

## FINAL INVESTIGATION REPORT



### **SERIOUS INCIDENT – AIR BLUE FLIGHT ABQ-613, AIRBUS 320 AIRCRAFT, REG NO AP-EDA, BACHA KHAN INTERNATIONAL AIRPORT, PESHAWAR ON 23-04-2019**

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## **SCOPE**

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This report contains facts which have been determined up to the time of publication. Such information is published to inform the aviation industry and the public about the general circumstances of civil aviation accidents and incidents.

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## ABBREVIATIONS

<b>AAIB</b>	Aircraft Accident Investigation Board
<b>AGL</b>	Above Ground Level
<b>AP</b>	Auto-Pilot
<b>APU</b>	Auxiliary Power Unit
<b>ATA</b>	Actual Time of Arrival
<b>ATC</b>	Air Traffic Control
<b>ATIS</b>	Automatic Terminal Information Service
<b>BASI</b>	Bureau of Aircraft Safety Investigation
<b>BKIAP</b>	Bacha Khan International Airport
<b>CB</b>	Cumulonimbus
<b>ETA</b>	Estimated Time of Arrival
<b>FCTM</b>	Flight Crew Training Manual
<b>ICAO</b>	International Civil Aviation Organization
<b>ILS</b>	Instrument Landing System
<b>NIDDM</b>	Non-Insulin Dependent Diabetes Mellitus
<b>PAPI</b>	Precision Approach Path Indicator
<b>RNAV</b>	Area navigation
<b>ROD</b>	Rate of Descent
<b>R/W</b>	Runway
<b>SWY</b>	Stopway
<b>TOD</b>	Top of Descent
<b>TSRA</b>	Thunderstorm Rain
<b>UAE</b>	United Arab Emirates
<b>UTC</b>	Universal Time Coordinated
<b>VOR</b>	Very high frequency Omni-directional Range
<b>OMSJ</b>	Sharjah International Airport

## INTRODUCTION

This serious incident was reported to Bureau of Aircraft Safety Investigation (BASI), Pakistan previously known as Aircraft Accident Investigation Board (AAIB), Pakistan by Chief Operations Officer (COO) Bacha Khan International Airport (BKIAP), Peshawar<sup>1</sup>. Ministry of Aviation, Government of Pakistan issued Memorandum and Corrigendum<sup>2</sup> authorizing BASI Pakistan to investigate the serious incident. Initial notification<sup>3</sup> of the incident was sent to International Civil Aviation Organization (ICAO), Bureau of Enquiry and Analysis (BEA), France. All corresponding timings are mentioned in Coordinated Universal Timings (UTC).

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<sup>1</sup> PCAA COO BKIAP Telex No. BKIAP/1302-01/020/PSAT dated 23<sup>rd</sup> April, 2019

<sup>2</sup> Memorandum dated 25<sup>th</sup> April, 2019 and Corrigendum

<sup>3</sup> ICAO Initial Notification dated 25<sup>th</sup> April, 2019

## SYNOPSIS

Airblue flight ABQ-613 Airbus 320 aircraft Reg. No. AP-EDA was a scheduled passenger flight from Sharjah International Airport (OMSJ), Sharjah, United Arab Emirates (UAE) to BKIAP, Peshawar. The aircraft departed from OMSJ, UAE as per plan at 11:40 hours (h) with 174 passengers and 06 crew members on board. Estimated Time of Arrival (ETA) at BKIAP, Peshawar was 14:28 h; however, the landing was delayed with Actual Time of Arrival (ATA) as 14:31 h. While approaching to land after executing Instrument Landing System (ILS) Approach for Runway (R/W) 35, the aircraft encountered tail wind as well as wet R/W conditions. The aircraft touched down 4,448 feet (ft) after the Threshold with AUTO BRAKE LO selected. Auto braking along with Thrust reverse was used to slow down the aircraft; however, the deceleration was insufficient. The Captain subsequently switched to manual braking and used maximum brakes but could not stop the aircraft on the R/W. The aircraft finally came to a stop on the Stopway (SWY) after crossing the R/W threshold. There were no injuries to any person onboard; however, the aircraft sustained damage to Tyres and Engine fan blades.

## **SECTION 1 - FACTUAL INFORMATION**

## 1.1 History of the flight

1.1.1. Airblue flight ABQ-613 Airbus 320 aircraft Reg. No. AP-EDA was a scheduled flight from SHJ, Sharjah to BKIAP, Peshawar. There was no abnormality reported in the aircraft prior to departure which could affect its landing performance. The cockpit crew was adequately experienced and the aircraft loading was carried out within limits. The aircraft departed from OMSJ, Sharjah, UAE at 11:40 h with take-off and enroute flight being uneventful. There were a total of 174 passengers and 06 crew members onboard the aircraft. For the flight, the Captain was Pilot Flying (PF) while the First Officer (FO) was Pilot Monitoring (PM). While approaching Top of Descent (TOD) point for Peshawar, the cockpit crew carried out landing briefing as per pre-departure weather information because latest weather was not available due Automatic Terminal Information Service (ATIS) transmission being off air. The cockpit crew contacted Cherat Control who had them change over to BKIAP Air Traffic Control (ATC) for weather update. The ATC passed the weather observation of 14:00 h as "Wind 280° / 12 knots (kt), Visibility 4,000 meters (m), present weather Thunderstorm with Rain (TSRA) and Clouds few clouds Cumulonimbus (CB) South West of airfield, scattered clouds at 10,000 feet (ft)" with the R/W in use being R/W 35. The cockpit crew correlated the landing data with the latest weather and found it to be correct. ATC further advised that South and South-West / East of the airfield were all covered by clouds along with lightning also seen but North was all clear. ATC also gave the option of carrying out Area Navigation (RNAV) or Very High Frequency Omnidirectional Range (VOR) Approach for R/W 17. The Captain told the ATC to stand by for the decision. The Captain then requested ATC for further descent which was cleared by ATC for 10,000 ft. The Captain then changed over to Cherat Control for coordination on instructions of BKIAP ATC. After coordination, the Captain again switched back to BKIAP ATC frequency. ATC again inquired from the Captain about the landing procedure that he would follow, to which the Captain again told the ATC to stand by. ATC then told the Captain that in case higher level was required due weather, then Flight Level (FL) 150 or any other altitude as desired could be maintained. The Captain decided to descend initially to FL150. The Captain again inquired about the wind to which ATC replied that wind was 270°, 06 kt. The Captain, on hearing the wind, decided to carry out ILS Z Procedure for R/W 35 and ATC cleared the aircraft to descend to 10,000 ft. In the meantime, BKIAP ATC was also coordinating with PIA 217 which was departing from BKIAP, Peshawar. ATC then asked the position of ABQ 613 which reported its position as 27 Nautical Miles (NM) from Peshawar crossing altitude 13,500 ft for 10,000 ft and inbound heading as 035°. ATC re-cleared ABQ 613 for 8,000 ft and instructed it to call 02 Distance Measuring Equipment (DME) short turning right for outbound radial 133 for ILS Z Approach for R/W 35. ATC reported the wind as 250°, 06 kt and also communicated the last reported braking action as "Medium to Good" with rain over the airfield and wet R/W conditions. ATC cleared the Captain to proceed outbound 133, descend as per profile and subsequently to call turning right for inbound. The ILS Z Approach pattern was flown and the Captain called ILS established at 08 NM. ATC instructed the Captain to recheck Landing Gears (L/G) down and locked, announced wind as 240°, 07 kt, cautioned for wet R/W surface and cleared the aircraft to land R/W 35. The Captain disconnected the Auto-Pilot (AP) at 311 ft with a speed of 140 kt maintained by Auto-Thrust. Approaching R/W threshold, the aircraft attitude became shallower and the wind also changed direction from head

wind to tail wind. Both these factors caused the aircraft to diverge above the Glide Slope (G/S). However, there was no corrective action taken and shallower G/S was still maintained resulting in the aircraft crossing the threshold at a higher height. The aircraft flared out 20 ft above the R/W; but, the combination of shallow attitude and tail wind resulted in a long float distance and the aircraft touched down halfway down the R/W. As soon as the aircraft touched down, Auto Braking coupled with Thrust Reversal started to slow down the aircraft. The deceleration, however, proved to be insufficient and the Captain switched to manual braking with full brake pressure but could not stop the aircraft on the R/W. The aircraft departed the R/W surface and finally stopped on the SWY at a distance of 425 ft after the R/W Threshold. During the incident, there was no injury to any person on board the aircraft; however, fan blades of both engines as well as tyres were damaged.

