Republic of the Philippines
DEPARTMENT OF TRANSPORTATION
CIVIL AVIATION AUTHORITY OF THE PHILIPPINES
MIA Road, Pasay City 1300

AIRCRAFT ACCIDENT INVESTIGATION AND INQUIRY BOARD

FINAL REPORT

RP-C6198
B300 SKA350I

OPERATOR: CHALLENGER AERO AIR CORPORATION

TYPE OF OPERATION: GENERAL AVIATION

DATE OF OCCURRENCE: JANUARY 17, 2023

PLACE OF OCCURRENCE: RUNWAY 31, NINOY AQUINO INTERNATIONAL AIRPORT, MANILA, PHILIPPINES

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(B300 SKA350i, RP-C6198 Final Report)

FOREWORD

This report was produced by the Aircraft Accident Investigation and Inquiry Board (AAIIB), Civil Aviation Authority of the Philippines, MIA Road, Pasay City, Philippines.

The report is based upon the investigation carried out by the AAIIB in accordance with Annex 13 to the Convention on International Civil Aviation, Republic Act 9497 Section 42, and Philippine Civil Aviation Regulation Part 13.

Readers are advised that the AAIIB investigates for the sole purpose of enhancing aviation safety. Consequently, AAIIB reports are confined to matters of safety significance and may be misleading if used for any other purpose. It should be noted that the information in AAIIB reports and recommendations is provided to promote aviation safety, and in no case is it intended to imply blame or liability.

Furthermore, no part of the AAIIB report or reports relating to any accident or investigation shall be admitted as evidence or used in any suit or action for damages arising out of any matter mentioned in such report or reports.

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FINAL REPORT

TITLE: An incident involving Super king Air B300-350i type of aircraft with Registry Number RP-C6198 operated by Challenger Aero Air Corp., that had a runway excursion event at Runway 31, Ninoy Aquino International Airport, Pasay City, Philippines, on January 17, 2023/1001H.

Notification of Accident to National Authority

The notification of incident to AAIIB CAAP was relayed by the Operator of the aircraft at 1035H (LOCAL) on January 17, 2023.

Identification of the Accident Investigation Authority

The Aircraft Accident Investigation and Inquiry Board (AAIIB), the mandated accident investigation organization within the Civil Aviation Authority of the Philippines (CAAP) as the state of Occurrence/Registry/Operator conducted the investigation.

Organization of the Investigation

In accordance with provisions of Philippine Civil Aviation Regulation (PCAR) Part 13, an Investigator-In-Charge was appointed.

Authority Releasing the Report

The Final investigation report was released by Aircraft Accident Investigation and Inquiry Board (AAIIB) and published on the CAAP website on **16 January 2024.**

Synopsis:

On January 17, 2023, at about 1001H local time, a Super King Air B300-350i type of aircraft with Registry Number RP-C6198, operated by Challenger Aero Air Corporation was on a general aviation flight when it experienced a low-speed runway excursion following a rejected takeoff. Onboard the aircraft were the Pilot-in-Command (PIC), Co-Pilot (CP), and nine (9) other occupants. The aircraft came to a complete stop, with the Nose LDG Gear and RH Main LDG Gear settled in a grassy portion of the runway shoulder while the LH Main LDG Gear was still within the runway pavement of Runway 31. The probable cause of the event was attributed to the failure of the PIC to maintain directional control of the aircraft following a low-speed rejected take-off, leading to runway excursion.

LIST OF ACRONYMS AND ABBREVIATIONS

AAIIB	:	Aircraft Accident Investigation and Inquiry Board
ARFF	:	Aircraft Rescue and Firefighting
CAAP	:	Civil Aviation Authority of the Philippines
CP	:	Co-Pilot
CPL	:	Commercial Pilot License
CRM	:	Crew Resource Management
CVR	:	Cockpit Voice Recorder
FDR	:	Flight Data Recorder
IFR	:	Instrument Flight Rules
IMC	:	Instrument Meteorological Conditions
MIAA	:	Manila International Airport Authority
NAIA	:	Ninoy Aquino International Airport
OFSAM	:	Office of the Flight Surgeon and Aviation Medicine
PF	:	Pilot Flying
PIC	:	Pilot-in-Command
PM	:	Pilot Monitoring
TSIB	:	Transport Safety Investigation Bureau
VFR	:	Visual Flight Rules
VHF	:	Very High Frequency
VMC	:	Visual Meteorological Condition

