



FOREWORD

FINAL REPORT

Investigation on Serious Incident of HS 748-2A Aircraft Registration S2-AAX on 16 January 2018 of Bismillah Airlines Limited at Jessore Airport of Bangladesh

This serious incident investigation has been performed in accordance with Civil Aviation Act 2017, pursuant to Part 13 of CAR 1984 and in conformity with Annex 13 to the Chicago Convention on International Civil Aviation. The delegation of investigating authority was accorded to the Head of Aircraft Accident Investigation Group of Bangladesh (AAIG-BD); vide Office Order CAAB/CS/32/AAIG-BD/01/MASTER, dated 22 June 2016.

The Head of AAIG-BD received a Mandatory Occurrence Report (MOR) from the Managing Director Bismillah Airlines about the occurrence at Jessore Airport, Bangladesh on 16 January 2018 of Flight BML 211 involving a HS 748 aircraft, Registration Mark S2-AAX.

Immediately following the occurrence, the Head of the AAIG-BD constituted an Aircraft Accident Investigation Team (AAIT) comprising three (03) investigators to conduct the necessary investigation.

The AAIG-BD received the Preliminary Investigation Report from the AAIT within 30 days of the occurrence and published the same on 16 February 2018. The Preliminary Report was sent to all relevant States and Organizations as per Standard 7.1 of Annex 13 on 16 February 2018 for the consumption of public.

The AAIG-BD sent the draft final report to all relevant States and Organizations in accordance with the requirements of Standard 6.3 of ICAO Annex 13 and the Compendium on Aircraft Accident Investigation Group (AAIG-BD) for comments. Comments received from all relevant States and Organizations have been incorporated in this Final Report.

The AAIG-BD has drawn a few safety recommendations for relevant parties to take corrective actions at the earliest which have been sent to the relevant States and Organizations for their action as per Standard 6.8 of 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.

The information contained in this report has been derived from the factual information and evidences gathered during the ongoing investigation of the occurrence.

The AAIG-BD reiterates that in the event new evidence appears in future that requires changes to the information depicted in this report, the investigation will be reopened as per Standard 5.3 of ICAO Annex 13. However, this final report represents the complete investigation, which will be made public in due course of time, in conformity with ICAO Annex 13.

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FINAL INVESTIGATION REPORT OF HS-748 AT JESSORE AIRPORT BANGLADESH ON 16-01-2018

A. Progression of Events

SN	Events	Date
1.	Date of the Occurrence	16-01-2018
2.	Memorandum & AAIT as per Standard 5.1 of Annex 13.	18-01-2018
3.	Circulation of Notification to relevant States & others as per Standard 4.1 of ICAO Annex 13.	22-01-2018
4.	Circulation and Publication of 'Preliminary Report' as per Standard 7.1 of Annex 13.	16-02-2018
5.	Circulation of 'Draft Final Report' for Comments as per Standard 6.3 of ICAO Annex 13.	18-04-2019
6.	Circulation of 'Final Report' as per Standard 6.4 of ICAO Annex 13.	18-07-2019
7.	Circulation of 'Final Report' together with the 'Format' on the preventive action taken or under consideration, or the reasons why no action will be taken, on the 'Safety Recommendations' as per Standard 6.8 of ICAO Annex 13.	18-07-2019
8.	Publication of 'Final Report' in (http://caab.portal.gov.bd/) as per Standard 6.5 of ICAO Annex 13.	18-07-2019
9.	Deadline on the reception of States' feedbacks on the preventive action taken or under consideration, or the reasons why no action will be taken, on the 'Safety Recommendations' as per Standard 6.11 of ICAO Annex 13.	28-10-2019
10.	Estimated Closure of the Investigation following compilation of 'Actions' on the 'Safety Recommendations'	31-10-2019
11.	Publication of 'Final Report' in (http://caab.portal.gov.bd/) which will contain States' feedbacks on the 'Safety Recommendations'.	15-11-2019
12.	AAIG-BD Action on Reopening of investigation as per Standard 13 of ICAO Annex 13 (If required).	Reserved

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DRAFT FINAL INVESTIGATION REPORT OF HS 748 AIRCRAFT AT JESSORE AIRPORT ON 16-01-2018

