



**KOMITE NASIONAL KESELAMATAN TRANSPORTASI
REPUBLIC OF INDONESIA**

PRELIMINARY

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Aircraft Serious Incident Investigation Report

PT. Wings Abadi Airlines

ATR72-212A 600 Series; PK-WHY

Pattimura International Airport, Ambon

Republic of Indonesia

03 July 2020

2020

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 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.

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Jakarta, 4 September 2020

**KOMITE NASIONAL
KESELAMATAN TRANSPORTASI
CHAIRMAN**



SOERJANTO TJAHHJONO

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ABBREVIATIONS AND DEFINITIONS

AOC	: Airline Operator Certificate
ATCo	: Air Traffic Control Officer
ATPL	: Airline Transport Pilot License
ATR	: Avions de Transport Regional
BEA	: Bureau d'Enquêtes et d'Analyses pour la Sécurité de l'Aviation Civile
BMKG	: <i>Badan Meteorologi Klimatologi Geofisika</i> / Meteorological Climatological and Geophysics Agency
BPCU	: Bus Power Control Unit
CPL	: Commercial Pilot License
CSN	: Cycle Since New
CVR	: Cockpit Voice Recorder
DC	: Direct Current
DGCA	: Directorate General of Civil Aviation of Indonesia
DU	: Display Unit
EGPWS	: Enhance Ground Proximity Warning System
FDR	: Flight Data Recorder
IESI	: Integrated Electronic Standby Instrument
ILS	: Instrument Landing System
KNKT	: Komite Nasional Keselamatan Transportasi
LT	: Local Time
NFF	: No Fault Found
PF	: Pilot Flying
PIC	: Pilot in Command
PM	: Pilot Monitoring
SIC	: Second in Command
TSN	: Time Since New
UTC	: Universal Coordinated Time
VHF	: Very High Frequency

SYNOPSIS

On 03 July 2020, an ATR 72-212A 600 Series aircraft registration PK-WHY was being operated on scheduled passenger flight by PT. Wings Abadi Airlines (Wings Air). The schedule flight route was from Pattimura Airport (WAPP), Ambon of Maluku to Babo Airport, Teluk Bintuni Residence of West Papua. The flight was the third flight of four schedule flights for the day on routes Ambon – Babo – Ambon – Babo – Ambon and stop.

On board of the IW 3544 flight was 2 pilots, 1 flight attendant and 49 passengers. In this flight the Pilot in Command (SIC) acted as Pilot Flying (PF) and the Second in Command (PIC) acted as Pilot Monitoring (PM).

At 0400 UTC (1300 LT) the aircraft took off and after aircraft airborne, the pilot verified the Idle Gate lever engaged. Suddenly all 5 Display Units (DU) and the Integrated Electronic Standby Instrument (IESI) went blank and all of the Very High Frequency (VHF) radios were off. The landing gear could not be selected to up. The pilot flew the aircraft visually.

After about 1 minute, the pilot heard communication on the radio and the DUs were intermittently recovered. The cross marks (X) appeared on the indicator of speed and altitude on DU 1, DU 5 and IESI. The landing gear lever could be selected to up. The engine set from takeoff power to climb power and the pilot continued with performing after takeoff check list including retracted the flap and maintained speed at 170 knots.

The pilot attempted to land followed the ILS approach procedure and the weather deteriorated and made go around. The flight held over AUDRI for about 90 minutes at 7,000 feet and continued for 20 minutes at 5,000 feet waited for weather improvement.

After the weather improved the aircraft landed safely at 0600 UTC. No one injured in this occurrence and the aircraft was undamaged.

At the time of issuing this preliminary report, the KNKT had been informed safety action taken by the The Directorate General of Civil Aviation (DGCA) of Indonesia to share the information of the occurrence and to increase the awareness of the ATR aircraft operators.

At the time of the issuance of this preliminary report, the investigation had not enough information to prevent the similar case to be occurred in the future, therefore KNKT keep in contact with aircraft manufacturer and for the time being, KNKT recommends PT. Wings Abadi Airlines to maintain communication and to obtain the necessary information from the aircraft manufacturer to mitigate the situation.

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.

The Bureau d'Enquêtes et d'Analyses (BEA) participate in this investigation and assigned Accredited Representatives of the State of Manufacturer. The ATR also participate in this investigation as adviser to BEA Accredited Representatives.