1. FACTUAL INFORMATION

Aircraft Registration No.	:	RP- C6198
Aircraft Type/Model	:	B300 - SKA350i
Owner	:	Aerospeed, Inc.
Operator	:	Challenger Aero Air Corporation
Address of Operator	:	Andrews Avenue, North General Aviation Area, NAIA Complex, Pasay City, Philippines
Place of Occurrence	:	Runway 31, Ninoy Aquino International Airport (NAIA), Manila, Philippines
Date/Time of Occurrence	:	January 17, 2023 at about 1001H/ 0201 UTC
Type of Operation	:	General Aviation Flight (Non-Revenue)
Phase of Flight	:	Take-Off
Type of Occurrence	:	Runway side excursion

1.1 History of Flight

On January 17, 2023, at about 1001H local time, a Super King Air B300-350i type of aircraft with Registry Number RP-C6198, operated by Challenger Aero Air Corporation was on a general aviation flight when it experienced a low-speed runway excursion following a rejected takeoff. Onboard the aircraft were the Pilot-in-Command (PIC), Co-Pilot (CP), and nine (9) other occupants. During the take-off run, just before the CP could call out "Air Speed Alive," the right-hand propeller suddenly went into feather position, causing the aircraft to veer off to the right side of the runway. The aircraft came to a complete stop, with the Nose LDG Gear and RH Main LDG Gear settled in a grassy portion of the runway shoulder while the LH Main LDG Gear was still within the runway pavement of Runway 31.

While rolling for take-off, the PIC heard the sudden RH propeller's sound as an indication of a decreasing engine power with the propeller's feathering. The PIC immediately responded by aborting the take-off roll. However, the PIC felt that the brakes on his side were weak and commanded the Co-Pilot/ First Officer to assist in applying pressure on the brakes on her side in order to stop the aircraft on the runway. The aircraft continued to veer-off to the right due to its momentum, which led the aircraft to leave the prepared surface of the runway. The aircraft slightly exited the paved surface of Runway 31 and stopped between taxiway F4 and F5, approximately 60 meters from the aircraft's take-off position with coordinates at 14°30'43.0"N 121°00'59.2"E and general heading of 050 degrees.

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Figure 1 – The aircraft at its final resting point.

Figure 2 – The aircraft's visible skid marks going out of the runway.

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Figure 3 – The aircraft was towed to the operator's hangar for further assessment.

1.2 Injuries to Person (s)

Injuries	Crew	Passengers	Others	**TOTAL**
Missing/Fatal	0	0	0	**0**
Serious	0	0	0	**0**
Minor	0	0	0	**0**
None	2	9	0	**11**

1.3 Damage to Aircraft

The aircraft did not sustain any damage.

1.4 Personnel Information

1.4.1 Pilot-In-Command (PIC)

Gender	:	Male
Date of Birth	:	April 23, 1970
Nationality	:	Filipino
License	:	101119-CPL
Valid up to	:	June 30, 2024
Type rating	:	Multi-Engine Land–Instrument-BE-E90, King Air 350.
Medical Certificate Valid up to	:	Class 1 valid until March 16, 2023
Time on Aircraft	:	4,054+24 Hours as per Pilot logbook
Grand Total time	:	4,853+18 Hours as per Pilot logbook

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1.4.2 Co-Pilot (CP)

Gender	:	Female
Date of Birth	:	October 18, 1984
Nationality	:	Filipino
License	:	111945-CPL
Valid up to	:	June 30, 2024
Type rating	:	Multi-Engine Land–Instrument-G550, GV,G350, G450,SKA350.
Medical Certificate Valid up to	:	Class 1 valid until September 22, 2023
Time on Aircraft	:	679+00 Hours as per Pilot logbook
Grand Total time	:	2,562+54 Hours as per Pilot logbook

1.5 Aircraft Information

The King Air 350 is based on the King Air 300 with a 3.4 ft (1.0 m) span increase and winglets, a 2.9 ft (0.88 m) fuselage stretch for an over 17 ft (5.2 m) main cabin, long enough for double club seating. The B300 model is still in production today (now marketed simply as the "King Air 350", the "Super" being dropped in 1996. In October 2008, Beechcraft announced updated versions of the B300 series, the King Air 350i, with improvements to the passenger cabin. The manufacturer claims that the noise level and overall comfort of the King Air 350i, 350iER, 350iC and 350iCER are now competitive with those of light jets. The cabin of the B300 series has been updated with controllers in the passenger seat armrests that dim the LED lights, darken the windows and control an iPod dock and a high-definition video monitor. The cabin also includes Universal Serial Bus (USB) ports, AC electrical receptacles and fold-out tables for each passenger in the eight seats fitted.

