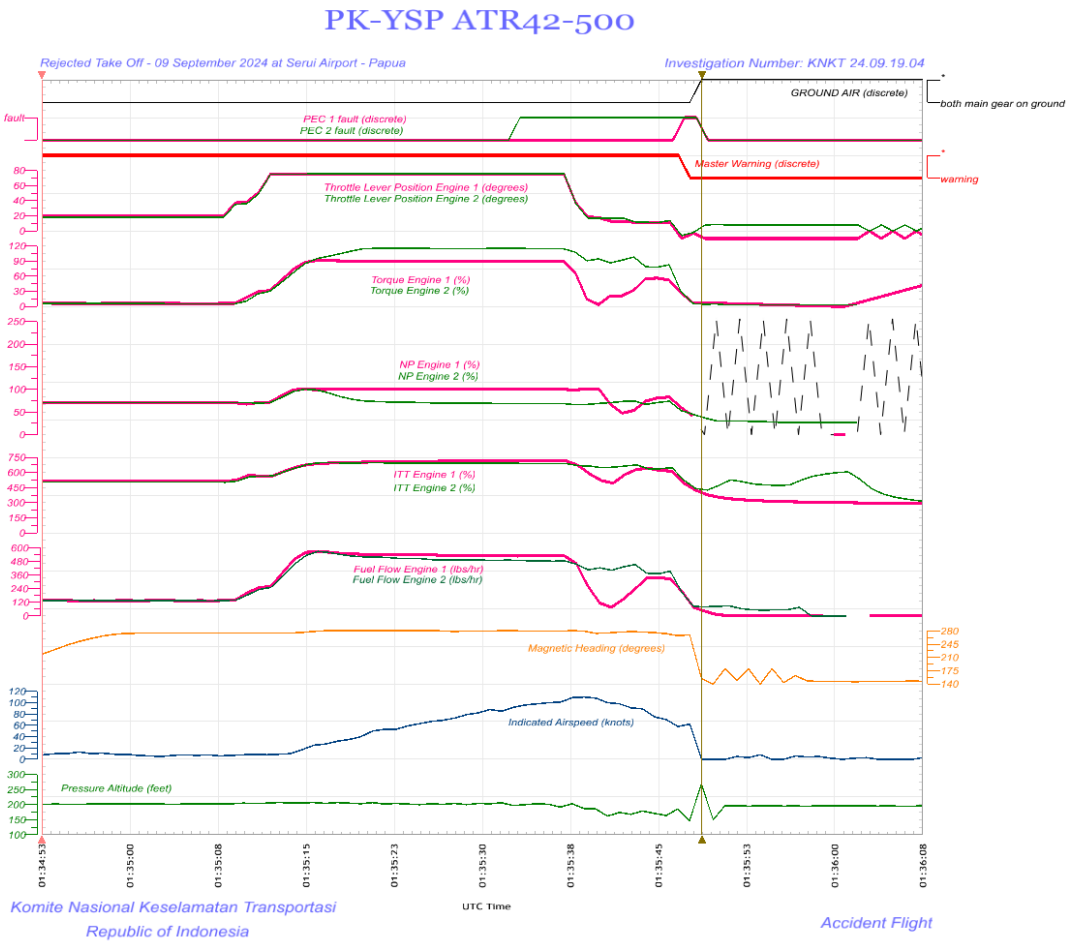

Figure 5: The relevant parameters of the FDR

The significant event as recorded in the FDR is as follows:

1. At 10:35:09 LT, the take-off was initiated, indicated by increasing throttle levers position engine 1 to 37 degrees and engine 2 to 35 degrees, one second later the toque of both engines increased.
2. At 10:35:15 LT the aircraft started the take-off roll indicated by the increasing of the indicated airspeed.

3. At 10:35:15 LT, the propeller revolution per minute (NP) of both engines reached 100%, one second later the NP of the engine number 2 decreased while the NP engine number 1 steady 100%. At the same time the torque of engine 1 was 88% and engine 2 was 85%.
4. At 10:35:17 LT, the torque of engine number 1 decreased to 90% while the torque of engine number 2 passed 100% and continued increasing to maximum 116%.
5. At 10:35:24 LT, the NP engine number 1 was 100 % and the NP engine number 2 was 72%. The torque engine number 1 was 90% and the torque engine number 2 was 116%.
6. At 10:35:33 LT, the Propeller Electronic Control (PEC) number 2 fault for 16 seconds.
7. At 10:35:38 LT, the throttle lever positions decreased. The aircraft passed airspeed of 109 knots.
8. At 10:35:40 LT, the airspeed reaches 110 knots (maximum speed) and reducing.
9. At 10:35:41 LT, The Inter Turbine Temperature (ITT) engine number 1 decreased to 494°C and the ITT engine number 2 decreased to 652°C.
10. At 10:35:47 LT, the Propeller Electronic Control (PEC) number 1 fault for two seconds.
11. At 10:35:47 LT, the aircraft started turn left indicated by the magnetic heading passed 270 degrees.
12. At 10:37:00 LT, the recording was stopped.

