Republic of the Philippines
CIVIL AVIATION AUTHORITY OF THE PHILIPPINES

AIRCRAFT ACCIDENT INVESTIGATION AND INQUIRY BOARD

FINAL REPORT

RP-C8612
A320-214

OPERATOR: AIR PHILIPPINES CORPORATION DBA AIR PHIL EXPRESS; PAL EXPRESS AND PHILIPPINE AIRLINES

TYPE OF OPERATION: SCHEDULED COMMERCIAL

DATE OF OCCURRENCE: JULY 12, 2024

PLACE OF OCCURRENCE: ZAMBOANGA INTERNATIONAL AIRPORT, ZAMBOANGA CITY, PHILIPPINES

TABLE OF CONTENTS
(RP-C8612, A320-214 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.

FINAL REPORT

TITLE: Incident involving an A320 type of aircraft with Registry Number RP-C8612 owned and operated by PAL Express that had an undershooting incident at RWY 27, Zamboanga International Airport, Zamboanga City, Philippines, on July 12, 2024/1505H

Notification of Accident to National Authority

The Notification of incident to AAIIB CAAP was relayed by the Operator of the aircraft at 1530H (LOCAL) on July 12, 2024.

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 and Deputy Investigator-In Charge were appointed.

Authority Releasing the Report

The Final investigation report was released by Aircraft Accident Investigation and Inquiry Board (AAIIB) and published at the CAAP website on 06 January 2025.

Synopsis:

On July 12, 2024, at about 1505H, an A320 type of aircraft with registry number RP-C8612 operated by PAL Express had an undershooting incident at RWY 27 in Zamboanga International Airport, Zamboanga City, Philippines. The six (6) crew and 180 passengers did not sustain any injuries; however, the aircraft sustained minor damage as a result of the incident. An Instrument Meteorological Condition (IMC) prevailed at the time of the incident. The cause of the occurrence was attributed to the pilot in command's decision to continue to land without adequate visibility of the runway aim point, which resulted in an undershoot landing.

LIST OF ACRONYMS AND ABBREVIATIONS

AAIIB	:	Aircraft Accident Investigation and Inquiry Board
AGL	:	Above Ground Level
AOC	:	Air Operator Certificate
ATC	:	Air Traffic Control
ATPL	:	Airline Transport Pilot License
CAAP	:	Civil Aviation Authority of the Philippines
COA	:	Certificate of Airworthiness
COR	:	Certificate of Registration
CRM	:	Crew Resource Management
CVR	:	Cockpit Voice Recorder
DH	:	Decision Height
FDR	:	Flight Data Recorder
FO	:	First Officer
FREQ	:	Frequency
IMC	:	Instrument Meteorological Condition
MDA	:	Minimum Descent Altitude
MHZ	:	Megahertz
MLG	:	Main Landing Gear
MZ	:	Mike Zulu
NOTAMS	:	Notice to Airmen
OFSAM	:	Office of Flight Standard and Aeromedical
PALEX	:	PAL Express
PF	:	Pilot Flying
PIC	:	Pilot-In-Command
PM	:	Pilot Monitoring
RPMZ	:	Zamboanga International Airport
RWY	:	Runway
TSIB	:	Transport Safety Investigation Bureau
UTC	:	Coordinated Universal Time
VFR	:	Visual Flight Rules

1. FACTUAL INFORMATION

Aircraft Registration No.	:	RP-C8612
Aircraft Type/Model	:	A320-214
Operator	:	Air Philippines Corporation *Dba* Air Phil Express; PAL Express and Philippine Airlines
Address of Operator	:	R-1 Hangar, APC Gate 1, Andrews Avenue, Nichols, Pasay City
Place of Occurrence	:	Zamboanga International Airport (RPMZ) Zamboanga City, Philippines
Date/Time of Occurrence	:	July 12, 2024/1505H
Type of Operation	:	Scheduled Commercial
Phase of Flight	:	Landing
Type of Occurrence	:	Undershoot

1.1 History of Flight

On or about 1505H, July 12, 2024, an A320 type of aircraft with Registry Number RP-C8612 had an undershooting incident at RWY 27 in Zamboanga International Airport, Zamboanga City, Philippines. The six (6) crew and 180 passengers did not sustain any injuries, however the aircraft sustained minor damage as a result of the incident. The aircraft was operated by PAL Express. An Instrument Meteorological Condition (IMC) prevailed at the time of the incident.