1.5.1 Aircraft Data

Registration Mark	:	RP-C6198
Manufacturer	:	Textron Aviation Inc.
Country of Manufacturer	:	Kansas, U.S.A.
Type/Model	:	SKA B300-350i
Owner/Operator	:	Aerospeed, Inc.
Serial No./Line No.	:	FL-394
Date of Manufacture	:	December 2014
Certificate of Airworthiness	:	February 02, 2023 per CAAP O.R. No. 131140 dated January 21, 2022
Certificate of Registration	:	Valid until October 13, 2025 per CAAP O.R. No. 038113 dated October 05, 2020
Category	:	Commuter
Number of Flight Crew	:	2
Number of Passenger	:	9
Airframe total time	:	996.1 Hours since December 2022

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1.5.2 Engine Data

The PT6A-60A engine is used in the Beechcraft Super King Air 300/350 aircraft. This turboprop power-plant delivers 1113 eshp and 1050 eshp for takeoff. The PT6A-60A is a medium size variant in the PT6A family from Pratt and Whitney Canada. The PT6A-60A has the same compressor as the PT6A-41 and a similar PT6A HSI and power section to the PT6A-65 engine series.

Manufacturer	:	Pratt and Whitney Canada Corp.
Type	:	Turbo Prop
Model	:	PT6A-60A
Engine SN#	:	PCE-PK1929 (LH) PCE-PK1932 (RH)
Engine total time	:	996 + 06 Hours (LH) since December 2022 996 + 06 Hours (RH) since December 2022

1.5.3 Propeller Data

Manufacturer	:	Hartzell Propeller Inc.
Type	:	Constant Speed
Model	:	HCB4MP-3C/M10476NSK
Propeller SN#	:	FWA5706 (LH)/ FWA5725 (RH)
Date last Installed	:	November 28, 2019
Propeller total time	:	996 + 06 Hours (LH) since December 2022 996 + 06 Hours (RH) since December 2022

1.6 Meteorological Information

The METAR issued were as follows:

Wind direction is 100 degrees at 4 knots, visibility 8 kilometers, cloud condition: few clouds at 2,500 feet above ground level (AGL), field temperature 27degrees centigrade, dew point 22 degrees centigrade, altimeter settings at 1013 millibars, runway 31 in-use.

1.7 Aids to Navigation

The flight is being conducted through Instrument Flight Rules (IFR). Instrument Flight Rules (IFR) allows aircraft to be flown under Instrument Meteorological Conditions (IMC) by reference to aircraft flight instruments and advanced navigation systems.

1.8 Communications

Normal communications were carried out between Manila Ground and Manila Tower Controllers.

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1.9 Aerodrome Information

The Ninoy Aquino International Airport (NAIA) which was formerly known as Manila International Airport is the airport serving Manila and its surrounding metropolitan area. Located along the border between the cities of Pasay and Parañaque, about 7 kilometers (4.3 mi) south of Manila proper and southwest of Makati. It is managed by the Manila International Airport Authority (MIAA), an attached agency of the Department of Transportation (DOTr).

1.9.1 General Information

Aerodrome Name	:	Ninoy Aquino International Airport - RPLL
ARP coordinates and site at AD	:	14° 30’ 35.78” N. 121° 00’ 49.892” E
Aerodrome Operator address, telephone, telefax,	:	Manila International Airport Authority MIA Road, Pasay City, Metro Manila +632 8771109 Loc 2336 Fax: +632 8331180
Types of traffic permitted	:	IFR-VFR
AD category for fire fighting Rescue Equipment	:	CAT IX. One (1) set Aircraft recovery equipment with lifting capability up to B747 type of AC 171 trained personnel (8) fire trucks (1) 10T wrecker (2) ambulance
Helicopter Landing Area Coordinates	:	14° 30’ 13.6297’’ N 121° 00’ 22.13’’ E
ATS Communication Facilities	:	H24
Operational Frequencies	:	TOWER 118.10Mhz GROUND CONTROL 121.80Mhz RAMP CONTROL 1: 121.70Mhz RAMP CONTROL 2: 128.80Mhz RAMP CONTROL 3: 121.35Mhz DOMESTIC RAMP: 123.25Mhz ACC MANILA CONTROL: 128.30Mhz ATIS: 126.40Mhz CLEARANCE DELIVERY: 125.10Mhz FSS MANILA RADIO: 5447.50Mhz
Airspace classification	:	ATZ-B; CTR-D; TMA-D
Runway Direction	:	13/31 06/24
Runway Length	:	13/31 1911Meters 06/24 3410 Meters
Runway Width	:	13/31 45Meters 06/24 60 Meters
Surface	:	13/31 PCN 65 F/A/W/T CONC+ASPH 06/24 PCN 114 F/D/W/U CONC+ASPH