### 1.2 Injuries to persons

Injuries	Crew	Passengers	Total in Aircraft	Others
Fatal	Nil	Nil	Nil	Nil
Serious	Nil	Nil	Nil	Nil
Minor	Nil	Nil	Nil	Nil
None	06	174	180	N/A
<b>TOTAL</b>	06	174	180	N/A

Table 1 Injuries to Persons

### 1.3 Damage to aircraft

1.3.1. 14 Fan Blades of Engine No. 1 were found to be damaged beyond serviceable limits.

1.3.2. 02 Fan Blades of Engine No. 2 were found to be damaged beyond serviceable limits.



Figure 1 Damaged Engine Fan Blades



Figure 2 Damaged Engine Fan Blades

1.3.3. All wheels were to be replaced due crossing over barrier steel cable (for fighter aircraft) at the end of the runway.



Figure 3 Damaged Tyre



Figure 4 Damaged Tyre



Figure 5 Damaged Tyre



Figure 6 Fighter Aircraft Arrester Cable and Net



Figure 7 Tyre Marks Prior to Crossing Arrester Cable



Figure 8 Tyre Marks Prior to Crossing Arrester Cable



Figure 9 Runway Overrun Area

#### 1.4 Other damage

1.4.5 Not applicable.

## 1.5 Personnel information

<b>Captain</b>	
Position	Captain
Date of Birth	19-04-1967 (52 Years)
Type of License	ATPL
Medical Date with Status	Class One (12-03-2019)
Type Rating	A-319/320/321
Type Current	A-319/320/321
Flying Experience	32 Years
Grand Total	8190 h
Total in Command	3411 h
Total in Command on the Type aircraft	1840 h
Where Trained	Airblue
Last Simulator Training:	
a) Date	13-11-2018
b) Place of Training	Dubai
Date of joining the organization	30-07-2012

Table 2 Personnel Details

<b>First Officer</b>	
Position	First Officer
Date of Birth	26-10-1967
Type of License	ATPL
Medical Date with Status	Class One (03-01-2019)
Type Rating	A-319/320/321
Type Current	A-319/320/321
Flying Experience	33 Years
Grand Total	7732 h
Total in Command	3584 h
Total in Command on the Type aircraft	A320 P2 2453 h
Where Trained	Airblue
Last Simulator Training:	
a) Date	07-11-2018
b) Place of Training	Abu Dhabi

Table 3 Personnel Details

## 1.6 Aircraft Information

Aircraft Information	
Aircraft Make and Model:	A320-214
Manufacturer Serial No.	3974
Year of Manufacturing	2010
Registration marking:	AP-EDA
Type of Engine:	CFM56-5B
Owner / Lessor	Airblue Ltd.
Date of Induction in Airblue	15-Dec-2010
Maximum Take-off Weight	77,000 kg
Maximum Landing Weight	66,000 kg
Total Aircraft Hours / Cycles (prior to event flight)	27840 FH / 11993 FC
Certificate of Airworthiness (S No., Expiry date)	00671, 19-Dec-2019
Certificate of Maintenance Review prior to event flight (Expiry date)	18-Jun-2019
Last weighing carried out	29-Jun-2019
Last Daily Inspection (prior to event flight)	22-Apr-2019
Last Weekly Inspection (prior to event flight)	20-Apr-2019
Last Check A	24-Feb-2019
Last Major Check	C-CHK 28-Oct-2017
Total Flight since Check A	580 FG / 191 FC
Last operated flight (prior to event)	AP-212
Auxiliary Power Unit (APU)	P5814

Table 4 Aircraft Details

## 1.7 Meteorological information

1.7.1. Detailed meteorological information<sup>4</sup> at the time of the incident, Peshawar was reporting TSRA with Few CB clouds. Due to continuous rain, the R/W surface was also wet; however, braking action was reported to be "Medium to Good".

Parameter	Code	Description
Observation Station ID	OPPS	Peshawar Airport
Date and Time (UTC)	231430Z	23 <sup>rd</sup> day 14:30 UTC
Wind Direction & Wind Speed	31018KT	310° at 18 knots
Visibility	4000	Visibility 4,000 m
Cloud Cover (Low)	TSRA	Thunderstorm with rain
Cloud Cover (Mid)	FEW035CB	Few cumulonimbus clouds at 3,500 ft
Cloud Cover (High)	SCT035	Scattered clouds at 3,500 ft
Cloud Cover (Low)	BKN090	Broken clouds at 9,000 ft
Temperature / Dew point	23/17	23°C / 17°C
Pressure	Q1012	1012 hectopascal

Table 5 Meteorological Information

<sup>4</sup> Pakistan Meteorological Department – BKIP Data

### 1.8 Aids to navigation

1.8.1. Navigational aids for BKIAP, Peshawar are given below. At the time of the incident, no abnormality was reported.

OPPS AD 2.19 RADIO NAVIGATION AND LANDING AIDS

TYPE OF AID CAT of ILS (VAR VAR/ILS)	ID	Frequency	Hours of operation	Site of transmitting antenna coordinates	Elevation of DME transmitting antenna	Remarks
1	2	3	4	5	6	7
ILS/LOC CAT 35	IBKB	108.3 MHz	H24	340031.00N 0713048.00E	-	-
DVOR/DME (2/2015)	PS	114.3 MHz CH90X	H24	335841.54N 0713100.91E	368.00M	-
NDB	PS	308.0 kHz	H24	335957.00N 0713010.00E	-	Coverage 150NM
GP/TDME 35	DOTS/DASHES	334.1 MHz CH20X	H24	335904.00N 0713052.00E	-	-

Table 6 Radio Navigation and landing AIDS

### 1.9 Communications

1.9.1 Communication frequencies for BKIAP are provided below. At the time of the incident, the ATIS was off the air due to which the latest weather was passed to the Cockpit crew by BKIAP ATC.