Detailed information on the FDR will be included in the Final Report.

1.11.2 Cockpit Voice Recorder

The aircraft was fitted with with a Cockpit Voice Recorder (CVR), manufactured by L3 Communications, type/model FA2100, P/N 2100-1020-02, and S/N 000297737. The CVR recorded 31 minutes 4 seconds of good quality recording data

Before the aircraft reach the airspeed of 70 knots, the terms that will be used for the flight crew are Captain (CAPT) and First Officer (FO). After the aircraft exceeds a speed of 70 knots, the terms used are Pilot Flying (PF) and Pilot Monitoring (PM).

The significant excerpts of the CVR are as follows.

Time (LT)	Event
10:35:00	The FO reported ready for departure and the ACO informed that the Runway 28 was clear.
10:35:00	The FO announced “ATPCS[5] arming check”
10:35:20	The FO announced “Arming proceed to the notch check”
10:35:28	The FO announced that the airspeed has reached 70 knots and stated

[5] ATPCS Automatic Takeoff Power Control System

Time (LT)	Event
	that the FO handle the control of the aircraft.
10:35:35	The PM announced that the airspeed has reached V1.
10:35:37	The PM announced “Rotate”
10:35:37	The PF announced “Rotate Check”
10:35:40	The PM stated that something unusual happened to the aircraft.
10:35:45 to 10:35:50	Four collision sounds were recorded.
10:36:48	End of recording.

Detailed information on the CVR will be included in the Final Report.

1.12 Wreckage and Impact Information

The aircraft tire marks were found on the runway started about 840 meters form the beginning Runway 28, which was identified as right main wheel mark. About 5 meters from right main wheel mark, the left main wheel mark appeared followed by the nose wheel tire mark about 57 meters from the first tire mark. Since then, the tire marks started veer to the left of the runway centerline. The tire marks started exit the runway about 1,100 meter and the aircraft stop at 1,200 meters from the beginning Runway 28.

Figure 6: The aircraft tire marks on the runway

1.13 Medical and Pathological Information

Both pilots had serious injury and treated in hospital. The medical information has not available at the time of the issuance of this preliminary report. The relevant medical and/or pathological information be obtained during this investigation will be included in the final report.

1.14 Fire

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

1.15 Survival Aspects

When the aircraft engines were being started, one of the Airport Rescue and Fire Fighting (ARFF) personnel turn on the fire truck engine and standby in the fire truck. The other ARFF personnel monitored the aircraft movement at ARFF watch room.

While the aircraft on takeoff, the ARFF personnel on the watch room noticed that the aircraft did not lift off as usual. All the ARFF personnel heard a collision, the ARFF personnel in the watch room immediately headed to the fire truck and proceeded to the accident site.

ARFF personnel coordinated with the aviation security to secured the airport perimeter to prevent unauthorized personnel access to the airside. The ARFF personnel also asked the aviation security personnel to bring the ambulance and other car for passenger evacuation.

After the aircraft stopped, the FA waiting for evacuation command from the PIC for 10 seconds but there was no command from the PIC. The FA then decided to evacuate the passenger using all four doors.

Among the passengers were four Airport Rescue and Fire Fighting (ARFF) personnel of Serui who assisted the FA during the passenger evacuation process.

When the ARFF personnel arrived at the accident site, some of the passengers had already managed to exit the aircraft. The ARFF personnel did not see any fire or smoke on the aircraft, did not hear any engine sound and did not see any fuel leaks from the wing, and decided not to operate the firefighting equipment.

The ARFF personnel then assisted the passenger evacuation. After all the passengers had evacuated the aircraft, the ARFF personnel proceeded to the cockpit and found both pilots still conscious, but they both moaned of pain in their lower back and legs. The ARFF personnel then evacuated both pilots from the cockpit.

All injured occupants were taken to the local hospital for treatment.

1.16 Tests and Research

Any test and research related to the accident will be included in the final report.

1.17 Organizational and Management Information

The aircraft was operated by PT Trigana Air Service which had a valid Air Operator Certificate (AOC) number 121-006. The Trigana Air authorized to conduct air transportation carrying passenger and cargo in scheduled operation within and outside Indonesia for aircraft operations under Civil Aviation Safety Regulation (CASR) Part 121.

At the time of the occurrence, the Trigana operated 5 ATR 42-300/500, 2 ATR 72-200, 9 Boeing 737-300/500 (passenger and freight) and 1 Dornier 328-100.

1.17.1 Take-off Procedure

The Flight Crew Operations Manual (FCOM) ATR 42-400/500 Trigana NOR.15, stated that the take-off procedure was as follows.

