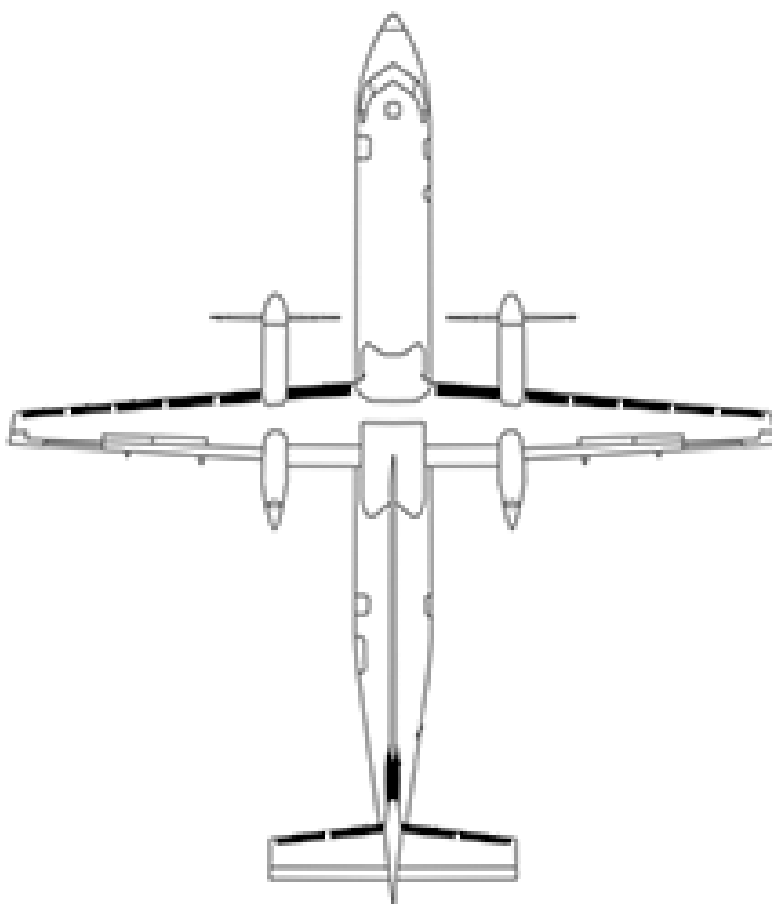




(i)

PRELIMINARY REPORT

INVESTIGATION INTO INCIDENT OF DHC-8 SERIES-400 AIRCRAFT REG NO S2-AJW
OF BIMAN BANGLADESH AIRLINES OCCURRED ON 16 MAY 2025 AT VGCB, COX'S BAZAR AIRPORT
BANGLADESH.



PUBLISHED BY
THE OFFICE OF THE AIRCRAFT ACCIDENT INVESTIGATION COMMITTEE OF BANGLADESH

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(ii)

INTRODUCTION

This incident investigation is being conducted by the Aircraft Accident Investigation Committee of Bangladesh (AAIC-BD), in accordance with Rule 6 (c) of Aircraft Accident and Serious Incident Investigation Rules 2023 (AASIIR-2023) and in conformity with Annex 13 to the Chicago Convention on International Civil Aviation.

This Preliminary Investigation Report has been issued to project an updated status of the 'Notification' on the aforementioned incident.

On 16 May 2025, the Head of AAIC-BD learnt from Civil Aviation Authority of Bangladesh that one of the Dash-8 Q-400 of Biman Bangladesh Airlines, Registration No S2-AJW got airborne with one main wheel detached during take-off roll at VGCB, Cox's Bazar Airport. The ATC Tower Controller of VGCB informed the flight crew about the wheel detachment from the aircraft during take-off roll. The PIC of the aircraft decided to continue the flight to Dhaka for better emergency and maintenance facility.

Having learnt about the occurrence, the Head of AAIC-BD advised one-member 'Go-team' to move to the airport at VGHS Airport, Dhaka. Upon reaching at the airport, the go-team member found that the aircraft had already landed safely with one left main wheel (inner) missing. The aircraft cleared the active runway and was switched off at South Alpha taxiway. All passengers were disembarked without any injury/ harm.