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1.10 Flight Recorders

The recorders were placed under the custody of the Aircraft Accident Investigation and Inquiry Board (AAIIB), Civil Aviation Authority of the Philippines (CAAP), and sent to Singapore's Transport Safety Investigation Bureau (TSIB) laboratory for read-out and analysis. The AAIIB-CAAP requested assistance from the TSIB to download the aircraft's cockpit voice recorder (CVR) and flight data recorder (FDR) to assist in the investigation. Both recorders were successfully downloaded at the TSIB flight recorder facility.

1.10.1 Cockpit Voice Recorder (CVR)

The aircraft was equipped with a FA2100 cockpit voice recording with part number 2100-1020-00 with Serial Number 001005433. It was manufactured by L3Harris Technologies, Inc. The recording medium has a recording duration of approximately The CVR provided 2 hours of recordings. The quality of the recording is considerably good.

1.10.2 Flight Data Recorder (FDR)

The FDR has part number 2100-2244-00 and Serial number 002034575, and manufactured by L3Harris Technologies, Inc. with a recording duration of approximately 25 hours of flight data.

Note: 1. The FDR factual information was taken from the report provided by TSIB.
2. All times are based on UTC. Each sub frame increases by 1 second.

The recording quality of the FDR data was of good quality. The FDR contained 333195 seconds of synchronized subframes data that included recorded data of the incident flight. The FDR had 77 parameters in the data frame file. The ROSE configuration file "B300 FL-974 V1.frc" provided by the operator was used to convert the FDR data to engineering units.

The aircraft reportedly rejected take-off on Runway 31 of Ninoy Aquino Airport and experience an uncommanded feathering of the right propellers.

For the incident flight, the aircraft heading at 01:59:20 was 313 degrees, consistent with the aircraft lining up on runway 31 in preparation for take-off. Over the next five seconds, the changes to the engine and propeller parameters were:

- Fuel Flow Left – 170 → 500
- Fuel Flow Right – 170 → 530
- Engine ITT Left – 574 → 728
- Engine ITT Right – 590 → 742
- Engine Torque Left – 75 → 1027
- Engine Torque Right – 73 → 1114
- Engine N1 Rpm Left – 62 → 93
- Engine N1 Rpm Right – 61 → 94
- Propeller Rpm Left – 1090→ 1715
- Propeller Rpm Right – 1070 → 1691

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These parameters were maintained over the next eight seconds and the groundspeed increased from 0 kts and reached a maximum value of 19 kts at 01:59:36. During this period, the aircraft heading increased from 314 degrees to 319 degrees, consistent with the nose of the aircraft rotating right.

At 01:59:35, all engine and propeller parameters showed a decreasing trend over the next four seconds.

o Fuel Flow Left – 440 → 180
o Fuel Flow Right – 470 → 190
o Engine ITT Left – 688 → 542
o Engine ITT Right – 712 → 558
o Engine Torque Left – 739 → 41
o Engine Torque Right – 737 → 41
o Engine N1 Rpm Left – 87 → 64
o Engine N1 Rpm Right – 87 → 64
o Propeller Rpm Left – 1691→ 1230
o Propeller Rpm Right – 1690 → 1249

The groundspeed also decreased during this period reaching 0 kts at 01:59:44 while the final aircraft heading was 3 degrees, consistent with a rejected take-off and the aircraft veering right.

The following parameters were not recording in the FDR:

- Condition lever
- Rudder pedal position
- Rudder surface position
- Brake pedal position
- Brake pressure
- Propeller pitch

1.11 Wreckage and Impact Information

After landing, the aircraft departed the runway pavement and veered towards the grassy portion beside the runway. The aircraft slightly exited the paved surface of RWY 31 and stopped between taxiways F4 and F5, approximately 60 meters from the aircraft's take-off position, with coordinates at 14°3043.0 N and 121°0059.2 E and a general heading of 050 degrees (see Figure 5). MIAA Rescue and Firefighting Services immediately responded to help secure the aircraft, and passengers got off normally using the aft cabin door. Upon clearance from CAAP authority, the aircraft was relocated to the CAAC Hangar for further assessment. Initial damage assessment was carried out on the aircraft and found that the Right-Hand auto-feather low-pressure switch failed to de-actuate when activated (see Figure 6).