1 FACTUAL INFORMATION

1.1 History of the Flight

On 03 July 2020, an ATR 72-212A 600 Series aircraft registration PK-WHY was being operated on scheduled passenger flight by PT. Wings Abadi Airlines (Wings Air) with flight number IW 3544 from Pattimura Airport (WAPP), Ambon¹ of Maluku with intended destination of Babo Airport, Teluk Bintuni Residence of West Papua. The flight was the first flight of four schedule flights for the day on routes Ambon – Babo – Ambon – Babo – Ambon and stop. The first two flights were normal.

On the third flight Ambon to Babo, on board the flight were two pilots, one flight attendant and 49 passengers. In this flight the Pilot in Command (PIC) acted as Pilot Flying (PF) and the Second in Command (SIC) acted as Pilot Monitoring (PM).

The starting process of both engines was normal then the aircraft taxied and line up runway 22 of Ambon. At 0400 UTC² (1300 LT³) the aircraft took off and after airborne the pilot verified the Idle Gate lever engaged. Suddenly all 5 Display Units (DU) and the Integrated Electronic Standby Instrument (IESI) went blank and all of the Very High Frequency (VHF) radios were off. The landing gear could not be selected to up.

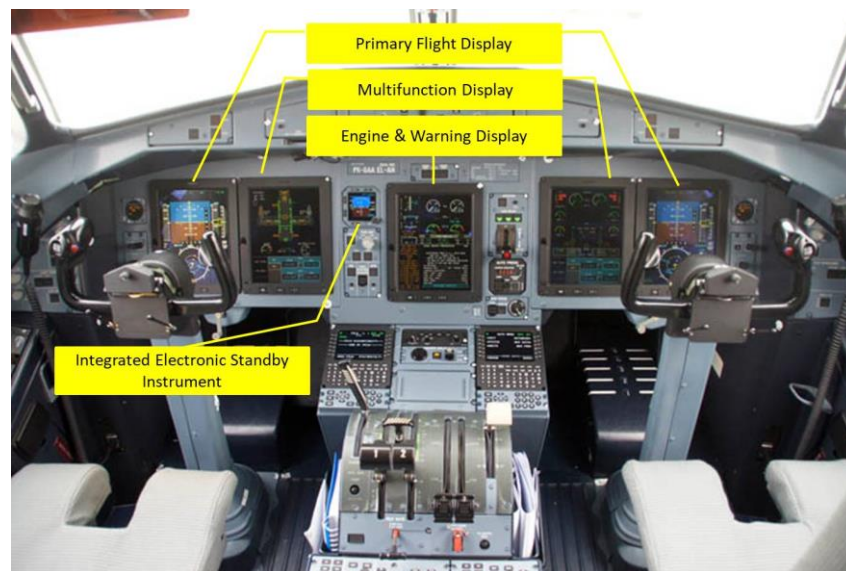


Figure 1: ATR 72-212A 600 Series Glass Cockpit

The pilot glanced to the overhead panel and saw several lights illuminated consisted of the SHED light on the DC SVCE/UTLY BUS⁴, the AVAIL (available) light on the EXT PWR (external power) push buttons, pack, lavatory detection and engine boost.

1 Pattimura Airport, Ambon of Maluku will be named as Ambon for the purpose of this report.

2 The 24-hour clock used in this report to describe the time of day as specific events occurred is in Universal Coordinated Time (UTC).

3 Local time for Ambon is Eastern Indonesia Standard Time (Waktu Indonesia Timur - WIT) or UTC + 9.

4 DC SVCE/UTLY BUS (DC service and utility bus) push button is a controls connection or disconnection of DC SVCE BUS (DC service bus) and both UTLY BUSSES (utility bus) to associated main DC BUSSES. The SHED illuminates amber and the Flight Warning System (FWS) will active when a load shed condition controlled by the BPCU is present and at least one UTLY BUS is disconnected from associated main DC BUS.

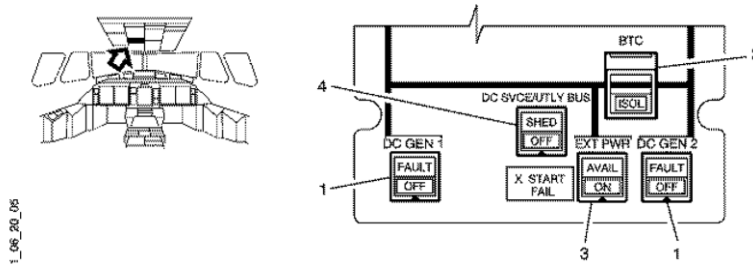


Figure 2: DC Service/Utility Bus and External Power push button

The weather during this situation was raining and the ground visibility was 6 km. The pilot did not have flight instruments as reference for flight, therefore the pilot flew visually.