OPPS AD 2.18 ATS COMMUNICATION FACILITIES

Service designation	Call sign	Frequency	Hours of operation	Remarks
1	2	3	4	5
APP	Cherat APP	125.60 MHZ	H24	PAF. Primary Frequency.
ATIS	ATIS	126.70 MHZ	H24	-
G/A/G	Radio	2923.00 KHZ	-	-
G/A/G	Radio	5601.00 KHZ	-	-
GCA		118.30 MHZ	H24	-
TWR	Peshawar Tower	118.40 MHZ	H24	Standby Frequency
TWR	Peshawar Tower	121.50 MHZ	H24	-
TWR	Peshawar Tower	122.90 MHZ	H24	Primary Frequency.
TWR	Peshawar Tower	243.00 MHZ	H24	-
TWR	Peshawar Tower	121.80 MHZ	H24	-

Table 7 ATS Communication Facilities

### 1.10 Aerodrome information

1.10.1. BKIAP aerodrome data is given below. At the time of the incident, no abnormality was reported.

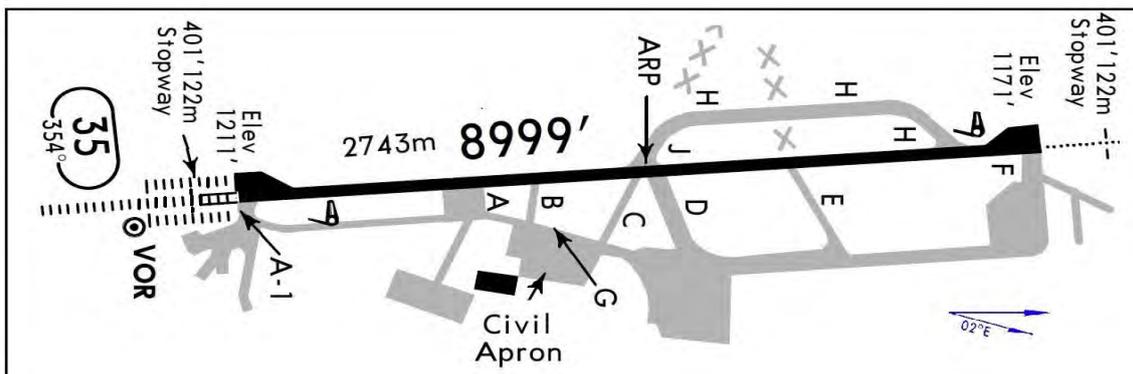


Figure 10 BKIAP Runway 35

## 1.11 Flight recorders

1.11.1. Flight Data<sup>5</sup> analysis was carried out to ascertain landing parameters and to observe anomalies, if any.

## 1.12 Wreckage and impact information

1.12.1 Not applicable.

## 1.13 Medical and pathological information

1.13.1 The Cockpit crew had valid medical fitness to undertake the flight. However, post-incident investigation revealed elevated alcohol and lactate levels for the Captain<sup>6</sup> and elevated alcohol level for the FO<sup>7</sup>. Moreover, it was discovered that the Captain was undergoing self-medication for Non-insulin Dependent Diabetes Mellitus (NIDDM)<sup>8</sup> which he had not declared.

## 1.14 Fire

1.14.1 There was no fire reported in the incident.

## 1.15 Survival aspects

1.15.1 Not applicable.

## 1.16 Test and research

1.16.1 Not applicable.

## 1.17 Organizational and management information

1.17.1 **Contradiction of CARs and ANO (PCAA)** – PCAA Rules and ANO-002-XXAM both specify zero tolerance for any alcohol consumption, both prior to as well as during flight, indicating that blood alcohol level in case of any sampling should be zero. However, as per a letter issued from the office of Additional Director Aero Medical HQCAA, blood alcohol level up to 10 mg/dL was declared to be normal contradictory to CARs and ANO.

1.17.2 **Non-standardization of alcohol cut-off values (PCAA)** – PCAA authorized laboratories for forensic testing are not using a standard cut off / limiting value to declare a blood alcohol level test as positive or negative. Each laboratory has its own cut-off value as per its SOPs which, at times, leads to inconclusive or incorrect results.

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<sup>5</sup> Airblue – FDR Data

<sup>6</sup> Chughtai Lab – Post Incident Pathological Investigation Report of Captain

<sup>7</sup> Chughtai Lab – Post Incident Pathological Investigation Report of First Officer

<sup>8</sup> Medical summary - Captain – Addl Director Aeromedical & Chief of Aviation Medicine

1.17.3 **Non-provision of records (Air Blue)** – The record of pre-flight medical check of both cockpit crew for mandatory screening of alcohol and other psychoactive substances was not provided by the operator, contrary to PCAA ANO-002-XXAM.

### **1.18 Additional information**

1.18.1 Not Applicable.

### **1.19 Use of effective investigation techniques**

1.19.1 Standard investigation procedures and techniques were used.

## **SECTION 2 – ANALYSIS**

## 2.1. General

2.1.1 ABQ-613 was a scheduled passenger flight of A320 aircraft from Sharjah UAE to BKIAP, Peshawar. The aircraft departed from Sharjah as per plan at 1140 h with ETA at BKIAP, Peshawar as 1428 h; however, the landing was delayed with ATA as 1431 h. Weather at BKIAP, Peshawar at the time of landing was TSRA with Few CB clouds and rain. The weather conditions at BKIAP were known prior to departure from Sharjah.

## 2.2. Pre-Departure

2.2.1. There was no abnormality reported in the aircraft, particularly any defect which could affect aircraft performance during landing roll. Aircraft loading was within normal limits with the aircrew adequately experienced to undertake the flight.

## 2.3. Ground Operations

2.3.1. Ground operations were all normal and aircraft departed Sharjah at 1140 h.

## 2.4. Flight Enroute

2.4.1. The departure and enroute flight to Peshawar remained uneventful with no abnormalities. For the flight, the Captain of the aircraft was PF while the FO was PM.

## 2.5. Descent for Approach

2.5.1. As the latest weather was not available due to ATIS being off air, the aircrew contacted Cherat approach who had them change over to BKIAP ATC for weather update. The ATC passed the weather as "Wind 280/12 kt, Visibility 4,000 m, Present weather TSRA and Clouds few clouds CB south south west of airfield, Scattered clouds at 10,000 ft" with the Runway in use as R/W 35. ATC further advised that South and South West / East were all covered by clouds with lightning also seen but North was all clear. ATC gave the option of R/W 17 with RNAV or VOR approach. The Captain, after inquiring about wind, decided to carry out R/W 35 ILS Z Approach<sup>9</sup> after approaching overhead Peshawar as the wind was reported to be 280°, 8 kt. ATC passed the last reported braking action as MEDIUM to GOOD with rain in progress and runway surface condition as wet. The weight of the aircraft at landing was 65.9 tons (Max landing weight: 66 tons) and the landing distance was calculated to be 2,200 m (7,217 ft)<sup>10</sup>. With BKIAP Runway being 9,000 ft, this meant that only 1,783 ft would be available for any errors during landing on part of the aircrew.

## 2.6. Final Approach

2.6.1. The aircraft flew the landing pattern as specified and was established on a 3° Glide Slope in a stabilized approach on finals by 1,000 ft Above Ground Level (AGL). The Captain disconnected the AP at 311 ft AGL. This allowed the Captain to take over the aircraft controls manually; however, speed was maintained through auto-thrust.

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<sup>9</sup> PCAA (AIP) – ILS-Z Approach chart – Runway 35

<sup>10</sup> Airblue – Investigation Report

The landing speed was calculated to be 135 kt and speed target was set at 140 kt i.e. 5 kt above approach speed. After the AP was disconnected, the aircraft pitch angle became shallow under manual control. As the aircraft approached the RW Threshold, the wind direction also changed with the head wind component converting into a tail wind component thus increasing aircraft Ground Speed (GS) resulting in the aircraft diverging above the glide slope.

