



(i)

Important Information and Instruction for Recipients

1. Appended, in the upcoming pages, is the 'Final Report', together with the 'Safety Recommendations' of the ground Incident of Boeing 737-800 aircraft, Registration S2-AJA of US Bangla airlines Ltd, occurred on 02 January 2024 at VGSY airport, Sylhet, Bangladesh.
2. The Investigator-in-charge (IIC) of the Aircraft Accident Investigation Team (AAIT), designated by the undersigned has prepared this Final Report, as Bangladesh is the State of Occurrence as well as the State of Registry and the State of Operator of the aircraft.
3. Earlier, on 30 January 2024, the AAIC-BD had sent to all concerned, the 'Preliminary Report' of the Incident, which was in conformity with Standard 7.4 of Annex 13 to the Chicago Convention on International Civil Aviation.
4. In accordance with standard 6.3 of Annex 13, the AAIC-BD had sent, to all concerned, the draft Final Report on 19 October 2024 and requested to provide 'Comments' (if intended) on the draft Final Report within sixty (60) days from the date of the transmittal of correspondence. So far, no comment has been received from any concerned addressee.
5. The AAIC-BD is dispatching this 'Final Report' as per standard 6.5 of Annex 13.
6. This Final Report will soon be available in the website www.caab.gov.bd (Menu: AAIC-BD) for public view.
7. Soon the AAIC-BD will send the Safety Recommendations, listed in Subject Sub-Head 3.4 of this report, to applicable States/ Organizations for effective corrective actions for the purpose of safety in aviation and prevention of accident/ serious incident / investigable incident.

Head

Aircraft Accident Investigation Committee of Bangladesh

CONTACT DETAILS OF AIRCRAFT ACCIDENT INVESTIGATION COMMITTEE (AAIC-BD)

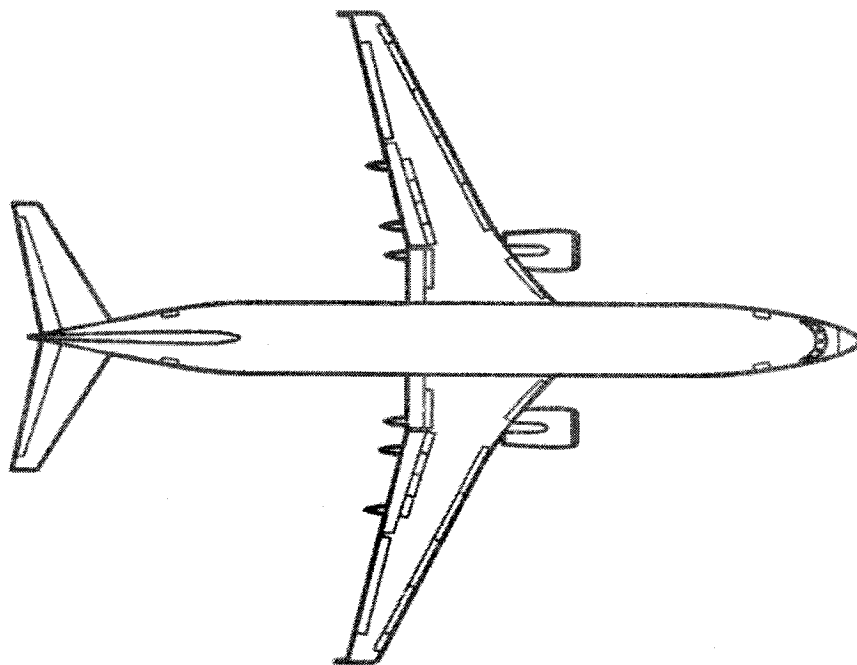
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(ii)

FINAL REPORT

INVESTIGATION INTO THE INCIDENT OF BOEING 737-800 AIRCRAFT REGISTRATION NUMBER S2-AJA OF US BANGLA AIRLINES LTD THAT OCCURRED ON 02 JANUARY 2024 AT VGSY AIRPORT, SYLHET, BANGLADESH



BOEING 737-800

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OFFICE OF THE AIRCRAFT ACCIDENT INVESTIGATION COMMITTEE
MINISTRY OF CIVIL AVIATION & TOURISM
3RD FLOOR CAAB HEADQUARTERS (OLD) KURMITOLA DHAKA-1229



REF. NO. 30.00.0000.013.34.002.22 (B 737-800 S2-AJA/ 02 JANUARY 2024)-191

DATE OF RELEASE: 01 JANUARY 2025

(iii)

Foreword

The investigation of this incident has been conducted by the Aircraft Accident Investigation Committee of Bangladesh (AAIC-BD) in accordance with Section 19 of the CA Act 2017 and in conformity with Annex 13 to the Chicago Convention on International Civil Aviation.

This 'Final Report' has been issued to project an updated status of the investigation on the aforementioned Incident of the 'draft Final Report' which was sent on 19 October 2024. The Final Report has been compiled in accordance with the requirements of Section 6.4 of ICAO Annex 13. The information contained in this Final Report has been derived from the factual information and evidences so far gathered during the ongoing investigation of the occurrence.

On 02 January 2024, at 0419 hrs UTC, the AAIC-BD received a telephone call from Sylhet tower that, at 0808 hrs UTC, while taxiing to parking bay, one of the Boeing 737-800 aircraft, Nationality and Registration Number S2-AJA of US Bangla Airlines Ltd had struck the right horizontal stabilizer tip of another parked B 737-800 aircraft Nationality and Registration Number S2-AJG. Immediately, the Head of AAIC-BD advised the Airport/Aerodrome Controller of VGSY (Sylhet) for ensuring adequate protection of all the evidences without disturbing the aircraft and its contents until the arrival of the '**GO-TEAM**', designated by the Head of the AAIC-BD, at the site of occurrence. This has been in pursuance to Standard 3.3 of Annex 13.

A two-member '**Go-team**', led by the Head of the AAIC-BD, took the first available flight to Sylhet to inspect and protect the necessary evidences. The '**Go-team**' took all reasonable measures to protect the evidences and maintain safe custody of the aircraft and its contents for such a period as was necessary for the purposes of investigation.

Pursuant to 4.1 of Annex 13, the Office of the AAIC-BD issued a 'Notification' on 04 January 2024 for information of all concerned (National and International). The Head of AAIC-BD designated the Member of Operations of the AAIC-BD as the Investigator-in-charge (IIC) one-member Aircraft Accident Investigation Team (AAIT) which was issued through a 'Memorandum' to conduct the investigation. Bangladesh is the State of Occurrence; hence the AAIC-BD has instituted, conducted the investigation and prepared this Final Report.