The PIC, who is the Pilot Flying (PF), made a go-around during their first approach at RWY 27 due to lack of visual contact with the runway. On their second approach, upon touchdown, they heard a thud and continued their landing roll. The aircraft made a 180-degree turn and was then taxied towards

MIA Road, Corner Ninoy Aquino Avenue, Pasay City, Philippines, 1300
+632 8246 4988 | opcen@caap.gov.ph | https://caap.gov.ph

the ramp to disembark the passengers normally. The crew was advised by the duty traffic controller that the aircraft hit the runway end lights. During the flight crew's visual inspection, it was observed that the main landing gear tires #2 and #3 had visible signs of scrapped tires. Meanwhile, the duty traffic controller, who had observed the undershooting landing incident, called up the ARFF to conduct a runway inspection at the end of RWY27. Upon inspection, scattered pieces of rubber from aircraft tires, broken runway end lights fixtures, and a displaced channel bar were found 99 meters before the threshold of RWY27.

Figure 1 - RP-C8612 at the ramp after the incident.

1.2 Injuries to Person (s)

Injuries	Crew	Passengers	Others	TOTAL
Fatal	0	0	0	0
Serious	0	0	0	0
Minor	0	0	0	0
Missing	0	0	0	0

1.3 Damage to Aircraft

The aircraft sustained damaged on MLG #2 and #3 tires, minor dent on left hand wing inboard flaps and left-hand wing shroud box assembly bottom and sloping skin.

MIA Road, Corner Ninoy Aquino Avenue, Pasay City, Philippines, 1300
+632 8246 4988 | opcen@caap.gov.ph | https://caap.gov.ph

Figure 2 - Damaged MLG #2 & #3 tires.

1.4 Other Damages

The displaced channel bar and two (2) broken runway end lights.

Figure 3 - Damaged Runway End Lights Fixtures.

1.5 Personnel Information

1.5.1 Pilot-In-Command (PIC)

Gender	:	Male
Date of Birth	:	06 July 1968
Nationality	:	Philippines
Civil Status	:	Married
License Type	:	105608-ATPL
Date Issued	:	29 April 2024

Type Rating	:	Airplane: Multi- Engine Land: A320/321
Medical Certificate Validity	:	25 September 2024
Total Flying Time	:	17,938+34 Hour
Total Flying Time on type	:	12,317+06 Hours

1.5.2 First Officer (FO)

Gender	:	Male
Date of Birth	:	18 April 1976
Nationality	:	Philippines
Civil Status	:	Married
License Type	:	101337-ATPL
Date Issued	:	14 March 2023
Type Rating	:	Airplane: Multi-Engine: B777-300ER, A320/321
Medical Certificate Validity	:	30 September 2024
Total Flying Time	:	8,588+41 Hour
Total Flying Time on type	:	423+59 Hours

1.6 Aircraft Information

1.6.1 Aircraft Data

Registration Mark	:	RP-C8612
Manufacturer	:	Airbus
Type/Model	:	A320-214
Operator	:	Air Philippines Corporation/PAL Express
Serial No.	:	3553
Certificate of Airworthiness Valid up to	:	July 17, 2024
Certificate of Registration Date of Issue	:	July 10, 2029
Time Since New	:	42,575.05 Hours as July 17, 2024

1.6.2 Engine Data

Manufacturer	:	CFMI
Type	:	Turbo Fan
Type/Model	:	CFM56
Serial No.	:	(#1) 699152 (#2) 697863

MIA Road, Corner Ninoy Aquino Avenue, Pasay City, Philippines, 1300
+632 8246 4988 | opcen@caap.gov.ph | https://caap.gov.ph

Time Since New	:	(#1) 29,985+25 Hours as of July 17, 2024 (#2) 42,575+05 Hours as of July 17, 2024

1.7 Meteorological Information

An Instrument Meteorological Condition (IMC) prevailed during the incident. At 0713Z, the weather data during the event was wind 260 15knots, QNH1006, Temp 26, ceiling 4000 and visibility 6000m.