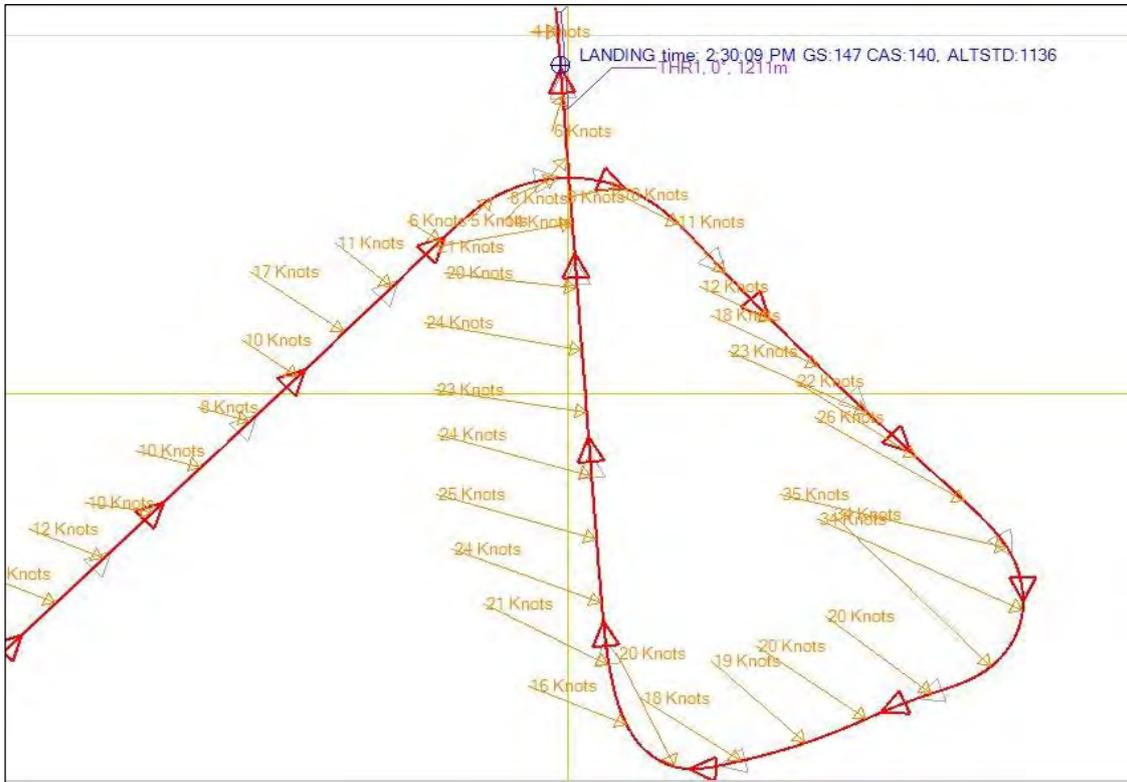


Figure 11 Aircraft Path for ILS Z Approach R/W 35 with Wind Velocity

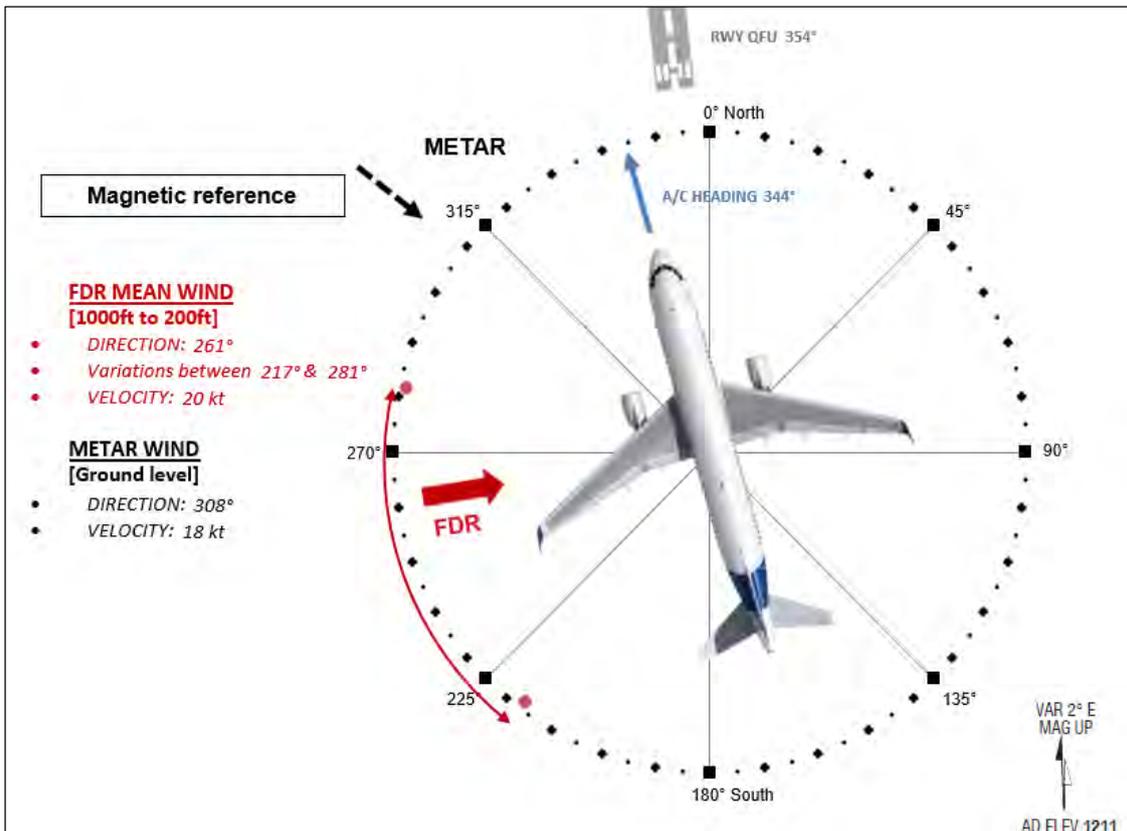


Figure 12 Wind Condition Sum Up

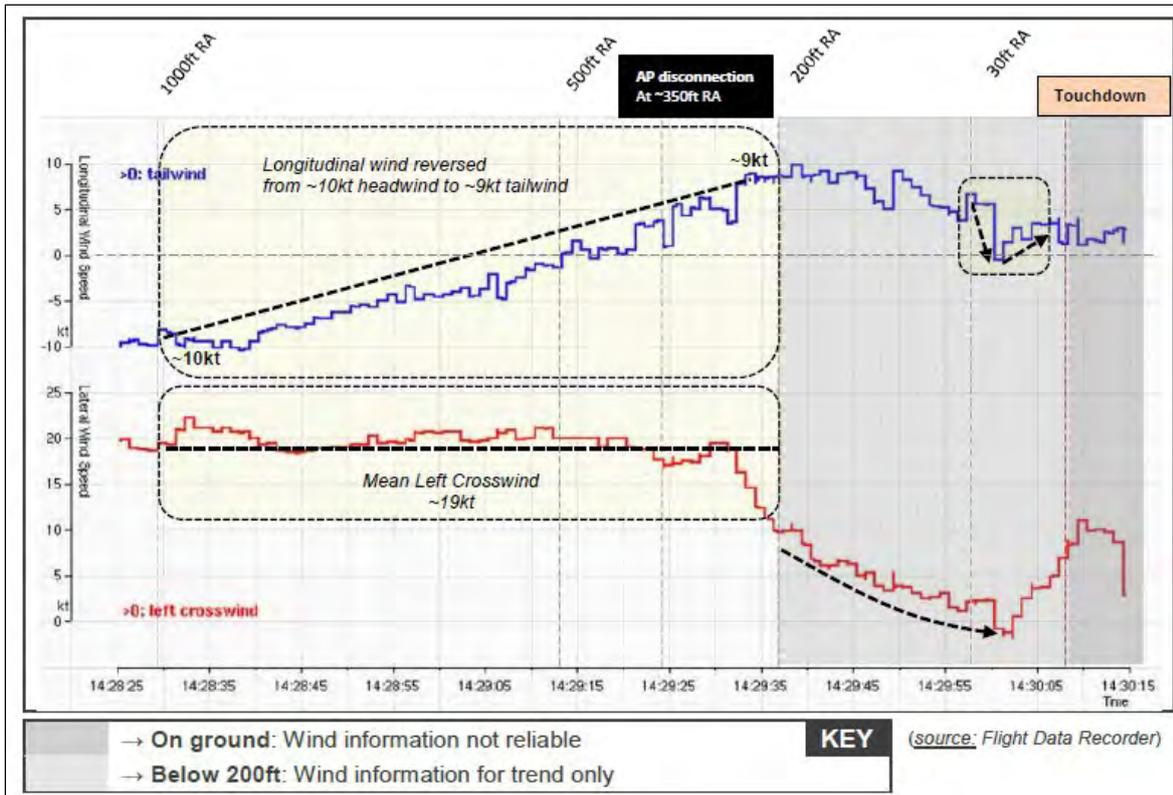


Figure 13 Wind Evolution Computed by the ADIRU (Projection on Aircraft Axes)

2.6.2. However, no effort was made by the PF to increase the Rate of Descent (ROD) by adjusting the pitch attitude. Instead of maintaining Glide Slope of 3°, the Captain maintained a shallower aircraft attitude and thus shallower glide slope, as a result of which the aircraft crossed the Runway threshold at 66 ft AGL.