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Figure 5. Coordinates of the aircraft's final resting point.


Figure 6. Right-Hand Propeller Auto-feather Low-Pressure switch

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1.12 Medical and Pathological Information

The flight crew (2 pilots) and nine (9) passengers on board the aircraft were able to disembark from the aircraft without any serious injury.

Both pilots were subjected to drug tests after the occurrence and were found to have no significant medical findings. They also underwent the post-incident accident medical examination conducted by the Office of the Flight Surgeon and Aviation Medicine (OFSAM). There was no medical impediment on the pilots part that could have had a bearing on this accident.

1.13 Fire

There was no reported post-crash fire during on-site investigation.

1.14 Search and Survival Aspects

After veering off the runway's paved surface, the aircraft came to a complete stop on the grassy portion beside RWY 31. Since the occurrence happened on a major aerodrome, MIAA Aircraft Rescue and Firefighting (ARFF) personnel were able to respond immediately to secure the aircraft, assist the crew and passengers on board.

1.15 Test and Research

Following the runway excursion, the aircraft underwent a brake check IAW AMM 32-40-01 Rev. 3, a brake system troubleshooting and brake wear inspection were performed, and the results reveal that the brakes are within limits. A brake service and bleed were also conducted, with satisfactory results.

An auto-feather operating test was also done in accordance with SKA B300 AMM 61-21-00 REV 3. It was discovered that the right low-pressure switch with PN 50-389121-29 and SN 6336 failed to de-actuate, causing the right engine's propeller to feather. The component was scheduled for replacement.

On the other hand, the following are the results of the work carried out (unscheduled inspection) by Jet Aviation on February 23, 2023 (in compliance with Beechcraft King Air 300 series PN 130-590031-11: Revision C3, Revision Date: October 15, 2020):

1. 61-01 Carried out autofeather system components (autofeather low pressure switch, auto ignition/ autofeather high pressure switch and autofeather solenoid dump valve), wiring checked. Carried out auto feather system functional test. Tested Satisfactory.

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2. 72-01 Carried out verification/ assessment of RH Engine for possible over torque. The FDR read out does not show an over torque or that the engine went into feather.
3. 72-02 Carried out engine ground performance check. Found Satisfactory.
4. 61-01 Blended out "nicks" on RH Propeller Blade IAW Hartzell Propeller Owner's Manual 139 Charter 61-00-39 Rev, 18 March 2021.

1.16 Organizational and Management Information

Aerospeed, Inc. is a San Miguel Corporation subsidiary. Aerospeed, Inc. owns the SKA B300-350i with the register number RP-C6198, which was operated at the time of the incident by Challenger Aero Air Corporation, which is also a subsidiary of San Miguel Corporation.

2.0 ANALYSIS

2.1 General

On January 17, 2023, at about 1001H local time, while rolling for takeoff, the PIC of the Super King Air B300-350i type of aircraft with registry number RP-C6198 heard the sudden RH propeller's sound as an indication of decreasing engine power with the propeller's feathering. The PIC immediately responded by aborting the takeoff roll. However, the PIC felt that the brakes on his side were weak and commanded the Co-Pilot to assist in applying pressure to the brakes on her side in order to stop the aircraft on the runway. The aircraft continued to veer off to the right due to its momentum, which led the aircraft to slightly leave the prepared surface of RWY 31, with its Nose LDG Gear and RH Main LDG Gear settled in a grassy portion of the runway shoulder while the LH Main LDG Gear was still within the runway pavement.

2.2 Weather Conditions during Take-off

The METAR issued were as follows:

Wind direction is 100 degrees at 4 knots, visibility is 8 kilometers, cloud condition is few clouds at 2,500 feet above ground level (AGL), field temperature is 27 degrees centigrade, dew point is 22 degrees centigrade, altimeter settings are 1013 millibars, and runway 31 is in use. Manila Tower reported wind calm upon query of the CP while lining up at the active runway; hence, weather was generally not a factor in the incident.