Pursuant to Rule 33 of the AASIIR-2023 and Standard 4 of Annex 13 the Office of the AAIC-BD issued a 'Notification' on 17 May 2025 for information of all concerned (National and International). To conduct the investigation, the Head of AAIC-BD designated the Member of Engineering of the AAIC-BD as the Investigator-in-Charge (IIC) with one-member (Operations) to form the Aircraft Accident Investigation Team (AAIT), which was issued through a 'Memorandum'.

The information contained in this preliminary report has been derived from the factual information and evidences gathered so far during the on-going investigation of the occurrence and is being circulated and published, pursuant to Rule 27 of AASIIR-2023 and Standard 7.4 of Annex 13.

The AAIC-BD conceives that any investigation and analysis which would be made thereof, should focus on identifying the root cause(s) and/or contributing factor(s) rather than indicating on some human omissions for the occurrence.

As per Rule 16 (1) of AASIIR-2023 and ICAO Annex 13, the sole objective of this investigation is to prevent aircraft accidents and incidents. It is not the purpose of this activity to apportion blame or liability.

Pursuant to Rule 29 of AASIIR-2023 and Standard 6.5 of ICAO Annex, in the interest of accident prevention, the AAIC-BD shall make the 'Final Report' publicly available as soon as practicable and, if possible, within twelve months from the date of the occurrence.

Head
Aircraft Accident Investigation Committee
Bangladesh

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(iii)

List of Acronyms

AAIC	Aircraft Accident Investigation Committee
AAIC-BD	Aircraft Accident Investigation Committee of Bangladesh
AAIT	Aircraft Accident Investigation Team
AAIO	Aircraft Accident Investigation Order
ACCREP	Accredited Representative
AASIIR	Aircraft Accident and Serious Incident Investigation Rules
AME	Aircraft Maintenance Engineer
ATC	Air Traffic Control
ATPL	Airline Transport Pilots License
Biman	Biman Bangladesh Airlines
CAA	Civil Aviation Authority
CEO	Chief Executive Officer
CAAB	Civil Aviation Authority of Bangladesh
CPL	Commercial Pilot License
CVR	Cockpit Voice Recorder
DME	Distance Measuring Equipment
FDR	Flight Data Recorder
FSR	Flight Standard & Regulations
ICAO	International Civil Aviation Organization
IIC	Investigator-In-Charge
LH	Left hand
LT	Local Time
Ltd	Limited
MB	Millibar
N/A	Not Applicable
NDB	Non-Directional Beacon
N NE	North, North East
NM	Nautical mile
NSC	No Significant Cloud
NDT	Non-Destructive Test
OEM	Original Equipment Manufacturer
OPS	Operations
PIC	Pilot in command
PFI	Pre-flight Inspection
PPL	Private Pilot License
REG	Registration
RWY	Runway
SOP	Standard Operating Procedure
TSB	Transport Safety Board
US	United States
UTC	Coordinated Universal Time
VFR	Visual Flight Rules
VGCB	Cox's Bazar Airport
VGHS	Hazrat Shahjalal International Airport, Dhaka
VOR VHF	Omnidirectional Radio Range

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1. TITLE

1.1 Composition of Title

1.1.1 Name of the Operator	Biman Bangladesh Airlines Ltd.
1.1.2 Name of the Manufacturer	De Haviland Aircraft Canada
1.1.3 Aircraft Model	DHC-8 Series-400
1.1.4 Aircraft Nationality	Bangladesh
1.1.5 Aircraft Registration Marks	S2-AJW
1.1.6 Place of Accident/ Serious Incident/ Investigable Incident	VGCB, Cox's Bazar Airport
1.1.7 Date of Accident/ Serious Incident/ Investigable Incident	16 May 2025