1.8 Aids to Navigation

As of April 16, 2024, all pilots were notified of the updates regarding the displacement of Zamboanga Airport's (RPMZ) RWY 27 based on the set of NOTAMs published by CAAP. Furthermore, landing at RPMZ RWY 27 will be limited to VFR operations only. NOTAMs for reference, which includes the suspension of RWY 27 PAPI lights, RNP RWY 27, VOR Y RWY 27, and VOR Z RWY 27 approach procedures.

1.9 Communications

Zamboanga Tower 123.5MHZ PRI FREQ.
118.1MHZ Back-up FREQ.
124.0MHZ A/G FREQ.
6795KHZ P/P PRI FREQ
Zamboanga Network-24 Hours
4454KHZ P/P SRY FREQ.
121.5MHZ EMERG Monitoring FREQ.
Zamboanga Approach 122.7MHZ

1.10 Aerodrome Information (AIP)

1.10.1 General

Aerodrome	:	Zamboanga International Airport
Coordinates	:	065520.7109N 1220334.6860E
Elevation	:	9.913M (32.523Ft.)
Airport Operator	:	Civil Aviation Authority of the Philippines Zamboanga International Airport

MIA Road, Corner Ninoy Aquino Avenue, Pasay City, Philippines, 1300
+632 8246 4988 | opcen@caap.gov.ph | https://caap.gov.ph

		Baliwasan Moret, Zamboanga City Tel. No. (062) 991-1394/991-035
Runway Direction	:	09/27
Runway Length	:	2,609M
Runway Width	:	44M
Surface	:	PCN 46 F/B/W/T CONC + ASPH (Overlay)
Slope	:	0.16%Uphill towards THR27

1.11 Flight Recorders

1.11.1 General

The recorders are placed under the custody of the Aircraft Accident Investigation and Inquiry Board (AAIIB), Civil Aviation Authority of the Philippines (CAAP), and were sent to the Singapore Transport Safety Investigation Bureau (TSIB) laboratory for readout and analysis on August 5 to 8, 2024. The AAIIB-CAAP requested assistance from the Singapore TSIB to download the aircraft's cockpit voice recorder (CVR) and flight data recorder (FDR) to assist in the investigation. This activity was performed by TSIB recorder specialists, and both recorders were successfully downloaded at the Singapore TSIB data recovery facility. All data recovered from the recorders were provided to the AAIIB to assist with their Annex 13 investigation.

1.11.2 Cockpit Voice Recorder (CVR)

The Solid-State Cockpit Voice Recorder (SSCVR) with serial number CVR-3309 and part number 980-6022-001 was manufactured by Honeywell Avionics and was capable of recording continuously at least the last 120 minutes of radiotelephone communication and cockpit/interphone conversation. The SSCVR has four channels: Channel 1 for the Captain audio panel, Channel 2 for the First Officer audio panel, Channel 3 for additional crew, and Channel 4 for Cockpit Area Microphone (CAM). The Honeywell Solid State Cockpit Voice Recorder utilized a modular crash survivable memory unit (CSMU) for protection of the solid-state voice recording memory. The CSMU retains the most recent 30 or 120 minutes of audio, digital, and timing information. This model was equipped with Underwater Locator Beacon. The audio information was extracted from the CVR normally without difficulty. The quality of the audio was characterized as good. A summary of the voice recording was interpreted, and a transcript was prepared starting at 01:28:04, where a remark was

MIA Road, Corner Ninoy Aquino Avenue, Pasay City, Philippines, 1300
+632 8246 4988 | opcen@caap.gov.ph | https://caap.gov.ph

heard saying “it is seen” and ending at 2:01:41 when a remark of “make a thumbs up if it is okay” was heard.

1.11.3 Digital Flight Data Recorder (DFDR)

The aircraft was likewise equipped with a Honeywell Digital Flight Data Recorder (FDR), serial number 9059, and part number 980-47-00-042. The exterior of the DFDR showed no physical damage during the process. The FDR did not show any technical problems with the aircraft, i.e., all engine-related parameters were functioning normally, there were no Master Caution or Master Warning alerts during the take-off, climb, cruise, and descent phases of flight, and the flight control surface movements were in line with the inputs provided in the cockpit. A number of parameters recorded of key interest were available. Such parameters include pitch angle, vertical speed, radio height, throttle lever position, and pressure altitude. The recording quality of the FDR was of good quality. It contained 95512 seconds of synchronized subframes, approximately 26.5 hours, that included recorded data of the incident flight.