2.3 Flight Operations

2.3.1 Taxiing:

At 01:48:27 UTC while taxiing at golf one, the PIC was heard saying "the brakes are weak" followed by saying "why is it hard to depress" at 01:48:30 UTC. The CP was heard saying "it is hard again" and the PIC replied "yes".

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At 01:48:35 UTC the PIC again heard saying “the brakes have weak grip” and the CP answered “but the pedals are hard to depress”. At 01:48:40, the PIC mentioned “it’s hard or maybe I am just used to soft” followed by “I think it is normal, I have flown this for a long time”. The CP acknowledged by saying “yes we have not flown for a long time”.

Based on the PIC’s judgment, it was just his feeling since he had not flown the aircraft for quite some time, and he commented that he was just used to aircraft with soft brake pedals. The PIC was then aware that the aircraft’s brakes were weak on his side. But he never asked his CP to perform brake checks as well. The PIC disregarded the potential problem with the aircraft’s brake system and opted to continue the flight.

2.3.2 Take-Off Run

Prior to initial take-off roll, the PIC and CP performed the before take-off final items checklist. After the completion of the procedures, the PIC mentioned to the CP to be on the lookout for eighty (80) percent initial power.

At 01:59:20 UTC, the aircraft heading was recorded at 313 degrees, consistent with the aircraft lining up on runway 31 in preparation for take-off. Over the next five seconds, the changes to the engine and propeller parameters, including left engine N1 RPM and right engine N1 RPM that reached values of 93 percent and 94 percent, respectively (Figure 7). These parameters were maintained over the next eight seconds, and the groundspeed increased from 0 kts to a maximum value of 19 kts at 01:59:36. During this period, the aircraft heading increased from 314 degrees to 319 degrees, consistent with the nose of the aircraft rotating right (Figure 8).

At 01:59:32 UTC, a suspected system sound was heard followed by the PIC calling "abort take-off, abort take-off at 01:59:39 UTC. At 01:59:43 UTC, the PIC mentioned "no brakes". At 01:59:44 UTC the groundspeed decreased reaching 0 kts. The final aircraft heading was 3 degrees, consistent with a rejected take-off and the aircraft veering right. The aircraft came to a complete stop with the Nose LDG Gear and RH Main LDG Gear settled in a grassy portion of the runway shoulder while the LH Main LDG Gear was still within the runway pavement of RWY 31.

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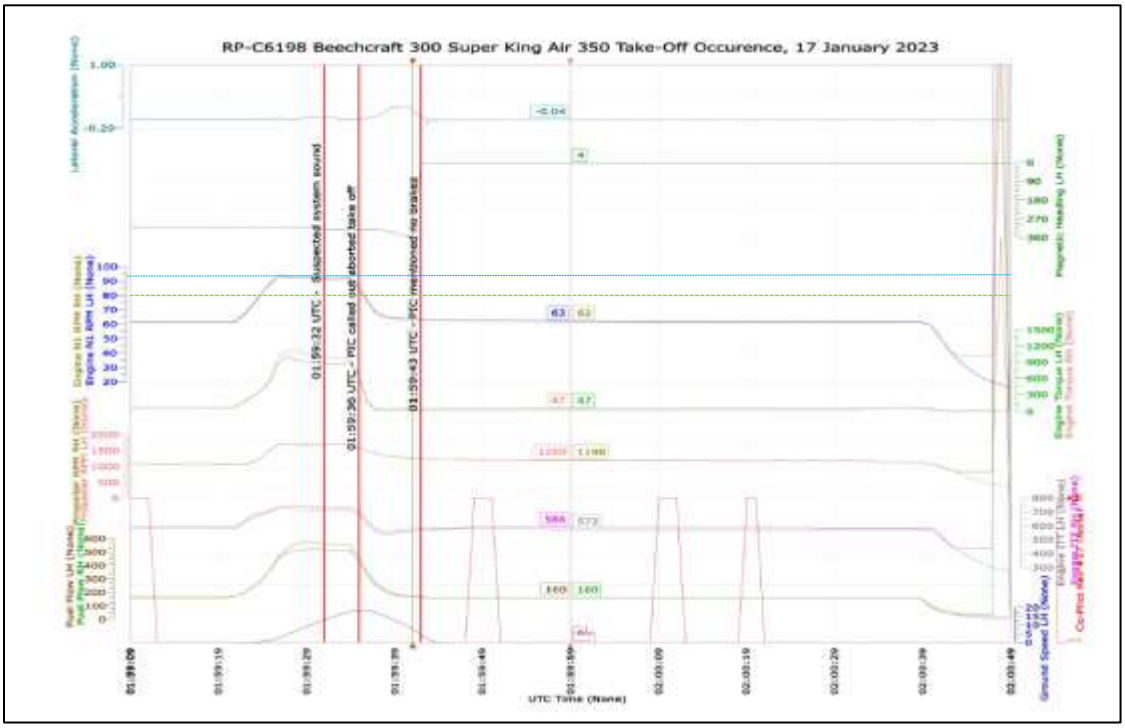