The AAIC-BD conceives that any Aircraft Accident Investigation and analysis thereof should focus on identifying the true underlying causes and/or contributing factors rather than indicating on some human omissions for the occurrence.

As per ICAO Annex 13, the sole objective of this investigation shall be to prevent aircraft accidents and incidents. It is not the purpose of this activity to apportion blame or liability.

Head
Aircraft Accident Investigation Committee
Bangladesh

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(iv)

List of Acronyms

A	
AAIC	Aircraft Accident Investigation Committee
AAIC-BD	Aircraft Accident Investigation Committee of Bangladesh
AAIT	Aircraft Accident Investigation Team of AAIC-BD
AC	Aircraft
ACCREP	Accredited Representative
AME	Aircraft Maintenance Engineer
ATC	Air Traffic Control
ATPL	Airline Transport Pilots License
 C	
CAA	Civil Aviation Authority
CAAB	Civil Aviation Authority of Bangladesh
CPL	Commercial Pilot License
 D	
DME	Distance Measuring Equipment
 F	
FIR	Flight Instructor Rating
FO	First Officer
FSR	Flight Standard and Regulations
 I	
ICAO	International Civil Aviation organization
IIC	Investigator-in-Charge
 N	
N/A	Not Applicable
NDB	Non-Directional Beacon
NDT	Non-Destructive Test
NTSB	National Transportation Safety Board, USA.
 P	
PIC	Pilot-In-Command
PPL	Private Pilot License
 REG	
REG	Registration
RWY	Runway
 SIC	
SIC	Second-In-Command
 UTC	
UTC	Coordinated Universal Time
 VFR	
VFR	Visual Flight Rules
VGHS	Hazrat Shahjalal International Airport Dhaka, Bangladesh.
VOR	VHF Omnidirectional Radio Range

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3RD FLOOR CAAB HEADQUARTERS (OLD) KIRINTOLA DHAKA-1229



REF. NO. 30.00.0000.013.34.002.22 (B 737-800 S2-AJA/ 02 JANUARY 2024)-191



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			3.1.3 Damage to Aircraft
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		3.2 Analysis	Machine
			Weather/ Environment
			Man
		3.3 Conclusions	Findings
			Causes
			Contributing factors
		3.4 Safety Recommendations	Safety Recommendations
4.	Appendices	4.1 Appendices	Will be sequentially preserved in the office of the AAIC-BD.

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	OFFICE OF THE AIRCRAFT ACCIDENT INVESTIGATION COMMITTEE MINISTRY OF CIVIL AVIATION & TOURISM 3RD FLOOR CAAB HEADQUARTERS (OLD) KURMITOLA DHAKA-1229	
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1. TITLE

1.1 Composition of Title

1.1.1 Name of the Operator	US Bangla Airlines Limited
1.1.2 Name of the Manufacturer	Boeing
1.1.3 Aircraft Model	Boeing 737-800
1.1.4 Aircraft Nationality	Bangladesh
1.1.5 Aircraft Registration Marks	S2-AJA
1.1.6 Place of Occurrence	VGSY (Osmani International Airport, Sylhet, Bangladesh)
1.1.7 Date of Occurrence	02 January 2024

2. SYNOPSIS

2.1 Details of Synopsis

2.1.1 Notification of accident to national and foreign authorities	Office of the Aircraft Accident Investigation Committee-Bangladesh notified to all relevant Authorities and Agencies as per Standard 4.1 of ICAO Annex 13.
2.1.2 Identification of the Accident Investigation Authority	Aircraft Accident Investigation Committee of Bangladesh (AAIC-BD).
2.1.3 Accredited Representative	Having received the Notification from the AAIC-BD, NTSB of the United States of America (USA) responded immediately to serve as the U.S Accredited Representative and confirmed that they would remain standby for any kind of assistance, should AAIC- BD require.
2.1.4 Organization of the Investigation?	Aircraft Accident Investigation Team (AAIT), designated by the Head of the AAIC-BD through a 'Memorandum'.
2.1.5 Authority releasing the report	Aircraft Accident Investigation Committee of Bangladesh (AAIC-BD)
2.1.6 Date of publication or dispatch of report	The date of dispatch is 01 January 2025.
2.1.7 Brief resume of the circumstances leading to the accident	The Flight-'Bangla Star 326' (BS-326) was on a scheduled flight from Guangzhou Baiyun International Airport (ZGGG), China to Hazrat Shahjalal International Airport (VGHS) Dhaka. Due to poor visibility at VGHS, the flight diverted to Osmani International Airport (VGSY), Sylhet. After landing at Sylhet, as per the instruction from the Air Traffic Controller, the aircraft was taxiing to designated parking stand Bay-2 of old apron. During taxiing to parking stand Bay-2, while turning 90 degrees left, its right outer surface of the winglet struck another parked aircraft (B 737-800, Registration S2-AJG), whereby, the right-hand Horizontal stabilizer tip trailing edge corner of the parked aircraft tore by 4 inches approximately. The strike made a tear of approximately 15 inches long split on the outer surface of the winglet of the taxiing aircraft (B 737-800, S2-AJA). The stationary aircraft (B 737, Registration S2-AJG) was parked 34 ft short of parking stand at Bay-1.

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3. BODY

3.1 FACTUAL INFORMATION

3.1.1 History of the flight:

3.1.1.1 Flight number	BS-326
3.1.1.2 Type of operation	Commercial
3.1.1.3 Last point of departure	ZGGG
3.1.1.4 Time of departure (Local time or UTC)	2108 UTC
3.1.1.5 Point of intended landing	VGHS (Dhaka)
3.1.1.6 Flight preparation	Flight preparation was good.

3.1.1.7 Description of the flight and events leading to the accident, including reconstruction of the significant portion of the flight path, if appropriate.

On 01 January 2024, the B 737 (Reg No- S2 AJA), aircraft took off from Guangzhou Baiyun International Airport for VGHS. On 02 January 2024, due to poor visibility at VGHS, Dhaka, the aircraft diverted to Osmani International Airport, Sylhet and landed safely at 0207 hrs UTC. After landing, as per the instruction of the Air traffic controller, the pilot was taxiing to parking stand Bay-2. At parking stand Bay-1, another aircraft, Reg No- S2 AJG was parked before. This aircraft (Reg No- S2 AJG) was parked 34 ft short of parking stand Bay 1. During taxiing to parking stand Bay- 2, as the aircraft turned left for its parking stand, the right winglet of the taxiing aircraft struck the right-hand horizontal stabilizer tip trailing edge corner of the parked aircraft (Reg No- S2 AJG).