1.12 Wreckage and Impact Information

After the event, the flight deck crew inspected the aircraft for damages. The inspection disclosed the scrapping of the Main Landing Gear #2 and #3 tires. Further, ocular inspection by the investigators and PAL maintenance personnel revealed that there were scratches and dents on the lower portion of the left wing adjacent to Left Main Landing Gear (LMLG) that required further analysis from Airbus. Overall, the aircraft incurred minor damage.

1.13 Medical and Pathological Information

The Flight Deck Crew underwent a drug test at St. Luke’s Medical Center Global City, Taguig, on 15 July 2024, with negative results. Additionally, both pilots reported to OFSAM on July 17, 2024, for a post-medical examination. The OFSAM reported that no further medical examination is required.

1.14 Fire

There was no post fire reported after the serious incident.

MIA Road, Corner Ninoy Aquino Avenue, Pasay City, Philippines, 1300
+632 8246 4988 | opcen@caap.gov.ph | https://caap.gov.ph

1.15 Survival Aspects

The serious incident was survivable since no injuries were reported among the flight crews and passengers. The passengers disembarked normally from the ramp.

1.16 Test and Research

The damage report on the shroud box assembly was sent to Airbus, requesting repair instructions. Airbus provided temporary repair procedures in Dossier ref: 81434121. An engineering order was issued to document the temporary repair performed on the LH wing shroud box assembly and sloping skin in accordance with the instruction of Airbus RDAF ref. 81434121/003/2024#A.

1.17 Organizational and Management Information

The Air Philippines Corporation *Dba* Air Phil Express; PAL Express and Philippine Airlines is a holder of an Air Operator Certificate (AOC) number 2009006 valid to operate up to 14 October 2025, and is authorized to perform commercial air operations, as defined in the attached Operations Specifications, in accordance with the Operations Manual and PCAR Part 9 series of 2008. RP-C8612, an A320-214 aircraft model is included in the list of authorized aircraft for commercial operations.

2.0 ANALYSIS

2.1 General

This incident involves an A320 type of aircraft with Registry Number RP-C8612 that had an undershooting landing incident at RWY 27 in Zamboanga International Airport, Zamboanga City, Philippines. The aircraft sustained minor damage as a result of the incident. An Instrument Meteorological Condition (IMC) prevailed at the time of the incident. The flight took off from Ninoy Aquino International Airport, Manila, bound for Zamboanga International Airport.

MIA Road, Corner Ninoy Aquino Avenue, Pasay City, Philippines, 1300
+632 8246 4988 | opcen@caap.gov.ph | https://caap.gov.ph

The Pilot in Command (PIC) was the pilot flying (PF), while the First Officer (FO) was the pilot monitoring (PM) during the event. The aircraft was fully configured for landing and in a position to execute a safe landing. The descent and approach were uneventful, apart from the limited visibility and low clouds encountered during the course of the descent for the approach. The PIC revealed that the aircraft made a go-around during their first approach at RWY 27 due to no visual on the runway. On their second approach, upon touchdown, they heard a thud and continued their landing roll. The aircraft made a 180-degree turn and was then taxied towards the ramp to disembark the passengers normally. The duty traffic controller informed the crew that the aircraft had collided with the runway end lights.

2.2 Flight Crew

A review was made of the available pilot's records and was able to establish the following:

a. The two (2) pilots were trained and qualified to operate the aircraft in accordance with Civil Aviation Authority of the Philippines (CAAP) PCAR Part 2, Part 9 Regulations.

b. The interview of both pilots did not disclose any issue on their physical capability to man their flight last July 12, 2024. The occurrence flight was their first flight for that day.

c. The PIC has a total time of 17,938+34 Hour and 12,317+06 Hours on type of aircraft while the FO has a total time of 8,588+41 Hour and 423+59 Hours on type of aircraft before the incident.

d. The flight crew completed the following scheduled trainings:

Training	Date Completed	
	PIC	FO
Line/ Proficiency Check	June 14, 2024	June 17, 2024
Recurrent Simulator Training	June 15, 2024	June 18, 2024

2.3 Operations

2.3.1 First Approach RWY 27

During the first approach, based on CVR 06:58:53 to 07:13:59 UTC, the ATC advised the flight deck crew to descend to traffic altitude and report on final, for landing. However, the aircraft executed a go-around due to lack of visual contact with the runway, after which it informed ATC that they were turning inbound and would attempt to make another approach. The PIC informed the FO that this will be their last approach and will return to the station if they cannot land.