Figure 7. FDR data with CVR events, depicting 80% engine RPM - dotted green horizontal line; left engine N1 RPM and right engine N1 RPM that reached values of 93% and 94%.

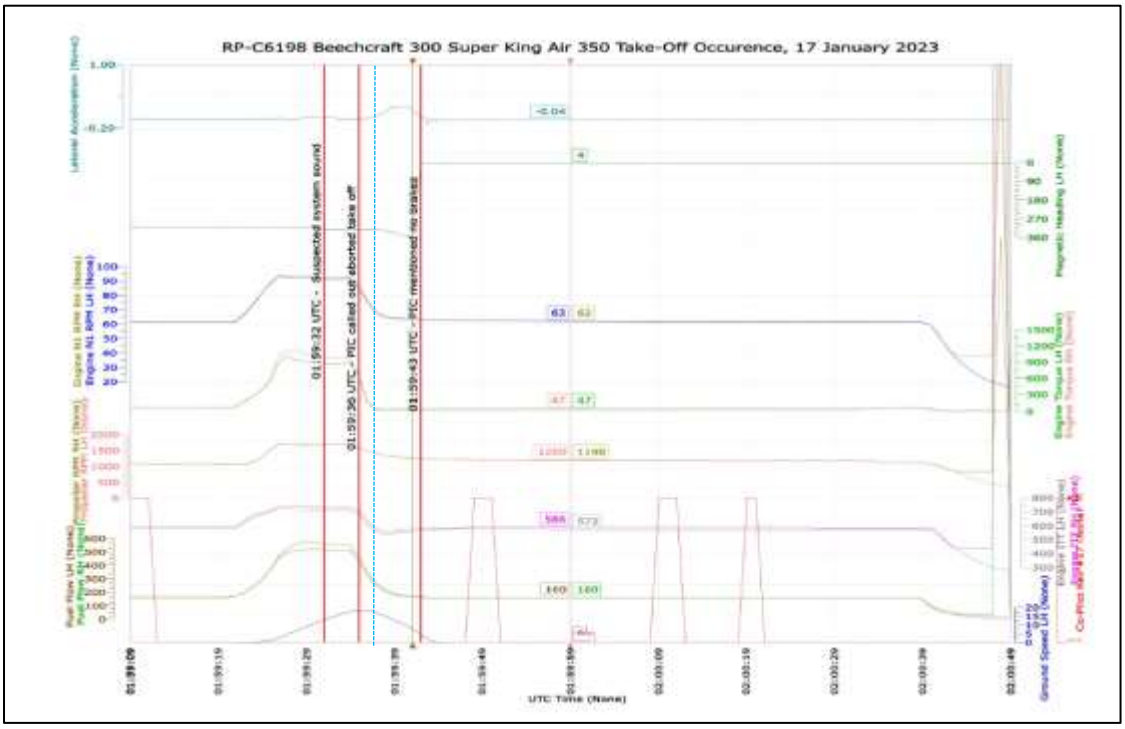

Figure 8. FDR data with CVR events, depicting the start of the aircraft's veering-off or lateral movement to the right - dotted blue vertical line.

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2.3.3 Aircraft recovery:

The airport air traffic was immediately suspended on RWY 13/31 by NAIA Control Tower, at about 02:00:24 UTC. MIAA-ARFF was dispatched to the scene of occurrence. All the passengers safely deplaned the aircraft and were transported back to the air operator's hangar without any reported injuries. CAAP-AAIIB was notified and immediately activated a team to proceed to the incident site. After performing the initial evidence gathering procedures at RWY 13/31, the aircraft was towed back to hangar at 02:01:31 UTC for further investigation. The airport resumed its normal operation at about 1051H/ 0251 UTC.