2. SYNOPSIS

2.1 Details of Synopsis

2.1.1 Notification of accident/ serious incident/ investigable incident 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/ Serious Incident/ Investigable Incident Investigation Authority	Aircraft Accident Investigation Committee-Bangladesh (AAIC-BD)
2.1.3 Accredited Representation	Having received the notification from the AAIC-BD, the Air Investigation Transportation of Safety Board of Canada responded immediately and appointed one non-travelling accredited representative and confirmed that he would remain standby for any kind of support, should the AAIC-BD require. The investigator-in-charge, designated by the Head of AAIC-BD, established communication with the accredited representative of TSB Canada for necessary information and cooperation.
2.1.4 Organization of the Investigation	Aircraft Accident Investigation Committee-Bangladesh (AAIC-BD)
2.1.5 Authority releasing the report	Aircraft Accident Investigation Committee-Bangladesh (AAIC-BD)
2.1.6 Date of publication or dispatch of report	29 May 2025
2.1.7 Brief resume of the circumstances leading to the accident/ serious incident/ investigable incident.	During take-off from Cox's Bazar Airport, immediately after take-off, the ATC controller, having found that one wheel rolled over the runway and went west of the runway abeam Tower/ Runway Centre area, informed the flight crew about the occurrence.

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3. BODY

3.1 FACTUAL INFORMATION

3.1.1 History of the flight:

3.1.1.1 Flight number	BG-436
3.1.1.2 Type of operation	Commercial (Passenger)
3.1.1.3 Last point of departure	VGCB, Cox's Bazar airport
3.1.1.4 Time of departure (Local time or UTC)	0713 UTC
3.1.1.5 Point of intended landing	Dhaka
3.1.1.6 'Flight preparation'	As per company procedure
3.1.1.7 Description of the flight and events leading to the accident/ serious incident/ investigable incident, including reconstruction of the significant portion of the flight path, if appropriate.	<p>On 16th May 2025, the aircraft S2-AJW was operated as passenger flight from Dhaka to Cox's Bazar with Call-sign BG 435 and landed at approximately 0642 UTC at Cox's Bazar. The aircraft had no technical defect. The riding engineer performed the PFI check as per the checklist and declared the aircraft serviceable for next flight to Dhaka (BG 436). The PIC accepted the aircraft and departed Cox's Bazar at 0713 UTC (Take-off 0721 UTC). According to the flight crew the take-off was uneventful. However, the ATC controller found that during the take-off roll, one wheel of the aircraft got detached from the landing gear assembly and rolled over the runway resting aside on ground. When the aircraft was climbing normally, the ATC Controller informed the flight crew about the detachment of the wheel. The PIC decided to continue the flight to Dhaka.</p> <p>During the final approach at Dhaka, the PIC extended the landing gear and requested the riding engineer to confirm the condition of the main landing gear. The riding engineer moved to the mid-section of the cabin to get a clear view of the landing gears, especially about the missing wheel. He observed that the right main landing gear had both wheels intact, whereas, the inboard main wheel (no. 2) of the left main landing gear was missing. The riding engineer informed the flight crew accordingly. The flight crew declared emergency and landed safely at VGHS at about 0820 UTC. The aircraft cleared the active runway and was switched off and parked at South Alpha taxiway. All passengers were disembarked without any injury/ harm.</p>
3.1.1.8 Location (Latitude, longitude, elevation)	VGCB Airport Cox's Bazar (21°27'07"N, 091°57'50"E, Elevation: 12 ft)
3.1.1.9 Time of the accident (Local or UTC)	0721 UTC
3.1.1.10 Whether day/night	Day

3.1.2 Injuries to Persons

Injuries	Crew	Passengers	Others
3.1.2.1 Fatal	None	None	None
3.1.2.2 Serious	None	None	None
3.1.2.3 Minor	None	None	None

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3.1.3 Damage to Aircraft (Brief Description)