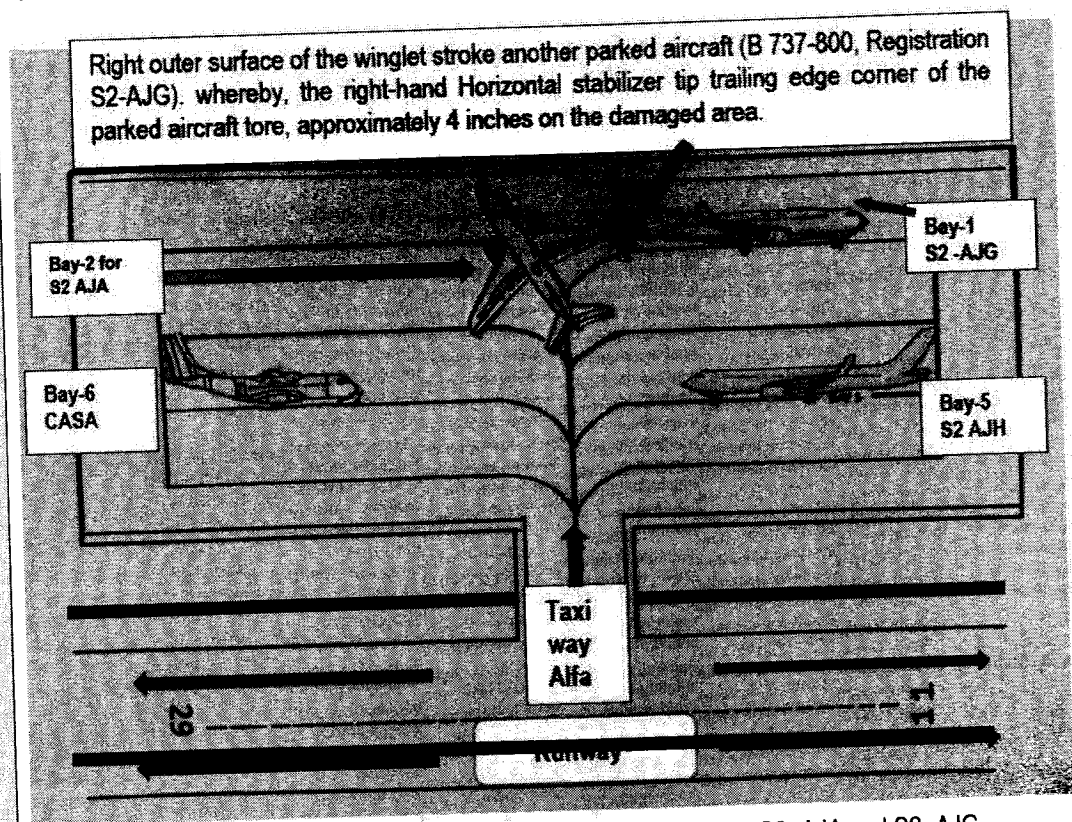


Figure- 1 Ground Incident (Collision) between Boeing 737, S2- AJA and S2- AJG

3.1.1.8 Location (latitude, longitude, elevation)	05 NM N/NE of Sylhet Town
3.1.1.9 Time of the accident/serious incident (Local or UTC)	0208 UTC approx.
3.1.1.10 Whether day or night	Day

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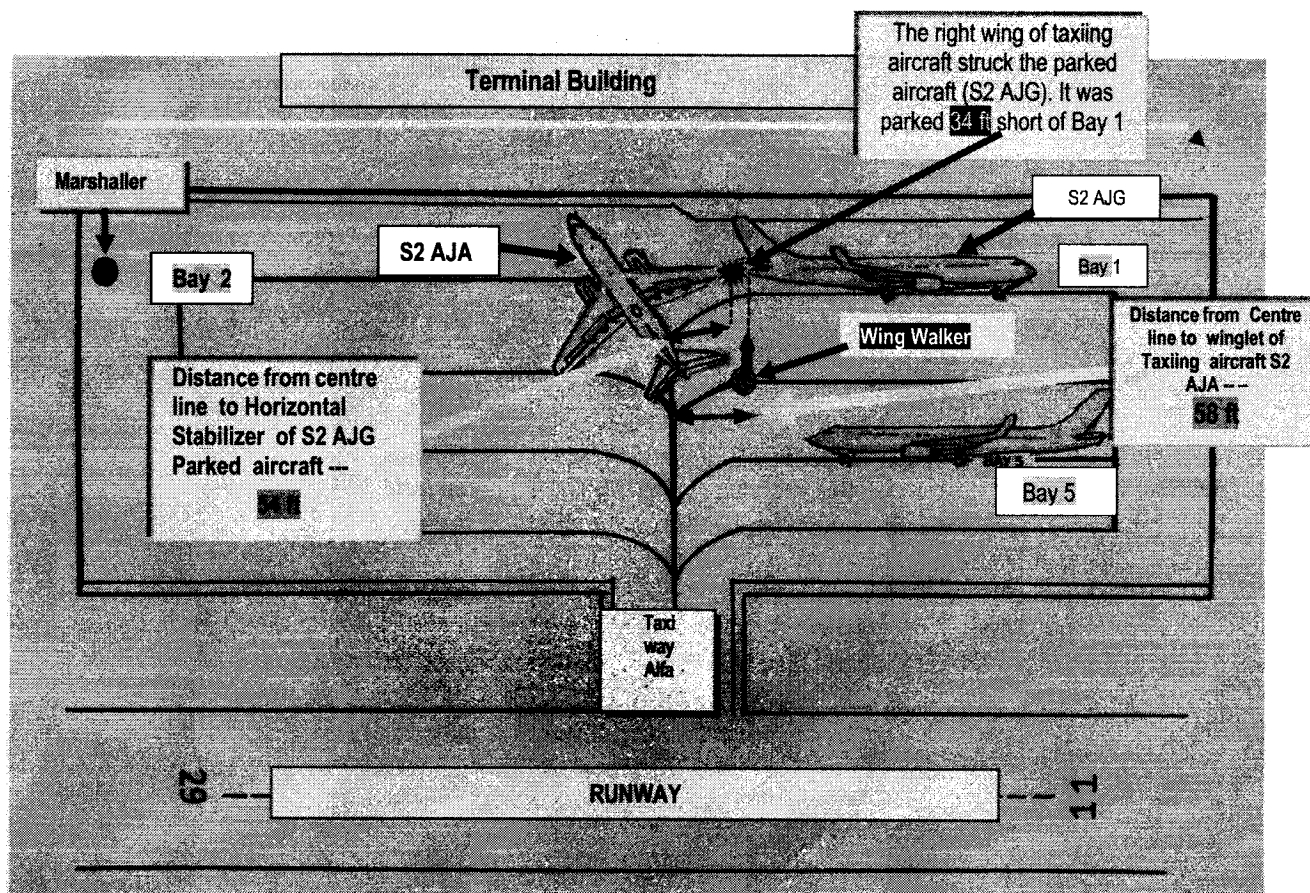