CAPT	F/O
Cleared and ready for Takeoff	
► ADU .....READ ► N/W STEERING HANDLE ... ... HAND ON ► TAKEOFF .....ANNOUNCE ► BRAKES .... RELEASE ► PL 1+2..... ..... ADVANCE TO NOTCH	► ADU .... CHECK ► CONTROL WHEEL..... ..... INTO WIND ► PL 1+2..... ..... CONFIRM IN THE NOTCH ► ATPCS ARM light..... ..... COMES ON **Note** *Abort takeoff if ATPCS ARM light is not on and steady.* ► ATPCS ARM .....ANNOUNCE ► ENGINE PARAMETERS : MONITOR *Expected takeoff TQ must be obtained no later than 70 kt IAS, otherwise takeoff must be aborted.* *NP at 100 % (-0.6 %/ +0.8 %).* *ITT must not exceed limitations, TQ at expected takeoff value.* ► POWER SET .....ANNOUNCE
Reaching 70kt	► 70 KNOTS .... ANNOUNCE

CAPT	F/O
► CAPT IAS .... X CHECK ► N/W STEERING HANDLE.....RELEASE ■ **If CAPT is PF** ► I HAVE CONTROL .... ANNOUNCE ■ **If F/O is PF** ► YOU HAVE CONTROL ..... ANNOUNCE	■ **If F/O is PF** ► I HAVE CONTROL .... ANNOUNCE

PF	PM
Reaching V1	► V1 .... ANNOUNCE

CAPT	F/O
► PL 1+2 .....RELEASE	

PF	PM
Reaching VR	► ROTATE .....ANNOUNCE *When $V_1 = V_R$ announce V1/ROTATE.*
► PITCH .... ROTATE SMOOTHLY *Rotate smoothly and follow FD bars.*	
After Liftoff	► POSITIVE CLIMB .... ANNOUNCE
► GEAR UP.....ORDER	► LDG GEAR lever .....UP *Crosscheck that all lights are OFF including overhead panel.* ► YAW DAMPER .....ENGAGE *Check 2 white arrows turn on.* ► TAXI & T.O lights ..... OFF

Figure 7: The take-off procedure

1.18 Additional Information

The investigation involving Bureau d'Enquêtes et d'Analyses (BEA), France as the state of manufacture, the Transport Safety Board (TSB) Canada as state of engine manufacture, and the National Transport Safety Board (NTSB), United States of America as the state of manufactured the powerplant or major components of the aircraft were involved in this investigation. BEA, TSB, and NTSB have appointed accredited representative and advisers to assist the investigation in accordance with the provisions in International Civil Aviation Organization (ICAO) Annex 13.

The investigation is planning to conduct interview to the pilots, engineer on board and relevant personnel of the management.

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.

1.19 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

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 pilots held valid licenses and medical certificates.
2. The aircraft had a valid Certificate of Airworthiness (C of A) and Certificate of Registration (C of R).
3. Prior to the first flight, medical examination consisted of heart rate, blood pressure and body temperature were carried out for all flight crew, and the result no health issues.
4. The occurrence flight was the fourth of six planned flights of the day. The first three flights were uneventful.
5. The Pilot in Command (PIC) acted as Pilot Monitoring (PM) and the Second in Command (SIC) acted as Pilot Flying (PF).
6. The aircraft was operated within the weight and balance envelope.
7. During takeoff, after both power levers advanced to the notch, both engines torque and NP increased as expected. After that, the right engine torque continued increasing to a maximum of 116 percent, while left engine torque remained at 90 percent. At the same time, NP of the right engine dropped to 72 percent while NP of the left engine remained at 100 percent.
8. The aircraft speed continued increasing to about 100 knots, when both pilots realized that the aircraft engines had abnormal condition. The PIC decided to cancel the take-off by retarding the power levers and selected to reverse. The aircraft then veer to the left out of the runway and stop about 1,200 meters from the beginning Runway 28.
9. After the aircraft stopped, the FA waiting for evacuation command from the PIC for 10 seconds but there was no command from the PIC. The FA then decided to evacuate the passenger using all four doors.
10. The aircraft was substantially damage as the result of this accident.
11. Both pilots sustained serious injuries, one flight attendant and 18 passengers had minor injuries.

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

During the investigation, KNKT found the safety issues, Therefore, the KNKT issued safety recommendations to address the safety issues identified in this report.

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 Trigana Air service

04.O-2024-19-1

When the pilot advanced both power levers to the notch, engine torque and NP increased as expected. After that, right engine torque continued increasing to a maximum of 116 percent, while left engine torque remained at 90 percent. At the same time, NP of the right engine dropped to 72 percent while NP of the left engine remained at 100 percent. The pilots did not notice the difference in torque and NP values between the two engines, until the aircraft speed about 100 knots. The takeoff procedure in the FCOM states that the FO must monitor the engine parameters. Failure to monitor the engine parameters during takeoff could lead to unidentified any engine abnormality.

Therefore, KNKT recommends the Trigana Air Service to ensure the take-off procedure is carried out by all pilots.

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