Meanwhile, the flight data readout indicates that at 07:04:20 UTC, as the aircraft approach Runway 27 of Zamboanga International Airport at 1,457 feet above ground level (AGL), both the Pitch Go-around and Roll Go-around Track Engaged modes transitioned from “not active” to “active”. The recorded throttle lever position for Engines 1 and 2 increased from 24.96 degrees (for both engines) to 44.65 and 45 degrees, respectively (see Figure 4).

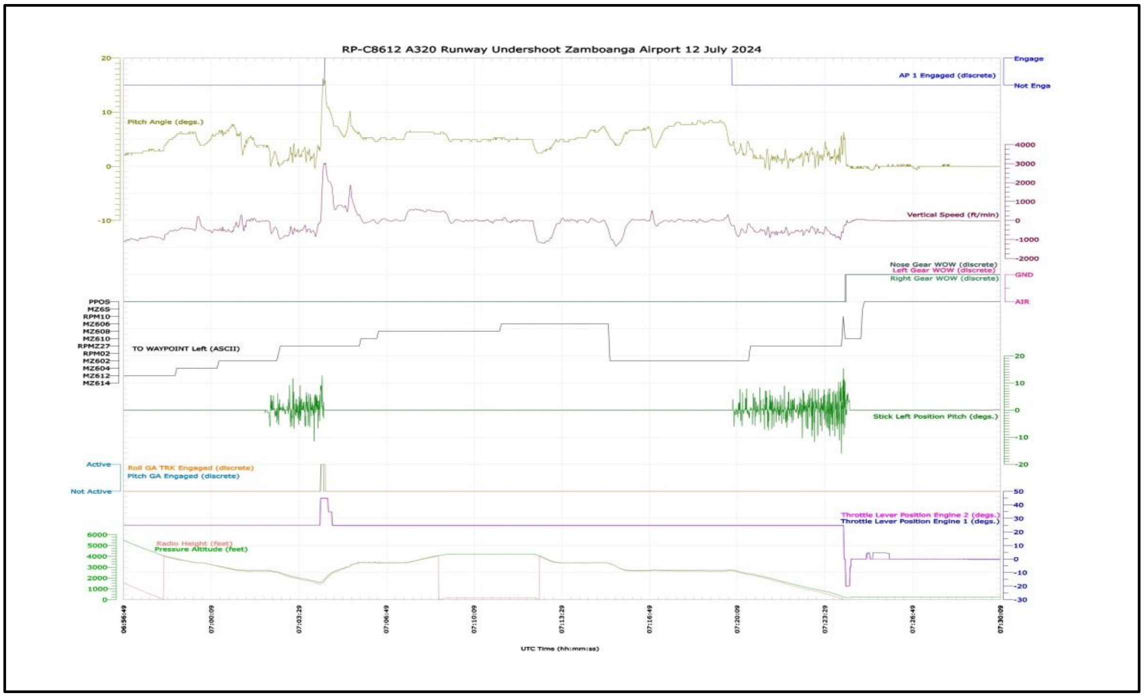

Figure 4 - FDR read-out data

Moreover, the auto pilot 1 was engaged at 07:04:29 UTC when the aircraft was 1,746 feet AGL. For the next approximately 16 minutes, the aircraft appeared to follow the missed approach procedure as the active TO Waypoints during these 16 minutes are as follows:

Time	Active TO Waypoint
07:05:51	MZ610
07:06:31	MZ608
07:11:11	MZ 606
07:15:19	MZ602

MIA Road, Corner Ninoy Aquino Avenue, Pasay City, Philippines, 1300
+632 8246 4988 | opcen@caap.gov.ph | https://caap.gov.ph

2.3.2 Second Approach RWY 27

During the second approach, based on CVR 07:22:41 to 07:22:58 UTC, at an altitude of 1,200ft, the aircraft was sighted by the ATC. After the flight deck crew confirmed runway on sight, the ATC then cleared the aircraft to land. The crew was also cautioned of the displaced threshold by eight hundred meters and wet runway which was affirmed by the FO. (Figure 5).