Figure- 2 Diagram for 'Root Cause' of the Ground Incident (Collision)

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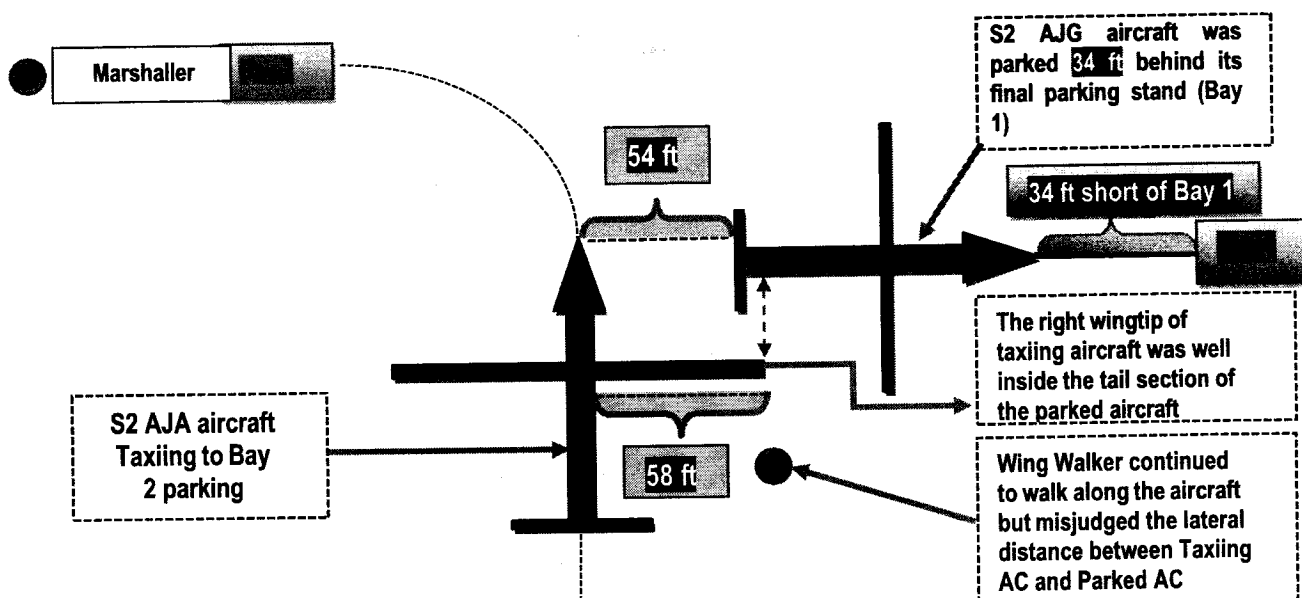


Figure -3 Sketch diagram of ground Incident (Collision)

3.1.2 Injuries to Persons

Injuries	Crew	Passengers	Others
3.1.2.1 Fatal	No	N/A	N/A
3.1.2.2 Serious	No	N/A	N/A
3.1.2.3 Minor	No	N/A	N/A

3.1.3 Damage to Aircraft (Brief description)

3.1.3.1 Destroyed	No
3.1.3.2 Substantially damaged	(a) With regard to taxiing aircraft S2-AJA, the RH winglet outer surface was found torn by 15 inches long split; and. (b) With Regard to parked aircraft S2-AJG, the RH Horizontal stabilizer trailing edge tip was damaged and torn off, 4 inches on the damaged area.
3.1.3.3 Slightly damaged	NIL

3.1.4 Other Damage:

3.1.4.1 Other Damage	NIL
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3.1.5 Personnel information

3.1.5.1 Pertinent information concerning each of the flight crew members regarding age, validity of licenses, ratings, mandatory checks, flying experience (total and on type) and	Pilot	First Officer
	(a) Date of Birth: 22-04-1975 (b) Age: 48 years (c) Nationality: Bangladeshi (d) License: ATPL # 378 (e) Ratings: B 737-800 NG (f) Mandatory Checks: N/A	(a) Date of Birth: 26 th MAY 1994 (b) Age: 30 (c) Nationality: BANGLADESHI (d) License: ATPL-468 (e) Ratings: B738 (f) Mandatory Checks: N/A

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relevant information on duty time	(g) Flying Experience: (h) (Grand Total): 7900:00 (i) License Validity: Valid, (non-expiry)	(g) Flying Experience: Grand total: 3823:29 (h) On-type: 273:59
3.1.5.2 Brief statement of qualifications and experience of other crew members	N/A	
3.1.5.3 Pertinent information regarding other personnel, such as air traffic services, maintenance, etc., when relevant	Normal	

3.1.6 Aircraft information

3.1.6.1 Brief statement on airworthiness and maintenance of the aircraft (indication of deficiencies known prior to and during the flight to be included, if having any bearing on the accident)	(a) The aircraft was serviceable before departure from Dhaka for respective flight on 1st of January 2024. (b) Boeing 737-800 aircraft Reg S2-AJA was on transit certification at out station with 'NIL' defect and was duly certified for flight with full Airworthiness clearance.
3.1.6.2 Brief statement on performance, if relevant, and whether the mass and centre of gravity were within the prescribed limits during the phase of operation related to the accident. (If not and if of any bearing on the accident give details.)	N/A
3.1.6.3 Type of fuel used	JET-A1

3.1.7 Meteorological information of VGSD

3.1.7.1 Brief statement on the meteorological conditions appropriate to the circumstances including both forecast and actual conditions, and the availability of meteorological information to the crew	(a) Surface wind: 090 / 05 (b) Surface Visibility: 1000 meter (c) Weather: Fog (d) Cloud: Nil
3.1.7.2 Natural light conditions at the time of the accident (sunlight, moonlight, twilight, etc.)?	During sunlight.

3.1.8 Aids to Navigation of VGSY

3.1.8.1 Pertinent information on navigation aids available, including landing aids such as ILS, MLS, NDB, PAR, VOR, visual ground aids, etc., and their effectiveness at the time	(a) ARP co-ordinates- 245740.83N 0915217.89E in the RWY (b) MAG VAR- 1 degree W (c) Types of traffic permitted IFR/VFR- IFR/VFR
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3.1.9 Communications.