3.1.3.1 Destroyed	No																														
3.1.3.2 Substantially damaged	Brief description of the Damage:																														
	(a) Damage Parts:																														
	<table><tr><th>SL No.</th><th>Part Name</th><th>Part No</th></tr><tr><td>1.</td><td>Outer Bearing Grease Seal metal Part</td><td>39-189</td></tr><tr><td>2.</td><td>Inner Bearing Grease Seal metal Part</td><td>39-188</td></tr><tr><td>3.</td><td>Cone Bearing (Inner)</td><td>28685-20629</td></tr><tr><td>4.</td><td>Cone Bearing (Outer)</td><td>29675-20629</td></tr><tr><td>5.</td><td>Bearing Cup (Inner & Outer)</td><td>29620-20629</td></tr><tr><td>6.</td><td>Bearing Roller (Qty-02)(Inner & Outer Bearing)</td><td>29685-20629 & 29675-20629</td></tr><tr><td>7.</td><td>Metal Chips</td><td></td></tr><tr><td>8.</td><td>Axle Nut</td><td>46127-3</td></tr><tr><td>9.</td><td>Saddle</td><td>46135-1</td></tr></table>	SL No.	Part Name	Part No	1.	Outer Bearing Grease Seal metal Part	39-189	2.	Inner Bearing Grease Seal metal Part	39-188	3.	Cone Bearing (Inner)	28685-20629	4.	Cone Bearing (Outer)	29675-20629	5.	Bearing Cup (Inner & Outer)	29620-20629	6.	Bearing Roller (Qty-02)(Inner & Outer Bearing)	29685-20629 & 29675-20629	7.	Metal Chips		8.	Axle Nut	46127-3	9.	Saddle	46135-1
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	8.	Axle Nut	46127-3																												
	9.	Saddle	46135-1																												
	(b) Missing Parts:																														
<table><tr><th>SL No.</th><th>Part Name</th><th>Part No</th></tr><tr><td>1.</td><td>Retainer Grease (Inner Bearing)</td><td>56-1075</td></tr><tr><td>2.</td><td>Retainer Grease (Outer Bearing)</td><td>56-1074</td></tr><tr><td>3.</td><td>Bearing Cage (Inner & Outer Bearing)</td><td>29685-20629 & 29675-20629</td></tr><tr><td>4.</td><td>Non-Metal part (Inner & Outer grease seal)</td><td>39-188 & 39-189</td></tr><tr><td>5.</td><td>Bearing Roller (Inner & Outer Bearing)</td><td>29685-20629 & 29675-20629</td></tr></table>	SL No.	Part Name	Part No	1.	Retainer Grease (Inner Bearing)	56-1075	2.	Retainer Grease (Outer Bearing)	56-1074	3.	Bearing Cage (Inner & Outer Bearing)	29685-20629 & 29675-20629	4.	Non-Metal part (Inner & Outer grease seal)	39-188 & 39-189	5.	Bearing Roller (Inner & Outer Bearing)	29685-20629 & 29675-20629													
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5.	Bearing Roller (Inner & Outer Bearing)	29685-20629 & 29675-20629																													
3.1.3.3 Slightly damaged	Nil																														

3.1.4 Other Damage:

3.1.4.1 Brief Description of 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 relevant information on duty time	Pilot in Command (PIC) Date of Birth : 15-09-1978 Age : 46+ Nationality : Bangladesh License : ATPL (A) 320 Ratings : DHC-8 Q400 Flying Experience (Total) : 11000: 00 + Flying Experience on type : 900+ License Validity : Non- Expiry Medical Status : Class 1(validity 31/01/2026)	First Officer (FO) Date of Birth : 16/05/1994 Age : 31 Nationality : Bangladesh License : CPL 792 Ratings : DHC-8 Q400 Flying Experience (Total) : 1207:05 Flying Experience on type : 1066:55 License Validity : Non-Expiry Medical Status : Class 1(validity 01/05/2026)
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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	Will be provided in the final report

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/ serious incident/ investigable incident)	<p>(a) As per ATL records and Airworthiness documents available at Engineering production and planning department of Biman, Dash-8 Q-400 aircraft, Reg. S2-AJW was serviceable before departure from Dhaka for respective flight on 16 May 2025.</p> <p>(b) Dash-8 Q-400 aircraft, Reg. S2-AJW was on transit certification at outstation Cox's Bazar with nil defect and was duly certified by the authorized riding engineer for next flight to Dhaka.</p>
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/ serious incident/ investigable incident. (If not and if of any bearing on the accident give details.)?	All parameters were within the prescribed limits during take off.
3.1.6.3 Type of fuel used	JET-A1