1. TITLE

Investigation on Serious Incident of HS 748-2A Aircraft, Registration S2-AAX on 16-01-2018 of Bismillah Airlines Limited at Jessore Airport of Bangladesh

Para	Heading	Description
1.1	Name of Operator	Bismillah Airlines Limited
1.2	Name of Manufacturer	Hawker Sidley & British Aerospace Company
1.3	Aircraft Model	HS748-2A
1.4	Aircraft Nationality	Bangladesh
1.5	Aircraft Registration Marks	S2-AAX
1.6	Place of Occurrence	Jessore Airport, Bangladesh
1.7	Date of Occurrence	16 January 2018

2. SYNOPSIS

Para	Heading	Description
2.1	Notification of accident to national and foreign authorities	Dispatched to all addresses as per Chapter 4, 4.1 of ICAO Annex 13 as below: a) State of Occurrence: MOCAT, CAA Bangladesh and Bismillah Airlines Ltd; b) State of Registry : As Above; c) State of Operator: As above; d) State of Manufacturer: AAIB Farnborough, United Kingdom e) State of Design: Rolls Royce, United Kingdom f) Organizations: International Civil Aviation Organization (ICAO).
2.2	Accident investigation Authority	Aircraft Accident Investigation Group of Bangladesh (AAIG-BD) 4 th Floor, CAAB Headquarters, Kurmitola, Dhaka-1229, Bangladesh
2.3	Accredited Representation	AAIB desired to be an Accredited Representative for being the manufacturer of the aircraft. To this effect, a Senior Inspector of AAIB participated in the investigation as a resident participant.
2.4	Organization of the Investigation	Aircraft Accident Investigation Team (AAIT), designated by AAIG-BD
2.5	Authority releasing the report	Aircraft Accident Investigation Group of Bangladesh (AAIG-BD)
2.6	Date of publication of report	18 July 2019
2.7	Brief resume of circumstances leading to the accident	a) BML 211 of Bismillah Airlines Ltd conducted an authorised cargo flight from Cox's Bazar (VGCB) to Jessore (VGJR) on 16 January 2018. b) On 16 January 2018, the day of the serious incident, the nonscheduled cargo flight took- off from Cox's Bazar (VGCB) at 04:53 UTC and landed with landing weight of 18,270 kg at Jessore (VGJR) at 06:03 UTC without any incident and/or

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Bangladesh**DRAFT FINAL INVESTIGATION REPORT OF HS 748 AIRCRAFT AT JESSORE AIRPORT ON 16-01-2018**

		<p>problem. But, after clearing the Runway while taxiing by following the eastern taxi yellow guide line for parking into the BAY-1 at Jessore apron, four (4) amber caution lights illuminated on the hydraulic panel. The response of nose wheel steering and the brake became non-effective. The hydraulic quantity pressure depleted to zero. The aircraft veered to the left and went out of the concrete apron into the soft ground. The left main wheel stroke the nearby concrete slab and collapsed. The aircraft also sustained left engine propeller damage.</p> <p>c) According to the captain, he carried out visual inspection and observed that the hydraulic reservoir installed in right hand engine was completely empty.</p> <p>d) Jessore Airport Fire & Rescue (CFR) personnel sighted the aircraft's ground location from the control tower and assisted the crew and maintenance personnel to secure the aircraft.</p> <p>e) The aircraft was damaged extensively. During initial investigation the following damages were found:</p> <ol style="list-style-type: none"> 1. Port side four (4) blade tips were bent and damaged; 2. Port side Landing gear was broken from attachment; 3. Port side Landing gear door was broken; 4. Port side Landing nacelle was broke and damaged; 5. Hydraulic filter inlet connection was found broken; and, 6. Hydraulic fluid was spilled and spread out <p>f) The Captain, the Co- Pilot and all other crew onboard were found unhurt.</p>
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3. FACTUAL INFORMATION**3.1 History of Flight**

Para	Heading	Description
3.1.1	Flight number	BML-211
3.1.2	Type of operation	Non-scheduled Cargo
3.1.3	Last point of departure	Cox's Bazar Airport ((VGCB), Cox's Bazar, Bangladesh
3.1.4	Time of departure (Local time or UTC)	04:53 UTC
3.1.5	Point of intended landing	Hazrat Shah Jalal International Airport (VGHS), Dhaka, Bangladesh
3.1.6	Description of the flight and events	a) The aircraft departed from Cox's bazar Airport and landed at Jessore Airport without any incident or occurrence.