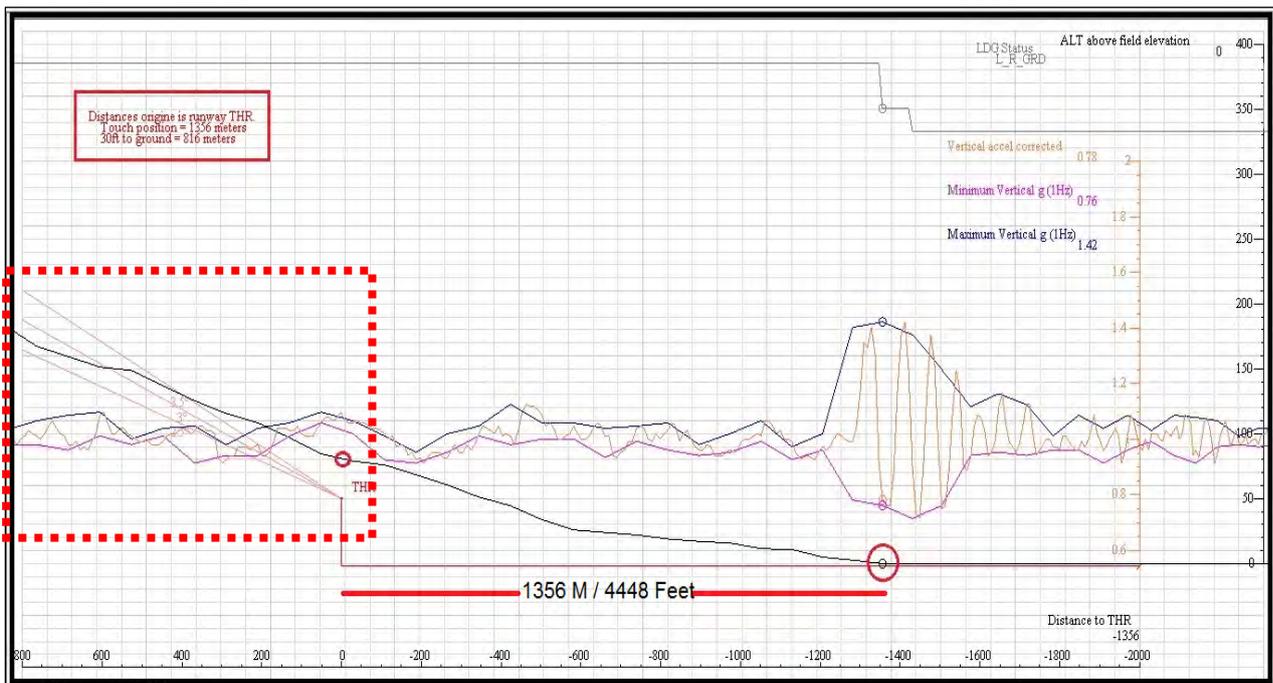


Figure 14 Aircraft Glideslope

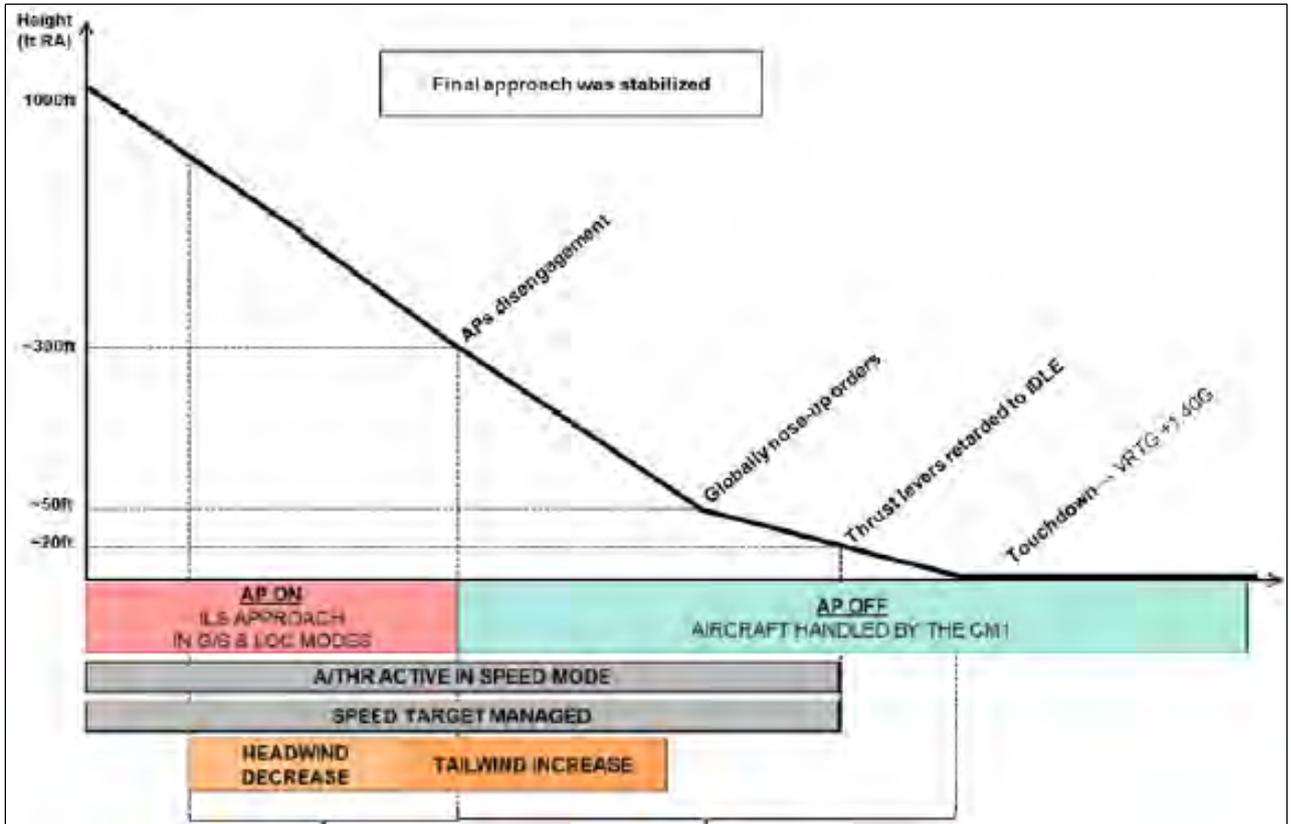


Figure 15 Aircraft Glideslope

2.6.3. At BKIAP, Precision Approach Path Indicator (PAPI) lights are available to assist the aircrew in maintaining the correct glide path for landing. Investigation into airfield landing aids and especially PAPIs also excluded any possibility of un-calibrated PAPI lights which might have caused the aircraft to maintain shallower than normal attitude on final approach<sup>11</sup>.