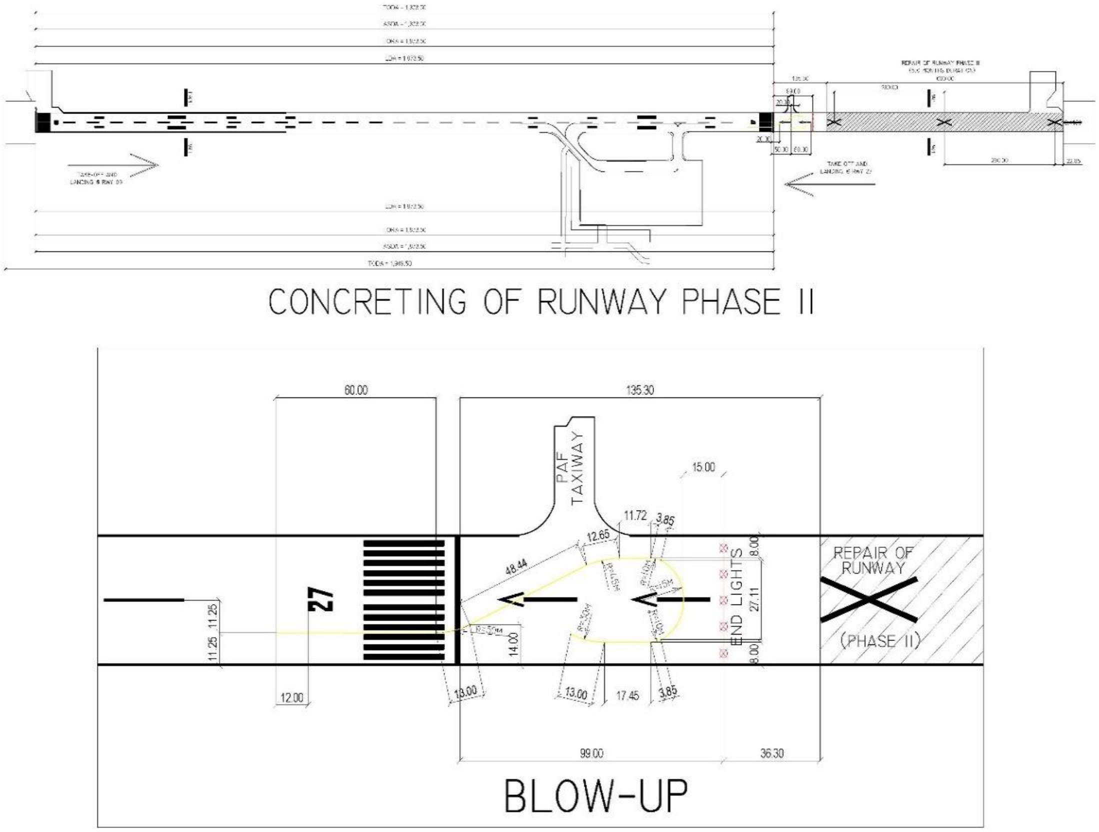

Figure 5 - Layout of the displaced RWY 27 threshold.

2.3.3 Ground Contact before RWY 27

Based on the CVR from 07:23:06 to 07:32:47 UTC, after passing 600 ft, the PIC asked the FO to confirm the threshold as viewed. The FO responded by stating that the threshold has moved forward and is now displaced. As they continued with their approach, PIC and FO repeatedly discussed the displaced threshold. Upon landing, the PIC heard the sound of the landing gear striking something on the ground, prompting the FO to confirm this once the aircraft was on the tarmac. Likewise, ATC advised the flight deck crew that the aircraft hit the runway end lights. Upon reaching the tarmac, the FO disembarked the aircraft, inspected it, and informed the PIC that the tires had collided with something at the runway's end, later confirmed to be the runway end lights.

2.4 Crew Resource Management

Crew Resource Management (CRM) is a management system that makes optimum use of all available resources for flight crew to promote safety and enhance the efficiency of flight operations. CRM is not only with the technical knowledge and skills required to fly and operate an aircraft but rather with the cognitive and interpersonal skills needed to manage the flight. In this context, cognitive skills are defined as the mental processes used for gaining and maintaining situational awareness, for solving problems, and for taking decisions. Interpersonal skills are regarded as communications and a range of behavioral activities associated with teamwork.