After about 1 minute, the pilot heard communication on the radio and the DUs were intermittently recovered. The cross marks (X) appeared on the indicator of speed and altitude on DU 1, DU 5 and IESI. The pilot noticed differences of speed about 20 knots and the altitude about 200 feet.

When the aircraft altitude about 3,000 feet the landing gear lever could be selected to up. The engine set from takeoff power to climb power and the pilot continued with performing after takeoff check list including retracted the flap and maintained speed at 170 knots. Few moments later, the cross marks on the speed and altitude indicators disappeared, the AVAIL light, PACK and lavatory detection lights extinguished.

The pilot communicated with the Air Traffic Controller Officer (ATCo) and requested to climb to altitude 4,000 feet and to hold at point AUDRI for problem identification. After made 3 holding patterns at point AUDRI and considering the flight instruments condition had been recovered, the pilot decided to return to Ambon and requested to the ATCo for landing clearance. The ATCo provided instruction for landing approach and informed that the visibility was 4 km.

The aircraft performed landing approach followed the Instrument Landing System (ILS) procedure. At aircraft altitude about 1,000 feet the visibility degraded to 800 meters and the pilot decided to go around as the visibility below minima for landing.

The ATCo vectored the pilot to return to point AUDRI and instructed to climb 7,000 feet due to two aircraft were holding at point AUDRI. The pilot held at point AUDRI for about 90 minutes waited for weather improvement.

After the weather had improved, one of the aircraft started to make approach and landing and the pilot was instructed by the ATCo to descend to 5,000 feet. During holding at point AUDRI, the Enhanced Ground Proximity Warning System (EGPWS) warning “TERRAIN AHEAD, PULLED UP” activated. The pilot aware that there was no terrain around point AUDRI as it was located over the sea and the visual condition showed no terrain near the aircraft and the pilot ignored the warning.

As instructed by the ATCo, the pilot made holding at point AUDRI for about 20 minutes at altitude about 5,000 feet due to another aircraft that was holding at 4,000 feet.

When the visibility had improved to 5 km, after landing clearance available the aircraft approached and landed safely at 0600 UTC. No one injured in this occurrence and no further damage to the aircraft.

1.2 Personnel Information

1.2.1 Pilot in Command

Gender : Male
Age : 29 years
Nationality : Indonesia
Marital status : Married
Date of joining company : 22 October 2012
License : ATPL
 Date of issue : 10 June 2020
 Aircraft type rating : ATR 72 500/600
Instrument rating validity : 30 June 2021
Medical certificate : First Class
 Last of medical : 9 March 2020
 Validity : 9 September 2020
 Medical limitation : None
Last line check : 24 April 2020
Last proficiency check : 10 June 2020

Flying experience

Total hours : 5,691 hours 20 minutes
Total on type : 5,691 hours 20 minutes
Last 90 days : 54 hours 30 minutes
Last 30 days : 16 hours 55 minutes
Last 7 days : 3 hours 25 minutes
Last 24 hours : 3 hours 25 minutes
This flight : 2 hours

1.2.2 Second in Command

Gender : Male
Age : 27 years
Nationality : Indonesia
Marital status :
Date of joining company : 24 November 2014
License : CPL
 Date of issue : 11 September 2019

Aircraft type rating : ATR 72 500/600
Instrument rating validity : 30 September 2020
Medical certificate : First Class
Last of medical : 29 June 2020
Validity : 29 December 2020
Medical limitation : None
Last line check : 6 April 2016
Last proficiency check : 11 September 2019

Flying experience

Total hours : 4,152 hours 10 minutes
Total on type :
Last 90 days : 23 hours 30 minutes
Last 30 days : 23 hours 30 minutes
Last 7 days : 3 hours 25 minutes
Last 24 hours : 3 hours 25 minutes
This flight : 2 hours

1.3 Aircraft Information

1.3.1 General

Registration Mark : PK-WHY
Manufacturer : Avions de Transport Regional (ATR)
Country of Manufacturer : France
Type/Model : ATR72-212A 600 Series
Serial Number : 1442
Year of Manufacture : 4 August 2017
Certificate of Airworthiness
Issued : 14 August 2019
Validity : 13 August 2020
Category : Transport
Limitations : None
Certificate of Registration
Number : 3971
Issued : 19 February 2019
Validity : 13 August 2020

Time Since New : 5,460 hours 39 minutes
 Cycles Since New : 6,165
 Last Major Check : C-01 on 6 July 2019 at TSN 3,655 hours 48 minutes and CSN 4,182 cycles.
 Last Minor Check : On 2 April 2020 at 5,193 hours 19 minutes and CSN 5,971 cycles.