3.1.7 Meteorological information

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	VIS: 4000 M QNH: 1005.7 FEW: 1000 ft
3.1.7.2 Natural light conditions at the time of the accident/ serious incident/ investigable incident (sunlight, moonlight, twilight, etc.)?	During Sunlight

3.1.8 Aids to Navigation

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?	NDB: 396KHz Visual ground aids: Wind socks,
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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: 129.5MHz VHF2: 121.8 MHz
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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?	VGCB- 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?	The Flight Data Recorder (FDR) is installed in the tail section of the aircraft, within the Environmental Control System (ECS) compartment. The FDR was found to be in good condition, securely mounted in its designated location. Data was successfully retrieved from the FDR while it remained installed in the aircraft. The AAIC is waiting for the availability of the necessary data.
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3.1.12 Wreckage and impact information

<p>3.1.12.1 General information on the site of the accident/ serious incident/ investigable incident 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</p>	<p>(a) The inboard wheel (no. 2) of left main landing gear got detached during take-off roll. (b) The detached wheel was found beside the west of runway. (c) The break assembly and the wheel axle of the affected wheel were found intact. (d) Details of material failure or component malfunction remain undetermined and will be provided in the final report. (e) A few photographs are given below:</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Figure 1: Detached left main inboard (no.2) wheel</p> </div> <div style="text-align: center;">  <p>Figure 2: After parking at south alpha.</p> </div> </div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Figure 3: Missing wheel area</p> </div> <div style="text-align: center;">  <p>Figure 4: Damaged parts of the detached wheel.</p> </div> </div>
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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?	Considered not relevant to this incident.
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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?	No fire occurred, hence considered not relevant to this incident.
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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	During the initial phase of investigation, the AAIT felt that some of the damaged parts needed to be tested at OEM laboratory. The dispatching and testing of the damaged parts is under process. The results of the tests and research will be provided in the final report.
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3.1.17 Organizational and Management Information

<p>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 framework?</p>	<p>Biman Bangladesh Airlines Ltd is a CAAB approved Air Operator, Certificate No. 2 and operates both wide & narrow-body aircrafts for domestic and international flights. It has a total of 21 aircraft in its fleet. With regard to technical information, Biman is a CAAB approved Continuing Airworthiness Management Organization (CAMO) i.e. CAAB.MG.012 (Ref. AOC No.-2) under its AOC.</p> <p>The AAIT has learnt that all continued airworthiness management tasks are managed by Biman CAMO. The CAMO manager of Biman is known to ensure maintenance of its aircraft by its own CAAB approved 145 organization, duly approved by CAA Bangladesh. The area of maintenance encompasses all maintenance checks of 737-800 Aircraft, up to "C" Checks of B777-300ER & B787-8/9 Aircrafts and "A" Check of DHC-8-402 Aircrafts. At times, however, the maintenance activities are done by outside organization with CAAB approval.</p>
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3.1.18 Additional information

3.1.18.1 Relevant information not already included in 3.1.1 to 3.17.1	Will be provided in the Final Report.
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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?	The AAIC-BD uses the investigation technique which is compatible to Annex 13 and associated DOCs of ICAO.
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3.2 ANALYSIS

3.2.1 Details on the Analysis	The analysis with regard to Man, Machine, Environment, Organizational, Motivational and any other Aspect will be provided in the Final Report, if required
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3.3 CONCLUSIONS

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

3.3.1.1 Findings	Will be provided in the final report.
3.3.1.2 Causes	Will be provided in the final report.
3.3.1.3 Contributing Factors	Will be provided in the final report.

3.4 SAFETY RECOMMENDATIONS

3.4.1. Details of Safety Recommendations	Will be provided in the Final Report or as and when required.
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4. APPENDICES

4.1 Details of Appendices	Being preserved in a systematic manner in the 'Investigation Folder' held in the office of AAIC-BD.
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