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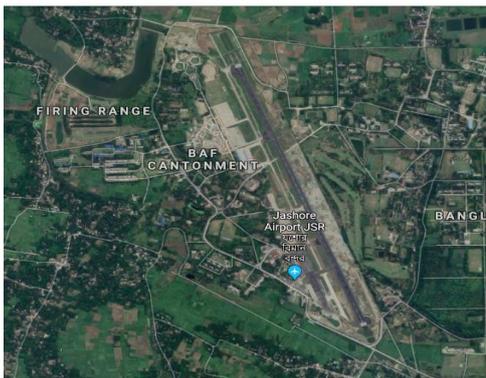
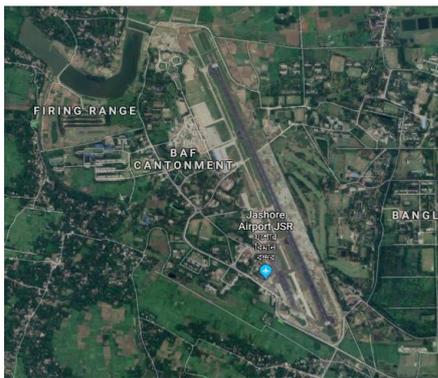
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	leading to the accident	b) After clearing the Runway via Romeo taxi track while taxiing into and following the eastern taxi yellow guide line for parking into the BAY-1 at Jessore apron, the captain noticed four (4) amber caution lights to illuminate on the hydraulic panel. Subsequently, the captain noticed to have lost the response of nose wheel steering. Upon application of brakes, he also felt not having any effect of aircraft on brake paddles. Soon after the captain and co-pilot checked and found hydraulic quantity pressure depleted to zero. The aircraft veered to the left and went out of the concrete apron into the soft ground. The left main wheel stroke the nearby concrete slab causing the affected wheel to bend rearward and ultimately collapsed completely. The left engine propeller struck the ground with all four (4) blades bent and damaged. As per flight crew, both tried to build-up hydraulic pressure with hand pump but were in vain. The Captain shut down both engines at that time. The aircraft was lying on the soft ground at western side of parking bay number 1 of Jessore airport apron. Subsequently, all four (4) crew onboard disembarked the aircraft through the normal way.
3.1.7	Reconstruction of significant portion of the flight path	 <p align="center">Occurrence site at JSR Airport</p>  <p align="center">Occurrence site at JSR Airport</p>
3.1.8	Location (latitude, Longitude, elevation)	a) Location: North: 23 Degrees, 11 Minutes; East: 89 degrees, 10 minutes. b) Elevation: 20 Feet
3.1.9	Time of the accident (local time or UTC)	06:08 UTC
3.1.10	Whether Day/night	Day

3.2 Injuries to Persons

Para	Injuries	Crew	Passenger	Others
3.2.1	Fatal	None	None	None
3.2.2	Serious	None	None	None
3.2.3	Minor	None	None	None

3.3 Damage to Aircraft (Brief description)

Para	Heading	Description
3.3.1	Destroyed	No

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3.3.2	Substantially damaged	<p>a) The aircraft was damaged extensively as follows:</p> <ol style="list-style-type: none"> 1. Port side four (4) blade tips were bent and damaged; 2. Port side Landing gear was broken from attachment; 3. Port side Landing gear door was broken; 4. Port side Landing nacelle was broke and damaged; and, 5. Hydraulic filter inlet connection was found broken.
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The aircraft was being lifted by crane and was positioned on the airport's parking apron



Aircraft's hydraulic system reservoir and filters, the location of the failed hydraulic fitting is marked in the red rectangle