3.1.9.1 Pertinent information on aeronautical mobile and fixed service communications and their effectiveness	VHF1, VHF2
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3.1.10 Aerodrome information

3.1.10.1 Pertinent information associated with the aerodrome, facilities and condition, or with the take-off or landing area if other than an aerodrome	VGSY – Single Runway, adequate to meet the operational requirements.
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3.1.11 Flight recorders

3.1.11.1 Location of the flight recorder installations in the aircraft, their condition on recovery and pertinent data available therefrom	Flight Data Recorder is located above the ceiling in the rear of the cabin, not recovered for the
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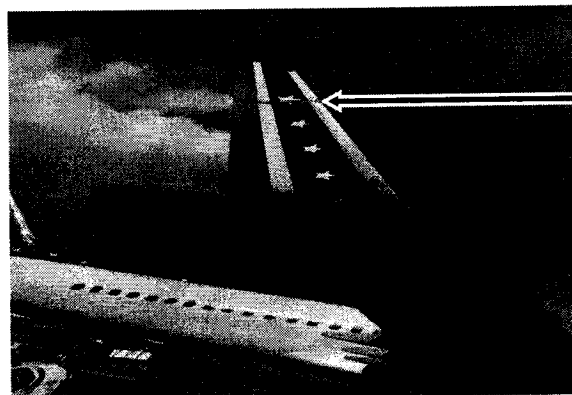
purpose of this ground collision incident.

3.1.12 Wreckage and impact information

3.1.12.1 General information on the site of the accident and the distribution pattern of the wreckage, detected material failures or component malfunctions. Details concerning the location and state of the different pieces of the wreckage are not normally required unless it is necessary to indicate a break-up of the aircraft prior to impact. Diagrams, charts and photographs may be included in this section or attached in the appendices

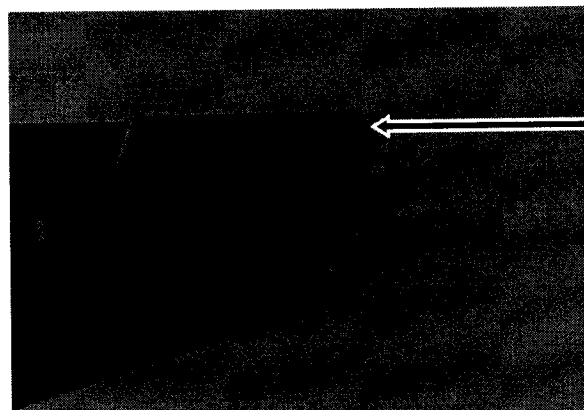


Red arrow mark shows Winglet of aircraft



Damaged Right winglet of B 737 Reg - S2 AJA

Figure - 4 Winglet and Damaged Right winglet



Right aft edge corner of horizontal stabilizer of parked B 737 aircraft, Reg No- S2 AJG.

Figure -5 Right aft edge corner of horizontal stabilizer of parked B 737, S2 AJG

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3.1.13 Medical and pathological information

3.1.13.1 Brief description of the results of the investigation undertaken and pertinent data available therefrom	Medical and/ or pathological of personnel was not done.
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3.1.14 Fire

3.1.14.1 If fire occurred, information on the nature of the occurrence, and of the firefighting equipment used and its effectiveness	Fire did not occur
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3.1.15 Survival aspects

3.1.15.1 Brief description of search, evacuation and rescue, location of crew and passengers in relation to injuries sustained, and failure of structures such as seats and seat-belt attachments	All the passengers including flight crew were unhurt and disembarked safely.
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3.1.16 Tests and research

3.1.16.1 Brief statements regarding the results of tests and research	Not carried out
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3.1.17 Organizational and Management Information

3.1.17.1 Pertinent information concerning the organizations and their management involved in influencing the operation of the aircraft. The organizations include, for example: the operator; the air traffic services; airway, aerodrome and weather service agencies; and the regulatory authority. The information could include, but not be limited to, organizational structure and functions, resources, economic status, management policies and practices, and regulatory	<p>(1) Organizational Structure and Functions.</p> <p>US-Bangla Airlines is under the umbrella of the US-Bangla Group, established in 2010 to meet the growing demand for air travel. The Airline began its commercial flight operations on 17 July 2014. It is currently the largest private airline in Bangladesh with fleet size of 18 registered aircraft. US-Bangla Airlines operates under a defined hierarchical structure outlined in Corporate Policy Manual. Its key leadership roles include:</p> <ul style="list-style-type: none">(a) The CEO is the accountable manager responsible for operational and management teams, strategy formulation.(b) The Head of Departments hold responsibility for safety decisions and risk assessments to ensure implementation of risk mitigation steps within their respective department.(c) The Line Managers and Supervisors implement safety programs, ensure safe work environments, investigate incidents, and enforce safety standards.(d) The associated technical Personnel are responsible for safe task performance, reporting hazards and incidents, and adhering to regulations and procedures. <p>(2) Resources and Economic Status:</p> <ul style="list-style-type: none">(a) Fleet: The fleet is significantly expanded with most efficient and reliable aircrafts. It may be mentioned here that the only private airlines in Bangladesh who acquired brand new ATR 72-600 aircraft's straight from factory and operating those in the safest manner throughout. Since its inception, US-Bangla Airlines has focused on expanding its fleet to meet the demands of a diverse range of routes. The airline primarily operates a fleet of modern aircraft, including:<ul style="list-style-type: none">- 07 x Boeing 737-800- 09 x ATR 72-600
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framework?

- 02 x DHC 8-Q 400 and
- 02 x (upcoming) Airbus A330-343.

(b) Workforce: Flying can be a complex operation, and ensuring everyone reaches their destination safely involves a whole team of dedicated professionals & safe practices. Team comprises over 2600 professionals working across various departments, each playing a crucial role.

(3) Internal Systems and Processes:

- (a) Safety Management System (SMS) is established in a comprehensive manner. It identifies each and every hazard (and associated risks) anywhere if in existence in the airline, does risk assessment of all those identified hazards, promulgate appropriate and effective mitigation action of those along-with experts through SRM activities, implement those decided appropriate mitigation actions, and then finally keep under follow up to be sure that mitigation actions formulated are effective and no such or similar risks exists anymore.
- (b) The US Bangla Airlines dedicatedly conducts regular Performance Engineering and Engineering Projects, Research and Development (R&D), Flight Data Monitoring (FDM) and many more.
- (c) Training Management System has been established to highlight the high standard of Training System of USBA. It has implemented for its all level of employees including its Flight Crews, Engineers, Technicians, Cabin Crews, Operation Officers as well as all level of its employees,

(4) Regulatory Compliance:

- (a) USBA is in Compliance with CAA regulations, internal standards, and AOC conditions is ensured through Nominated Post Holders.
- (b) USB holds the International Air Transport Association (IATA) Operational Safety Audit (IOSA) certification and has the commitment for maintenance of international safety standards.