## 2.7. Flare Out

2.7.1. Approaching a height of 20 ft above the R/W surface, the pitch attitude of the aircraft further shallowed thus reducing the ROD. This reduced ROD coupled with the tail wind component served to increase the float distance of the aircraft.



Figure 16 Aircraft Flare out

<sup>11</sup> PCAA – Flight Inspection Report dated 20th April, 2019

## 2.8. Touchdown

2.8.1. As a result of the long float, the aircraft landed at a distance of 4,448 ft from the threshold of R/W 35 (Main + Nose Landing Gears on runway surface).

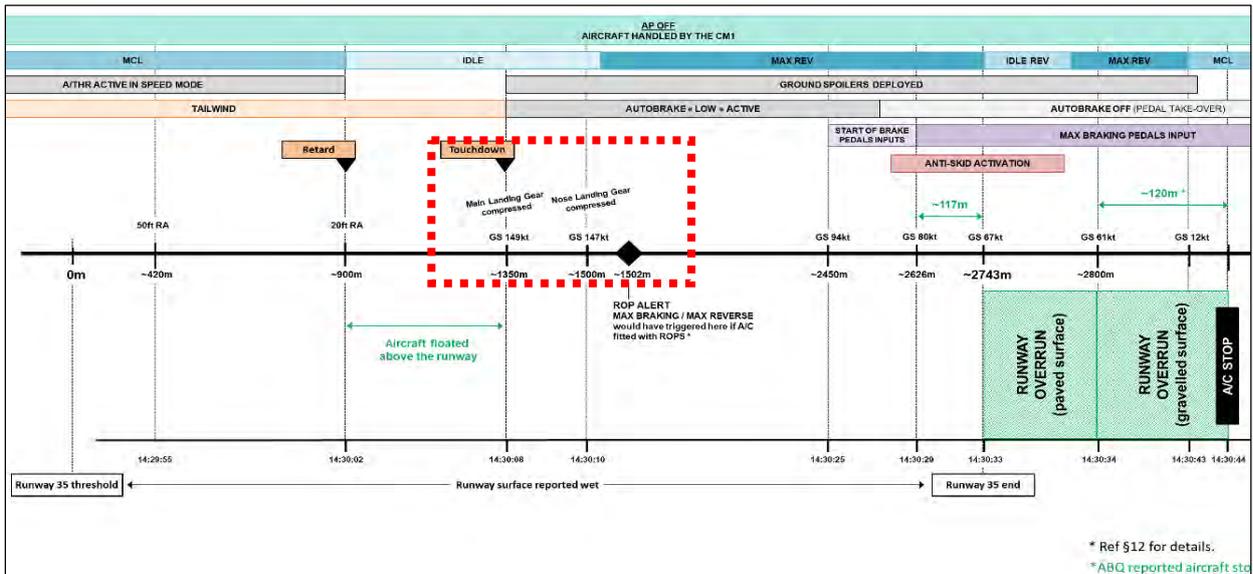


Figure 17 Aircraft Touchdown

2.8.2. As the length of the R/W is 9,000 ft, so the aircraft touched down almost halfway down the R/W with only 4,552 ft of R/W length remaining in which to stop the aircraft. The Captain selected thrust reversal on touchdown which, coupled with spoilers that had already been armed, became effective two seconds after touchdown. The indicated speed on touchdown was 141 kt with Ground Speed (GS) being 147 kt.

2.8.3. Despite crossing R/W threshold at higher height and even when the aircraft floated half of the R/W length, there was no attempt by the Captain to initiate a go around at any stage. Moreover, the FO, on observing the abnormality, also did not prompt the Captain to initiate a go around. Both these actions indicate lack of situational awareness on part of the Captain, and in-assertiveness as well as Crew Resource Management (CRM) failure on part of the FO.



Figure 18 Landing Distance

## 2.9. Braking

2.9.1. As the aircraft was on finals during ILS pattern, the auto braking was armed and selected to “LOW”; however, as per the Cockpit crew Training Manual (FCTM), the use of Autobrake mode MEDIUM should be preferred for contaminated runways.

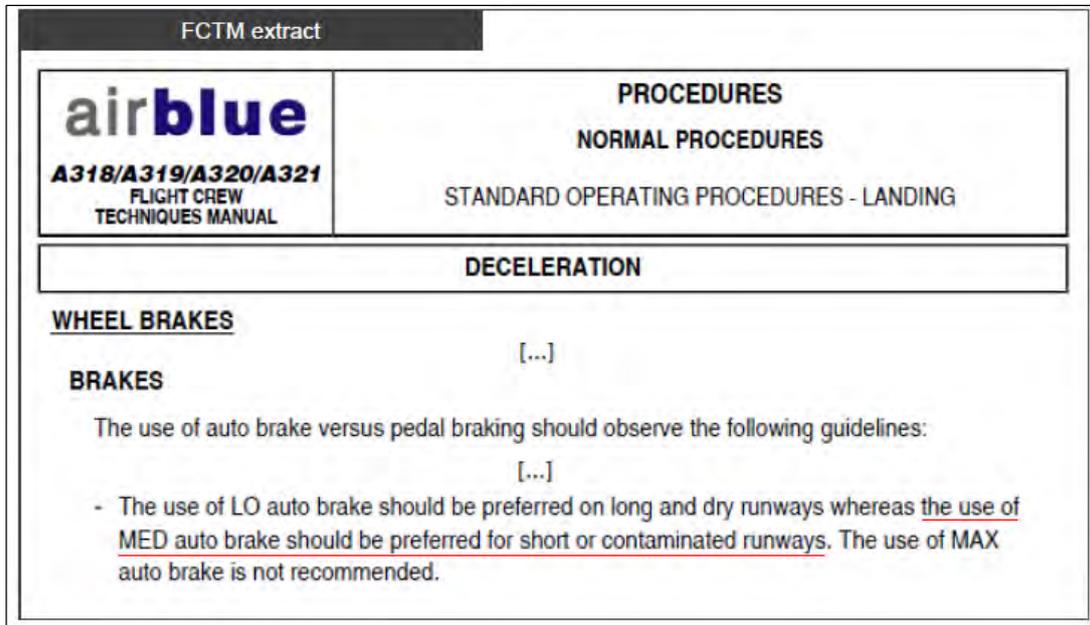


Figure 19 Deceleration on Brakes

2.9.2. In conjunction with thrust reversers and spoilers, deceleration was initiated as soon as brakes were activated after touchdown; however, owing to late touchdown, wet runway surface and LOW autobraking selection, the deceleration proved to be insufficient. At a distance of 8,036 ft down the R/W (Speed 94 kt), the Captain initiated manual braking with maximum brake input coming in at 8,614 ft down the R/W at which time the anti-skid activated to prevent wheel jamming.