On 6 July 2020, PT. Wings Abadi Airlines informed the Komite Nasional Keselamatan Transportasi (KNKT) that the PK-WHY aircraft was grounded and the maintenance conducted the trouble shooting related to the electrical problem appeared on the aircraft. The result was No Fault Found (NFF).

1.4 Meteorological Information

The *Badan Meteorologi Klimatologi dan Geofisika* (BMKG – Bureau of Meteorology, Climatology and Geophysics) provided enhanced infrared satellite images. The enhanced infrared satellite images at 0400 UTC (1200 LT) up to 0450 UTC (1250 LT) indicated that the cloud top temperature at the area (red circle) was from -21 up to -41°C as shown below.

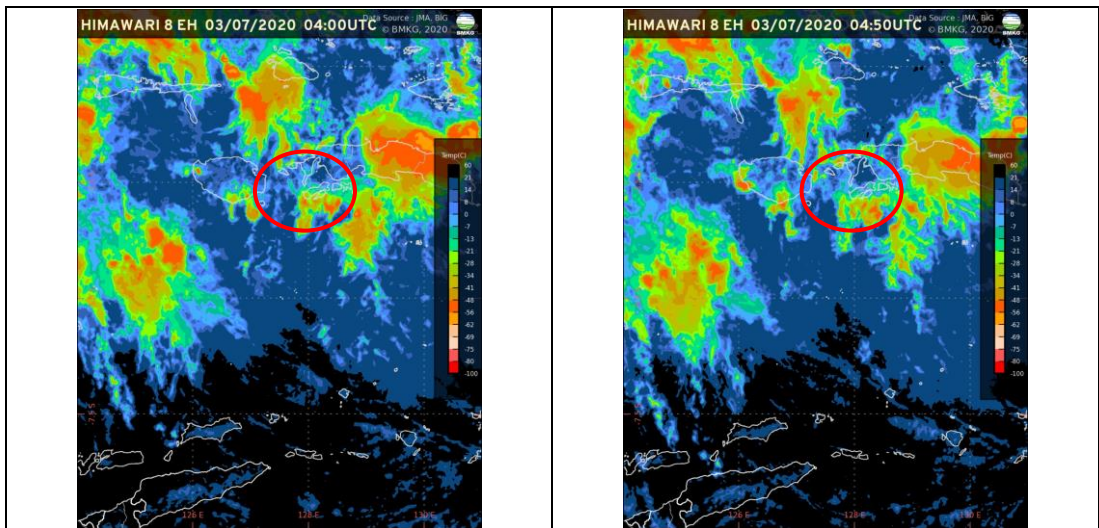


Figure 3: The cloud temperature at the area occurrence

The cloud type at 0400 UTC (1200 LT) up to 0500 UTC (1300 LT) as shown in the figure below (red circle), indicated that the low cloud with the potential of rain over the area.

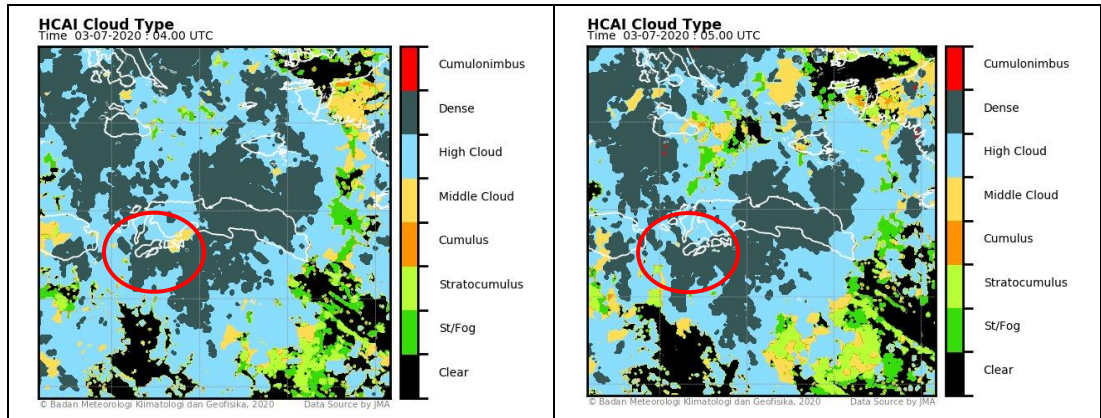


Figure 4: The cloud type at the area of occurrence

1.5 Aids to Navigation

The relevant navigation aid information will be included in the Final Report.