(5) Resources & Commitments:

US-Bangla Airlines presents a well-defined organizational structure, dedicated resources, and strong commitment to safety, reflected in the policies, practices, and adherence to regulatory frameworks. All these factors combinedly shape the safe operation of US-Bangla as well as contribute to the position as the leading and most reliable airline in Bangladesh.

3.1.18 Additional information

3.1.18.1 Relevant information not already included in 3.1.1 to 3.17.1

Nil

3.1.19 Useful or effective investigation techniques

3.1.19.1 When useful or effective investigation techniques have been used during the investigation, briefly indicate the reason for using these techniques and refer here to the main features as well as describing the results under the appropriate subheadings 3.1.1 to 3.18.1?

- (a) This investigation has been carried out following the format of Annex 13 as far as possible.

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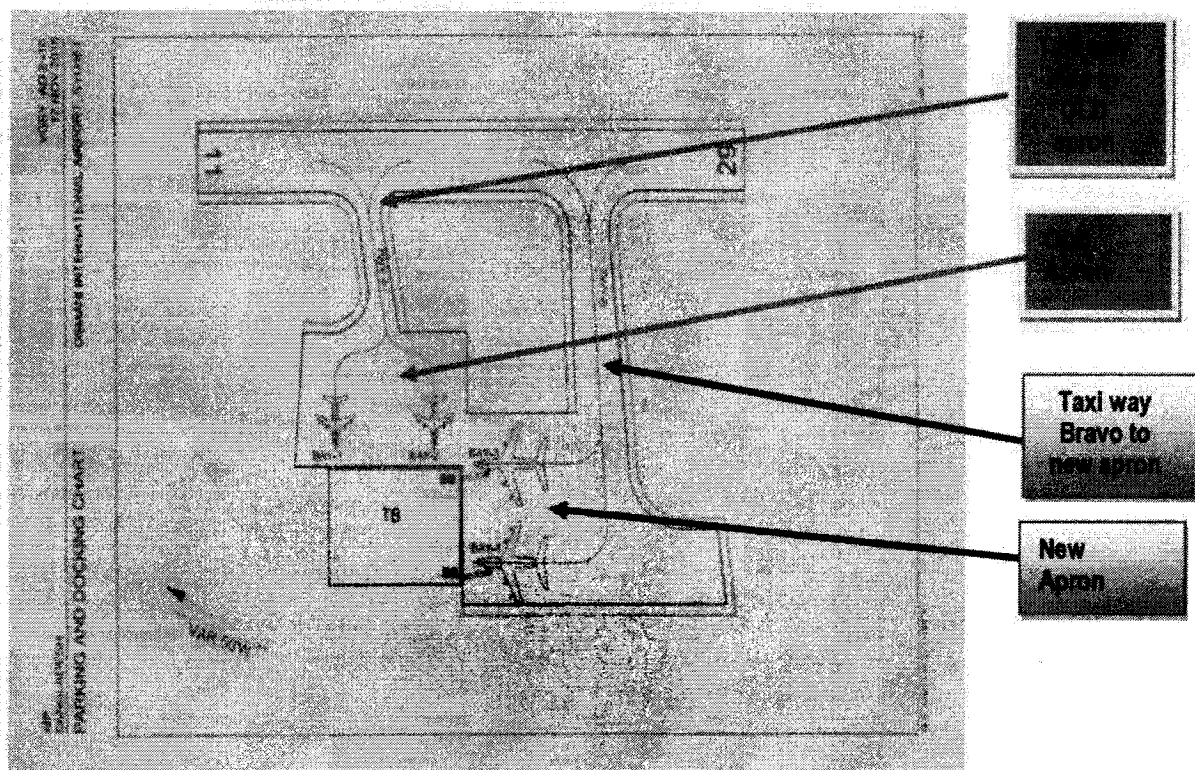