2.4 Crew Action Prior to the Event

While taxiing from G11 to the runway, the PIC noticed a problem with the brakes. The PIC mentioned the brake's discrepancies three times. On the other hand, the CP acknowledges the discrepancies mentioned by the PIC. However, the CP did not suggest any action to resolve the discrepancy. Both members of the flight crew decided to continue the flight. They initiated the take-off run, followed by an aborted take-off. After the aircraft came to a complete stop, the PIC again mentioned no brakes, which was acknowledged by the CP.

The PIC mentioning the brake problem multiple times indicates that he was concerned about the safety of the flight. The CP's acknowledgment of the discrepancy is a positive step, as it shows that she is aware of the issue. It is important in situations like this for the flight crew to follow established procedures and protocols. If there's a known problem with the brakes, it might be necessary to stop the aircraft, conduct a thorough assessment of the issue, and potentially consult maintenance personnel to determine the appropriate course of action. However, the PIC opted to continue the flight, ignoring and downplaying the safety concerns. Reporting and correcting identified discrepancies before the start of every flight is a fundamental aspect of aviation safety. This process is essential for ensuring that the aircraft is in an airworthy condition and that potential issues are addressed before they can impact the safety of the flight.

The co-pilot's failure to suggest any course of action to resolve the discrepancy indicates a breakdown in communication or decision-making within the cockpit. Effective communication and teamwork are critical to ensuring the safety of the flight. The flight crew should work together to address any safety concerns and make decisions that prioritize the well-being of the passengers, crew, and the aircraft. Addressing communication breakdowns and improving decision-making processes is crucial in ensuring safe flight operations. This incident highlights the importance of crew resource management (CRM), a concept in aviation that emphasizes effective communication, teamwork, and decision-making skills among the flight crew members to enhance safety.

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2.5 Aircraft Brake System

The aircraft's brake system is a critical component during low-speed aborted takeoffs. In fact, the brake system is essential during any phase of flight where the aircraft needs to be stopped or decelerated, regardless of the speed. During a low-speed aborted takeoff, the aircraft is still in a phase where it can be safely stopped on the runway. The brake system plays a vital role in ensuring that the aircraft can be brought to a halt quickly and safely.

The brake system's effectiveness and reliability are critical for ensuring the safety of the flight and the passengers on board. Any discrepancies, malfunctions, or concerns related to the brake system should be treated with the utmost seriousness, and the flight crew should follow established procedures to address these issues and make the necessary decisions to ensure the safety of the aircraft and its occupants.

The brake system inspection carried out after the event did not reveal any significant findings. The results of the brake wear inspection and brake system bleeding were all satisfactory. While taxiing on G11, the PIC commented that the brakes were weak. The PIC also mentioned that the brakes are hard to depress and attributed it to being accustomed to another aircraft, which he frequently flies with softer brakes. It appears that the brakes were not actually failing, but rather the feel of the brake pedals was different from what the PIC was accustomed to. While it's not a brake failure in the traditional sense, it's crucial for pilots to communicate any differences they experience with the aircraft's systems to ensure safe operations which in this case they did not do. Lastly, the absence of flight data recorder parameters for brake pedal position and brake pressure poses a challenge when trying to analyze and understand the behavior of the brakes during rejected takeoff.

3.0 CONCLUSION

3.1 Findings

a. Both Pilots were qualified on the SKA B300-350i type of aircraft and possess a valid medical certificate issued by the CAAP.
b. The aircraft was properly released for flight without any discrepancies noted on its logbook.
c. The aircraft has a valid Certificates of Airworthiness and Registration.
d. The aircraft was equipped with FDR and CVR.
e. Brake pedal position and brake pressure were not recorded in the FDR.
f. The right low-pressure switch failed to de-actuate causing the propeller of the right engine to feather.

3.2 Probable Cause

3.2.1 Primary Cause Factor

a. Failure of the PIC to maintain directional control of the aircraft following a low-speed rejected take-off, leading to runway excursion.

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3.2.2 Contributory Cause Factor

a. The PIC's decision to continue the flight despite the discovery of brake system discrepancies from the initial taxi for departure.
b. The CP's failure to suggest any corrective action to resolve the brake system discrepancy.

4.0 SAFETY RECOMMENDATIONS

4.1 CAAP-FSIS to ensure that:

4.1.1 The operator establishes safety protocols to ensure aircraft discrepancies are reported and corrected before the start of every flight.

4.1.2 The Operator develop a CRM training designed to enhance teamwork, communication and decision-making for flight crew to prevent CRM failure.

-END-

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