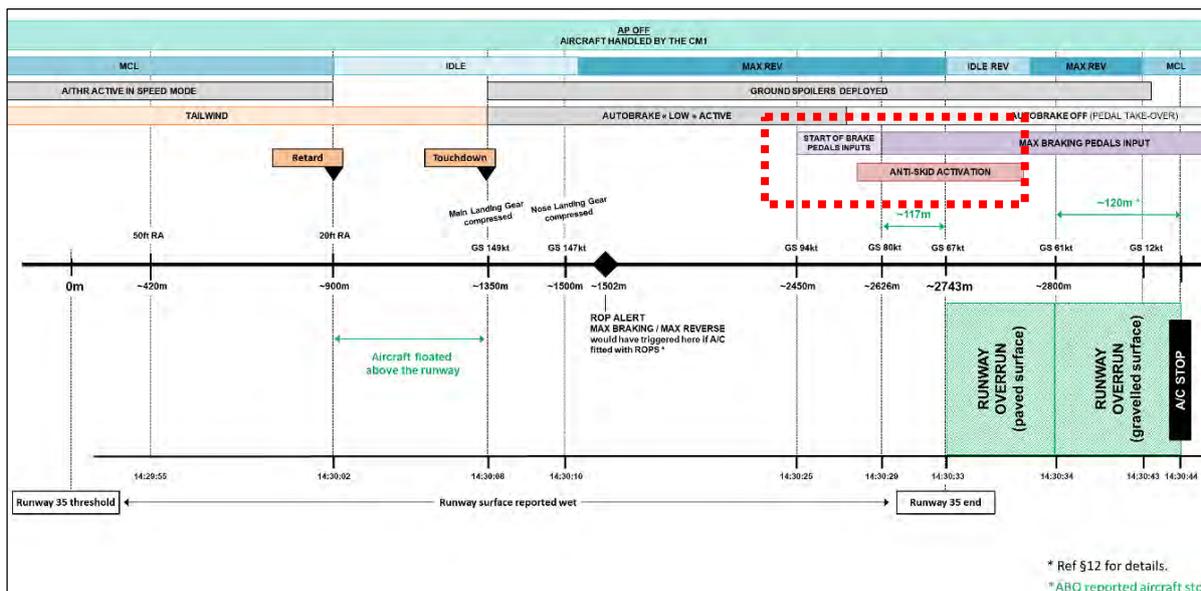


Figure 20 Manual Braking

2.9.3 The wheel rotation for all wheels was uniform with no wheel jamming or hydroplaning on the wet R/W surface. This action of manual braking, however, also proved to be insufficient to stop the aircraft on the R/W as it was applied too late.

## 2.10. Runway Excursion

2.10.1. The aircraft being unable to stop on the R/W initially entered the paved surface and, after crossing over the barrier cables, came to rest 425 ft after the R/W threshold.



Figure 21 Aircraft Tyre Marks Approaching End of Runway



Figure 22 Aircraft Tyre Marks Approaching End of Runway



Figure 23 Aircraft Tyre Marks Approaching Arrester Cable



Figure 24 Aircraft Tyre Marks Crossing End of Runway



Figure 25 Post Runway Excursion Actions

2.10.2. As the aircraft came to a stop, the Captain shut down the engines and the aircraft was then towed back to its parking position where all the passengers safely disembarked.