Figure – 6 Parking and Docking Chart at VGSY

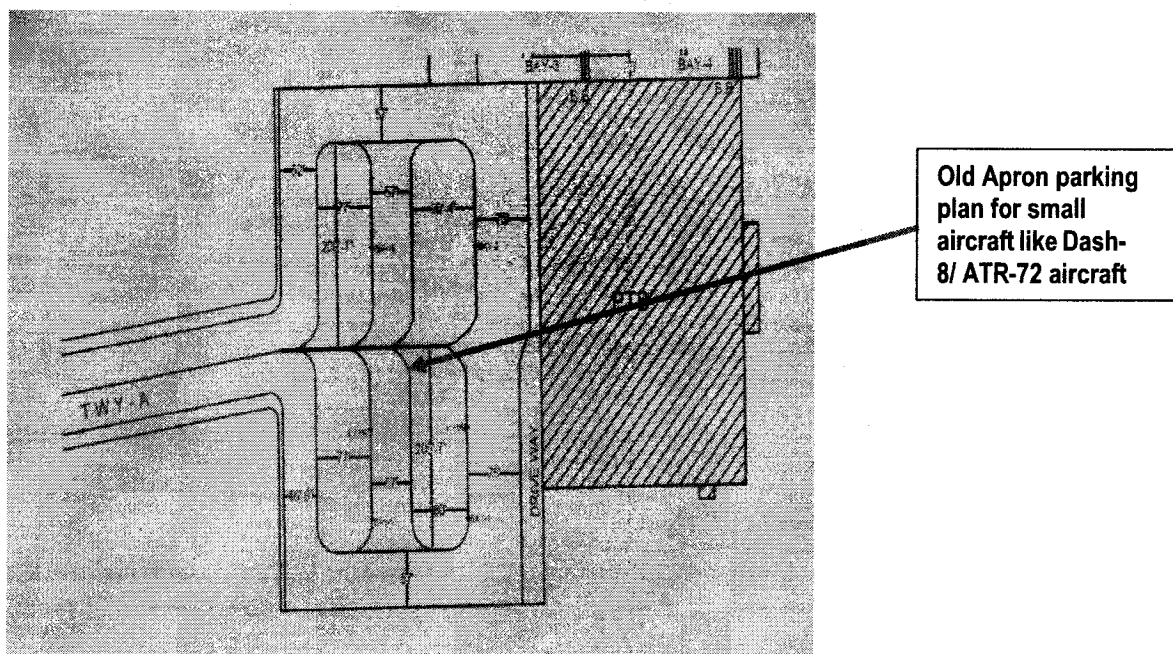


Figure 7 Designated Parking area of small aircraft at VGSY

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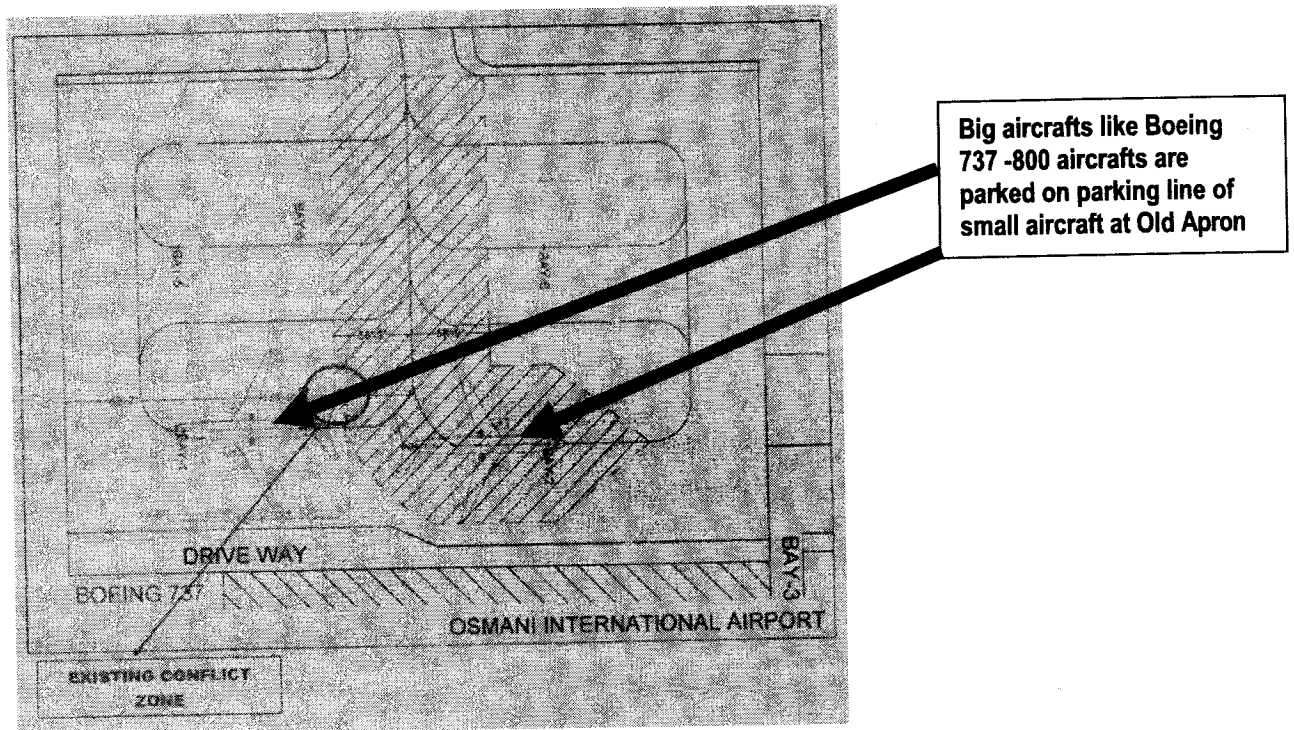


Figure -8 Designated Parking area of bigger aircraft at VGSY

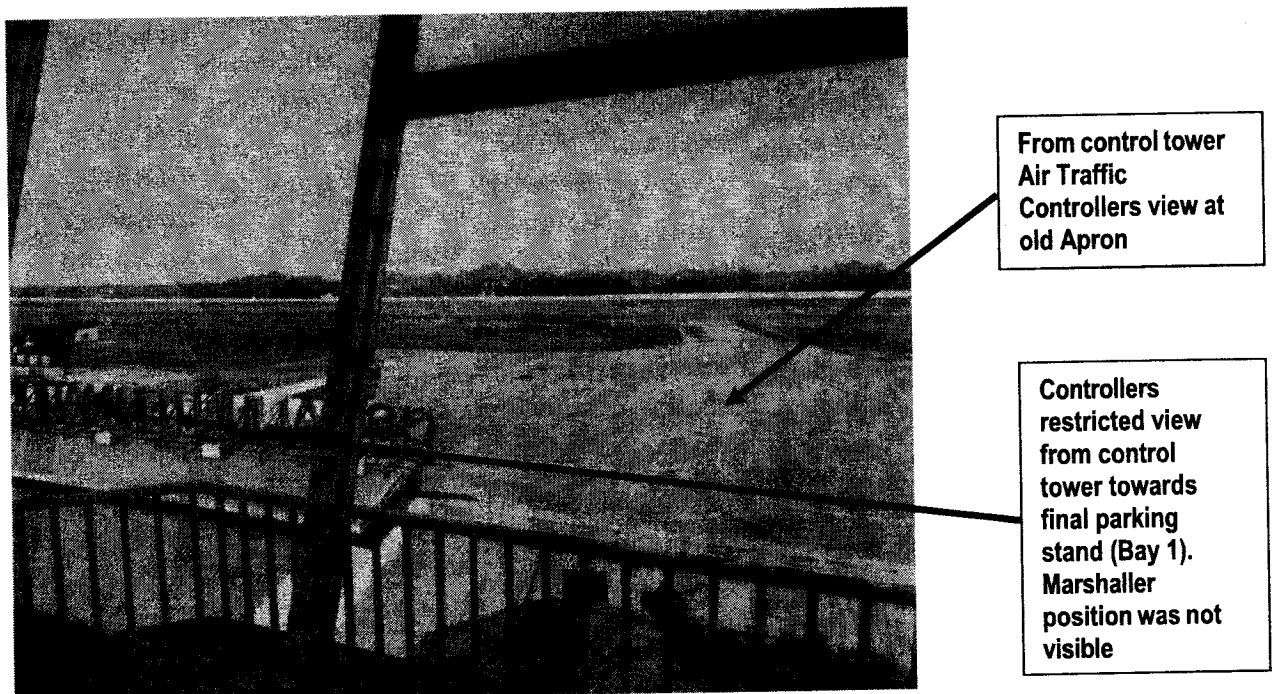


Figure -9 Control Tower view of the old apron at VGSY

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3.2 ANALYSIS (Determination of Conclusions, Causes and/or Contributing factors)