In this incident flight, the flight crew was in adherence to SOPs on their descent preparation and approach briefings. The flight crew had fully configured the aircraft for landing and was prepared to execute a safe landing. During the first approach at RWY 27, the aircraft made a go-around after the PIC was heard saying, "Go around, flaps," due to limited visibility and low clouds encountered during the course of the descent for the approach.

During the second approach, the FO was heard saying, "One thousand two hundred, on profile," and "Runway on sight." The ATC then cleared the aircraft to land and was cautioned of the displaced threshold by eight hundred meters and wet runway". The displacement of Zamboanga Airport's RWY 27 was based on the set of NOTAMs published by CAAP as of April 16, 2024. Furthermore, landing at RWY 27 was limited to VFR operations only. Moreover, after passing 600 feet, the wiper was put on due to rain. In the course of the investigation, it was revealed that the markings of the displaced threshold were not clearly visible and ambiguous due to the wet runway, and the PIC resorted to asking the FO the location of the threshold. Apparently, the PIC has no visual reference of the threshold. On the part of the FO, when asked about the threshold, his response was "forward more, sir" (4x), and after reaching minimum, his reply was "forward of the cemented portion, sir." This was followed by the response from the PIC, "Is that the intersection?" and the response of the FO was, "Yes sir, it is the narrow intersection on the right." The PIC then said, "The first is my target." The FO replied," Yes, sir, I have seen the runway lights edge" and the PIC responded, "Yes, the cemented portion.".

The transition from instrument flight to visual flight during an instrument approach can be very challenging, especially during low visibility operations. The decision to land or go around must be made at minimum descent altitude

MIA Road, Corner Ninoy Aquino Avenue, Pasay City, Philippines, 1300
+632 8246 4988 | opcen@caap.gov.ph | https://caap.gov.ph

(MDA)/decision height (DH) at the latest. The PIC should use caution when transitioning to a visual approach when adequate visibility may not exist for the runway aim point. According to the Airbus A320 Flight Crew Training Manual (Normal Operations Go-Around), failure to recognize the need for and to execute a go-around, when required, is a major cause of approach and landing accidents. Because a go-around is an infrequent occurrence, it is important to be "go-around minded." The decision to go around should not be delayed, as an early go-around is safer than a last-minute one at lower altitude. Consideration about go-around is shown below (Figure 6). If a decision to continue has been made at DH and the visual references become insufficient, a go-around must be initiated. The flight crew must consider performing a go-around if inadequate visual references are not obtained at minima or lost below minima, there is a loss and/or a doubt about situational awareness.

CONSIDERATION ABOUT GO-AROUND

Applicable to: ALL

Ident.: PR-NP-SOP-260-A-00019603.0001001 / 28 NOV 17

DECISION MAKING

The flight crew must consider to perform a go-around if:
- There is a loss or a doubt about situation awareness, or
- There is a malfunction which jeopardizes the safe completion of the approach e.g. major navigation problem, or
- ATC changes the final approach clearance resulting in rushed action from the crew or potentially unstable approach, or
- The approach is unstable in speed, altitude, or flight path in such a way that stability is not obtained by 1 000 ft AAL in IMC or (500 ft AAL in VMC), or is not maintained until landing, or
- Any of the following alerts occur:
  - GPWS, or
  - TCAS, or
  - Windshear, or
  - ROW alerts for the relevant runway condition. Refer to AS-ROWROP Operating Techniques.
- Adequate visual references are not obtained at minima or lost below minima.

Ident.: PR-NP-SOP-260-A-00019604.0001001 / 05 MAR 19

GO-AROUND NEAR THE GROUND

The PF must not initiate a go-around after the selection of the thrust reversers. If the PF initiates a go-around, the flight crew must complete the go-around maneuver.

If the flight crew performs a go-around near the ground, they should take into account the following:
- The PF should avoid excessive rotation rate, in order to prevent a tailstrike. For more information *Refer to PR-NP-SOP-250 Tail Strike Avoidance*
- A temporary landing gear contact with the runway is acceptable.

Figure 6 - Airbus FCTM go-around reference.