1.6 Communications

The relevant communication information will be included in the Final Report.

1.7 Aerodrome Information

Airport Name	: Pattimura
Airport Identification	: WAPP
Airport Operator	: PT. Angkasa Pura I
Coordinate	: 03° 42' 27" S; 128° 05' 22" E
Elevation	: 33 feet
Runway Direction	: 04/22
Runway Length	: 2,500 meters
Runway Width	: 45 meters
Surface	: Asphalt

1.8 Flight Recorders

The aircraft was fitted with Flight Data Recorder (FDR) manufactured by L3 Aviation Recorders with part number 2100-4045-00 and serial number 001215076.

The aircraft was fitted with Cockpit Voice Recorder (CVR) manufactured by L3 Aviation Recorders with part number 2100-1225-22 and serial number 001220868.

Both FDR and CVR have been transported to KNKT recorder facility for data download process. The data of both flight recorders have been retrieved. The detail information of flight recorders will be included in the final report.

1.9 Tests and Research

Several components as listed below were sent to the manufacturer for detail examination.

No.	Part Description	Part number	Serial number
1	Push button switch	845UN01A4ACOA	no serial number
2	Bus Power Control Unit (BPCU)	105.003.2	2453
3	Contactor Bus	SM150D19	no serial number
4	Resistor/Base	E0564301	no serial number
5	Relay	E02428AU	no serial number

The result of this examination and any test and research result will be discussed in the Final Report.

1.10 Organizational and Management Information

PT. Wings Abadi Airlines (Wings Air) which has address on Jalan A.M. Sangaji No. 17 Jakarta Pusat, Indonesia. The aircraft operator has valid Air Operator Certificate (AOC) number 121-012. The Wings Air was operating 20 ATR 72-500 aircraft and 44 ATR 72-600 aircraft.

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.

The Bureau d'Enquêtes et d'Analyses (BEA) participate in this investigation and assigned Accredited Representatives of the State of Manufacturer. The ATR also participate in this investigation as adviser to BEA Accredited Representatives.

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.

2 FINDINGS⁵

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

1. The pilots held the current license and medical examination.
2. The engines were operated normally throughout of the flight.
3. After the aircraft airborne, the aircraft experienced electrical system problem indicated by all 5 Display Units (DU), the Integrated Electronic Standby Instrument (IESI) went blank all VHF radios were off and the landing gear could not be selected to up.
4. The weather was raining and visibility varied between 800 meters to 6 km.
5. The aircraft continued climb visually and about one minute after, the DUs were intermittently recovered. The cross marks (X) appeared on the indicator of speed and altitude on DU 1, DU 5 and IESI. The pilot noticed differences of speed about 20 knots and the altitude about 200 feet. The landing gear could be selected up.
6. The pilots decided to return to Ambon and made landing approach followed the ILS procedure. At the aircraft altitude about 1,000 feet, the weather deteriorated and the pilot decided to make go around.
7. The aircraft held at point AUDRI at 7,000 feet for about 90 minutes waited for weather improvement.
8. The aircraft then descend to 5,000 feet and made holding at point AUDRI. While holding the EGPWS warning “TERRAIN AHEAD, PULLED UP” activated. The pilot aware that there was no terrain around point AUDRI as it was located over the sea and the visual condition showed no terrain near the aircraft and the pilot ignored the warning.
9. As instructed by the ATCo the pilot made holding at 5,000 feet at point AUDRI for about 20 minutes due to traffic.
10. After the visibility improved to 5 km the aircraft landed safely at Ambon Airport.
11. No one injured in this occurrence and no further damage to the aircraft.

⁵ 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.

3 SAFETY ACTION

At the time of issuing this Preliminary Report, the Komite Nasional Keselamatan Transportasi (KNKT) had been informed of safety actions resulting from this occurrence.

3.1 Directorate General of Civil Aviation (DGCA)

The Directorate General of Civil Aviation (DGCA) of Indonesia held a meeting with all ATR aircraft operators in Indonesia to share the information of the occurrence and to increase the awareness of the aircraft operators.

4 SAFETY RECOMMENDATIONS

At the time of the issuance of this preliminary report, the investigation had not enough information to prevent the similar case to be occurred in the future, therefore KNKT keep in contact with aircraft manufacturer and for the time being, KNKT recommends PT. Wings Abadi Airlines to maintain communication and to obtain the necessary information from the aircraft manufacturer to mitigate the situation.

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