3.2.1 Machine	<p>(1) Aircraft airworthiness and system operations:</p> <p>(a) The aircraft was airworthy. There was no technical defect detected prior to release for the flight from Guangzhou Baiyun International Airport (ZGGG), China. Performance status was satisfactory. Mass & Centre of Gravity were within limit;</p> <p>(b) The aircraft was certified, equipped, and maintained in accordance with existing regulations and approved procedures.</p> <p>(c) So far, no anomaly or abnormality was found or perceived with regard to machine/ Material.</p>
3.2.2 Weather/ Environment	<p>(1) Weather at VGHS and VGSY:</p> <p>(a) Surface visibility at the Destination (VGHS, Dhaka):</p> <p style="margin-left: 40px;">(1) 200 Meters which reduced to 50 meters and less.</p> <p>(b) Weather at diversion airfield (VGSY, Sylhet):</p> <p style="margin-left: 40px;">(1) Surface wind (Direction and Speed KT): 090/ 05 (2) Surface Visibility: 1000 meter (3) Weather: Fog (4) Cloud cover: Clear</p> <p>(2) Environment</p> <p>The investigation found out that the designation of parking bays and stand-markings in old apron have not been established appropriately. The marshaller's physical position of Bay 1 is not at all visible from the control tower to the extent that the yellow line marked leading to Bay 1. This resulted the Air Traffic Controller to forcibly parked the earlier aircraft well short of the assigned position.</p> <p>Note: Due to poor visibility at the destination airfield (VGHS, Dhaka), the aircraft diverted to VGHS, Sylhet.</p>
3.2.3 Man	<p>(1) The Pilot in Command:</p> <p>During taxiing, while the Pilot in Command (PIC), sitting on to the left-hand seat in the cockpit, was turning the aircraft 90 degrees left for its designated parking stand Bay 2, the right winglet area of the aircraft struck the tail section of the parked aircraft. Here, the PIC misjudged the lateral separation between his own taxiing aircraft and the parked aircraft to avoid the collision.</p> <p>(2) The First Officer:</p> <p>The First Officer (FO), sitting on to the right-hand seat in the cockpit, while giving signal to the PIC regarding wing tip clearance and also misjudged the lateral distance between two aircraft. The investigation found out that the First Officer, while giving clearance signal, relied mostly on wing walker's hand signal.</p>

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OFFICE OF THE AIRCRAFT ACCIDENT INVESTIGATION COMMITTEE
MINISTRY OF CIVIL AVIATION & TOURISM
3RD FLOOR CAAB HEADQUARTERS (OLD) KURMITOLA DHAKA-1229



REF. NO. 30.00.0000.013.34.002.22 (B 737-800 S2-AJA/ 02 JANUARY 2024)-191

DATE OF RELEASE: 01 JANUARY 2025

(3) Air Traffic Controller:

- (a) Earlier, the Air Traffic Controller, while parking the aircraft at Bay 1, Reg S2 AJG, stopped the aircraft **34 feet short of the actual parking stand (Bay 1)**. Although the PIC continued to taxi to the proper parking stand following marshaller's signal, the Air Traffic Controller, by overwhelmingly using his authority, stopped the aircraft through R/T communication on the incorrect position;
- (b) The Air Traffic Controller assigned the marshaller for marshalling the incoming taxiing aircraft (S2 AJA) to Bay 2, but did not caution the flight crew appropriately about the parked aircraft on to the starboard side and for possible collision.

(4) Marshaller

- (a) Both the parked and the taxiing aircraft were marshalled by the same marshaller. In the first case, the marshaller was aware that the parked aircraft (S2-AJG) was overwhelmingly stopped well short of (**34 feet**) the actual parking stand, but did not inform the Air Traffic Controller regarding the inappropriate parking of S2-AJG.
- (b) Having well-known that the parked aircraft was parked well short of the actual parking stand he did not give timely appropriate signal to the taxiing aircraft to make the left 90 degrees turn earlier so as to avoid the collision.

(5) Wing Walker:

The wing walker, during questioning, revealed that the incumbent did not have any clue about hand signaling and giving wing-clearance to aircraft. He, being a person from the Customer Service of the Air Operator, was not trained to perform this type of job. He walked along the taxiing aircraft and was not able to visualize the horizontal distance between the taxiing aircraft and the parked aircraft. (**Figure -2**).

(6) The air operator /Company:

The air operator lacked to produce the required documents (the ground training syllabus/ OJT and training curriculum duly approved/accepted by the CAAB for Wing Walkers).

3.3 CONCLUSIONS



Appended below are the **Findings, Causes and/or Contributing factors** established in the investigation.

3.3.1 Findings

- (1) The aircraft was airworthy and certified;
- (2) Both flight crew had valid License and fit for flying duties
- (3) The weather at the diversion airfield was uneventful;
- (4) Incorrect parking of the stationary aircraft (S2 AJG);
- (5) The marshaller's physical position at Bay-1 and the yellow line marked leading to Bay-1, were not visible from the control tower;
- (6) Both flight crew (PIC and FO) misjudged the lateral distance between their taxiing aircraft and the stationary aircraft parked at Bay-1;
- (7) The marshaller did not give timely and appropriate signal to either stop or signal the

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	taxing aircraft to take early left 90 degrees turn so as to avoid the collision; (8) The marshaller mostly relied on the wing walker hand signal. (9) Lack of training of the wing walker to show appropriate hand-signal to moving aircraft. (10) The operator/ company could not produce the appropriate syllabus for wing walkers Training/ OJT.
3.3.2 Causes	The cause of this ground incident was due to 'Ground Collision' between two aircrafts.
3.3.3 Contributing Factors	(a) Incorrect parking of the stationary aircraft (S2 AJG); (b) Inabilities of marshaller to give the timely and appropriate signal to the taxiing aircraft (S2 AJA). (c) Human omission on the part of the flight crew; (d) Human omission on the part of the Air Traffic Controller. (e) Faulty marshalling procedure of the Marshaller; (f) Lack of training of the wing walker; (g) Inappropriate deployment of the wing walker.

3.4 SAFETY RECOMMENDATIONS

3.4.1 Safety Recommendations	<p>(1) The Air Operator (Also Applicable for all Air Operators of Bangladesh):</p> <p>(a) Scenario Based Training (SBT) for Flight Crew in simulator for correct judgement of ground objects, should be given to all flight crew;</p> <p>(b) Wing Walkers and other associated ground handling personnel should be trained appropriately as per the company syllabus, duly approved by the CAAB.</p> <p>(2) VGSY Aerodrome Authority (Also Applicable for all Aerodromes of Bangladesh):</p> <p>(a) Installation of CCTV radar-imaging equipment should be placed at appropriate places for clear visual monitoring from ATC tower of ground movement of all aircraft, vehicles and other objects.</p> <p>(b) Prior to establishing (a), the ATC should be provided with accurate and timely information of placement of all parked aircraft or motionless objects during crisis management.</p> <p>(c) Distinct yellow markings on the manoeuvring area for bigger and smaller aircraft should be done on both apron area as per Annex 14.</p> <p>(d) Marshallers periodic training, refresher training and OJT should be conducted pursuant to CAAB approved/accepted syllabus;</p>
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4. APPENDICES

4.1 All statements, evidences, documents, photographs etc. are preserved in the 'File'.

END

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