Furthermore, the conversation captured in the CVR revealed a decline in verbal communication among the flight crew prior to the aircraft touchdown. This breakdown in CRM made it difficult to determine the appropriate course of action at the critical decision point. Both used nonstandard and ambiguous phraseology. It seems that the FO was transmitting one thing, and the PIC may have understood something else. The crew should seek clarification if

MIA Road, Corner Ninoy Aquino Avenue, Pasay City, Philippines, 1300
+632 8246 4988 | opcen@caap.gov.ph | https://caap.gov.ph

they are uncertain about the message they have transmitted and received. There was no call out on the FO of the unstable approach. The FO must exercise his assertiveness as well as procedural compliance when deciding to go-around below the stabilized approach gate in order that safe execution is not prejudiced by an inappropriate delay in the decision. Monitoring is ineffective if the PM does not announce anything about observed deviations from the stabilized approach criteria.

In order to achieve and maintain a stabilized approach, pilots must be constantly aware of each of the required parameters throughout the approach. A 'callout' is required if either pilot observes a deviation from the specified limits of the stabilization criteria or a deviation from the Standard Operating Procedures (SOPs). If the deviation has been observed first by the PF, his callout advises the PM that he is aware and attempting to correct; if observed by the PM, his callout will bring the pilot flying attention to the deviation. The routine use of callouts in this manner improves communication and enhances situational awareness through the approach. It is recommended that callouts should not be limited to a single occasion at the initial deviation but should continue at reasonable intervals until the deviation is corrected. The repeated callouts ensure continuing awareness until the undesirable condition has been corrected.

2.5 Action taken at RWY 27 after site investigation

After the incident, Zamboanga International Airport management repaired the channel bar and replaced the broken end lights (Figure 7). The displaced runway threshold and other runway markings were repainted to mitigate similar incident in the future (Figure 8 & 9).

Figure 7 - Runway end lights being replaced.

MIA Road, Corner Ninoy Aquino Avenue, Pasay City, Philippines, 1300
+632 8246 4988 | opcen@caap.gov.ph | https://caap.gov.ph

Figure 8 - Runway 27 being painted.

Figure 9 - Repainted RWY 27 displaced threshold and other markings after the incident.

3.0 CONCLUSIONS

3.1 Findings

3.1.1 Both pilots' licenses and medical certificates were valid in accordance with PCAR Part 2.

3.1.2 Both pilots were trained and qualified to operate the aircraft in accordance with PCAR Part 2 and Part 9 Regulations.

3.1.3 Both pilots had an updated training proficiency.

3.1.4 The FO did not assert any call out during the landing process.

3.1.5 The aircraft collided and damaged the runway 27 end lights upon landing.

3.1.6 No injuries were recorded on the 186 occupants on board the aircraft.

3.1.7 The flight recorders were sent to TSIB, Singapore for read-out and analysis.

3.1.8 The passengers disembarked normally from the ramp after the serious incident.

3.1.9 The RPMZ runway 27 is limited to VFR landing only.

3.1.10 The runway markings were repainted after the incident for visibility to mitigate further incident.

MIA Road, Corner Ninoy Aquino Avenue, Pasay City, Philippines, 1300
+632 8246 4988 | opcen@caap.gov.ph | https://caap.gov.ph

3.2 Probable Cause

3.2.1 Primary Cause Factor

a. The decision of the pilot in command to land without adequate visibility of the runway aim point that led to an undershoot landing.

3.2.2 Contributory Factors

a. There was a breakdown of crew resource management between pilots.
b. The pilot monitoring failed to make the required callouts during an unstabilized approach.

4.0 SAFETY RECOMMENDATIONS

4.1 Following the completion of the safety investigation, the Aircraft Accident Investigation and Inquiry Board proposes the following safety recommendation to the CAAP-FSIS:

a. To ensure that the operator, PALEX, must strictly adhere to the go-around procedures during an unstable approach during landing.
b. To ensure that the operator, PALEX, reviews the policy on the pilot's crew resource management and flight path monitoring capability during high-workload situations.
c. To ensure that the operator, PALEX, strengthens procedures on common understanding of communication between crewmembers.
d. To ensure that the operator, PALEX, reinforces the policy on the responsibility of monitoring pilots to challenge deviations.

----END----

MIA Road, Corner Ninoy Aquino Avenue, Pasay City, Philippines, 1300
+632 8246 4988 | opcen@caap.gov.ph | https://caap.gov.ph