Figure 26 Aircraft Parked on Runway Overrun Area



Figure 27 Aircraft Parked on Runway Overrun Area



Figure 28 Aircraft Being Prepared for Towing



Figure 29 Aircraft Being Towed



Figure 30 Aircraft Parked at Terminal

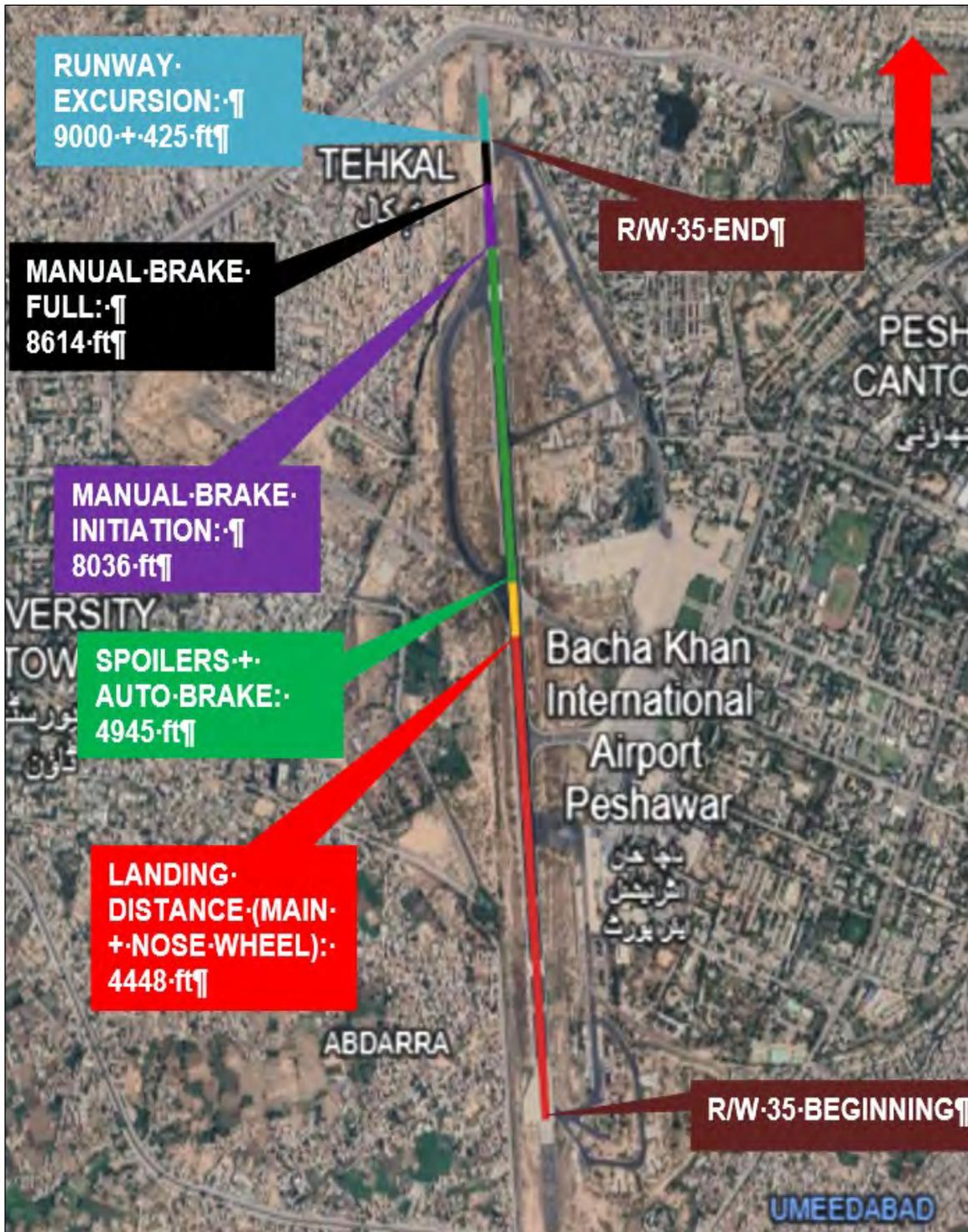


Figure 31 Landing Overview

## **SECTION 3 – CONCLUSION**

### 3.1 FINDINGS

- 3.1.1. Air Blue flight ABQ-613 was a scheduled passenger flight of A320 aircraft from Sharjah (UAE) to BKIAP, Peshawar (Pakistan).
- 3.1.2. There was no abnormality or defect reported in the aircraft prior to the flight.
- 3.1.3. The aircrew was sufficiently experienced to undertake the flight.
- 3.1.4. Ground operations at Sharjah were normal.
- 3.1.5. Aircraft departed Sharjah at 1140 h.
- 3.1.6. Departure and flight enroute to Peshawar remained uneventful.
- 3.1.7. Captain of the aircraft was PF while FO was PM.
- 3.1.8. As the aircraft approached TOD, the aircrew carried out landing briefing as per pre-departure weather information because latest weather was not available due ATIS being off air.
- 3.1.9. The Cockpit crew contacted Cherat approach who had them change over to BKIAP ATC for weather update.
- 3.1.10. The ATC passed the weather as "Wind 280<sup>o</sup>/12 kt, Visibility 4000 m, Present weather TSRA and Clouds few clouds CB south south west of airfield, Scattered clouds at 10,000 ft" with the Runway in use as R/W 35.
- 3.1.11. The aircrew correlated the landing data with the latest weather and found it to be correct.
- 3.1.12. BKIAP ATC advised that R/W 17 also available with RNAV or VOR Approach as South and South East / West were all covered by clouds with lightning but North was clear.
- 3.1.13. The Captain inquired about the wind which was reported to be 280<sup>o</sup>, 8 kt.
- 3.1.14. The Captain decided to fly ILS Z approach for R/W 35 due to wind.
- 3.1.15. ATC reported rain in progress with surface condition wet and braking action MEDIUM to GOOD.
- 3.1.16. The landing distance was calculated to be 2200 m (7,217 ft) with landing weight 65.9 tons. The Landing Distance Available (LDA) was 9000 ft, leaving a margin of only 1783 ft for any errors during landing.
- 3.1.17. The autobraking was selected to LOW setting.
- 3.1.18. ILS Z pattern was flown for R/W 35 after reporting overhead the airfield.
- 3.1.19. Aircraft was established in a 3<sup>o</sup> glide slope on finals in a stabilized approach by 1,000 ft AGL.
- 3.1.20. The Captain disconnected the Auto Pilot at 311 ft AGL.
- 3.1.21. The aircraft speed was maintained with auto thrust with speed target set for 140 kt against approach speed of 135 kt.
- 3.1.22. After AP disconnection, aircraft pitch angle became shallow.
- 3.1.23. Wind direction also changed from head wind to tail wind thus increasing aircraft ground speed.

- 3.1.24. Shallow pitch attitude and increased ground speed caused the aircraft to diverge above the glide slope.
- 3.1.25. The Captain did not attempt to adjust pitch attitude or increase ROD to maintain correct Glide Slope.
- 3.1.26. The PAPIs installed for R/W 35 were also calibrated and not a cause for shallow Glide Slope.
- 3.1.27. The aircraft crossed the Runway Threshold at a height of 66 ft.
- 3.1.28. The Captain started to round out at a height of 20 ft further reducing ROD which when coupled with the tail wind component caused the aircraft to float for a longer distance over the runway surface.
- 3.1.29. The aircraft landed at a distance of 4,448 ft (half R/W length) from R/W 35 Threshold with only 4,552 ft of R/W length remaining to stop the aircraft.
- 3.1.30. At no time did the FO prompt or advise the Captain for a go-around.
- 3.1.31. The aircraft touched down at 141 kt (GS 147 kt) and thrust reversal along with spoilers became effective two seconds after touch down.
- 3.1.32. Autobraking also started to decelerate the aircraft along with thrust reversal.
- 3.1.33. The deceleration of the aircraft proved to be insufficient to stop the aircraft due to late touchdown, wet runway surface and LOW autobraking selection.
- 3.1.34. Manual braking was initiated by the Captain at 8,036 ft down the R/W and anti-skid also became effective to prevent wheel jamming.
- 3.1.35. The wheel rotation was uniform with no wheel jamming condition at any time.
- 3.1.36. The aircraft was unable to stop on the R/W.
- 3.1.37. After crossing end of R/W, the aircraft entered the paved surface.
- 3.1.38. Subsequently, after crossing the barrier cables, the aircraft came to rest 425 ft after the R/W threshold.
- 3.1.39. The Captain shut down the engines and the aircraft was towed to its parking position.
- 3.1.40. All passengers were safely disembarked from the aircraft.
- 3.1.41. Post incident medical examination revealed presence of alcohol in blood samples of both the Captain and the FO.
- 3.1.42. The Captain also had elevated lactate levels and was found to be undergoing self-medication for Non-insulin Dependent Diabetes Mellitus (NIDDM) without the knowledge of medical authorities.
- 3.1.43. During the course of investigation, it came to light that different PCAA authorized laboratories for forensic testing use different baseline values for declaring blood alcohol level as positive or negative.
- 3.1.44. A letter issued by the office of Additional Director Aero Medical HQCAA regarding acceptable blood alcohol level for flights was in contradiction to CARs and ANO.

3.1.45. Air Blue did not provide the record of pre-flight tests of the aircrew for alcohol and other psychoactive substances.

### **3.2 Causes / Contributing Factors**

3.2.1. **Cause:**

3.2.1.1. Involuntary **Runway Excursion (RE)**.

3.2.2. **Contributing Factors:**

3.2.2.1. Incorrect brake setting.

3.2.1.2. Incorrect landing technique.

3.2.1.3. Ineffective CRM.

## **SECTION 4 – SAFETY RECOMMENDATIONS**

## 4.1 RECOMMENDATIONS

### 4.1.1. Airblue

4.1.1.1. Random testing of Cockpit crew for alcohol consumption may be carried out both pre-flight and post-flight to ascertain any trends, and appropriate measures may be instituted to prevent such violations.<sup>12</sup>

4.1.1.2. Cockpit crew may be encouraged to declare medical issues, seek proper treatment and not indulge in self-medication.

4.1.1.3. Cockpit crew may be given periodic refreshers regarding correct landing technique to be followed in case of inclement weather<sup>13</sup>.

4.1.1.4. Periodic check flights of Cockpit crew may be undertaken with special emphasis on accuracy of parameters during critical stages of flight, i.e. take-off and landing.

4.1.1.5. Cockpit crew may practice take-off and landing in inclement weather settings as well as high wind conditions during simulator training<sup>14</sup>.

4.1.1.6. Selection of Auto braking to MEDIUM may be made as standard for inclement weather landing.

4.1.1.7. CRM training and refreshers may emphasize to FOs to be more assertive in case of observing any abnormalities, unusual situations or errors committed by the Captain<sup>15</sup>.

### 4.1.2. PCAA

4.1.2.1. PCAA may ensure standardization of allowable blood alcohol level for aircrew prior to flight.

4.1.2.2. PCAA may ensure standardization of cut off value for alcohol in blood samples for all PCAA authorized laboratories.

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<sup>12</sup> Compliance by M/s Airblue vide letter No. ABQ/DCSS/HQ ISB/2/24 dated 02<sup>nd</sup> Aug, 2024

<sup>13</sup> Compliance by M/s Airblue vide letter No. ABQ/DCSS/HQ ISB/2/24 dated 02<sup>nd</sup> Aug, 2024

<sup>14</sup> Compliance by M/s Airblue vide letter No. ABQ/DCSS/HQ ISB/2/24 dated 02<sup>nd</sup> Aug, 2024

<sup>15</sup> Compliance by M/s Airblue vide letter No. ABQ/DCSS/HQ ISB/2/24 dated 02<sup>nd</sup> Aug, 2024