Picture of the failed hydraulic fitting

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Para	Heading	Description
3.4.1	Pilot information, Pilot in Command (PIC)	Pilot in Command: Age: 61 years CAA Bangladesh Conversion License: ATPL-283 Date of Issue:11.03.2008 Valid up to: 04.08.2022 Category: Aeroplane Ratings: HS-748 & SAAB-340 (Group-1) Instrument Rating Valid up to: 31.08.2018 Date of Medical: 06.08.2017 Medical Valid Up to: 20.07.2018 (Class-1) Total Flying Hours (HS-748): 3800 Hrs Grand Total Flying Hours: 13, 841:00 Hrs
3.4.2	Pilot information, Co-Pilot	Co-Pilot: Age:55 Years CAA Bangladesh License: CPL- 148, IR Date of Issue:10.12.1988 Valid upto:10.12.2023 Category: Aeroplane Ratings: HS-748(Group-11) & PA-38 (Group-1) Instrument Rating Valid upto:31.08.2018 Date of Medical:21.01.2018 Medical Valid Upto:20.07.2019 (Class-1) Grand Total Flying Hours: 1767:46 Hrs
3.4.3	Cabin Crew	Nil due cargo flight.
3.4.4	Other personnel	Nil due cargo flight.

3.5 Aircraft information

Para	Heading	Description
3.5.1	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)	Aircraft was airworthy; No deficiency was detected prior to release
3.5.2	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.)	a) Performance status: Satisfactory; b) Mass & Centre of gravity: Within limit; c) Landing weight: Within limit
3.5.3	Type of fuel used	JET A-1

3.6 Meteorological information

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Para	Heading	Description
3.6.1	Brief circumstances including both forecast and actual conditions, and the statement on the meteorological conditions appropriate to the availability of meteorological information to the crew	Cox's Bazar: Date: 16-01-2018; Time: 0400 UTC; S/Wind: 060/08 Kts; Vis: 1200 m; Present Wx: Mist; Cloud: Nil; Temp/Dew point: 18/17 C; QNH: 1013 Hpa Jessore: Date: 16-01-2018; Time: 0600 UTC; S/Wind: 020/06 Kts; Vis: 1000 m; Present Wx: H; Cloud: Scattered ; Temp/Dew point: 22/13 C; QNH: 1014.9 Hpa Note: There was no evidence that weather adversely affected the circumstances of the accident and the pilots' decision making.
3.6.2	Natural light conditions at the time of the accident (sunlight, moonlight, twilight, etc.)	Sunlight

3.7 Aids to navigation

Para	Heading	Description
3.7.1	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	Cox's Bazar: NDB only; Jessore: DOR and NDB. Note: Sufficient Navigational Aids were available for operation of the aircraft. There was no evidence of non-availability of Navigational Aids that adversely affected the circumstances of the accident and the pilot's decision making.

3.8 Communications.

Para	Heading	Description
3.8.1	Pertinent information on aeronautical mobile and fixed service communications and their effectiveness	a) Cox's Bazar: Tower: 129.5 Mz (Primary), 128.5 Mz (SRI) b) Jessore: Ground: 121.8 Mz; Tower: 123.2 Mz (Primary), 123.9 Mz (SRI) c) Communication between S2-AAX and the air traffic control of Jessore Airport (VGJR) and Cox's Bazar (VGCB) Bangladesh were normal. There was communication with VGRJ before the accident. No evidence was found to mention that any aspect of the communications between the pilot and ATC adversely affected the circumstances of the accident and the pilots' decision making.

3.9 Aerodrome information

Para	Heading	Description
3.9.1	Pertinent information associated with the aerodrome, facilities	Cox's Bazar: RWY 17/35; Dimension: 2042 x 38 m; PCN: 51 F/C/W/T; RWY Surface: Bituminous concrete; RESA: 90 x 76 m; Slope: 0%; Lights: Simple ALS, Runway edge & PAPI and Aerodrome Beacon Light.

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DRAFT FINAL INVESTIGATION REPORT OF HS 748 AIRCRAFT AT JESSORE AIRPORT ON 16-01-2018

	and condition, or with the takeoff or landing area if other than an aerodrome	<p>Jessore: RWY 16/34; Dimension: 2438 x 45 m; PCN: 18 F/C/Y/T; RWY Surface: Bituminous concrete; RESA: 90 x 90 m; Slope: 0%, Lights: Simple ALS, Runway edge & PAPI and Aerodrome Beacon Light.</p> <p>Note: The Runway landing area, Airport taxi area and Apron area at Jessore Airfield was adequate for the aircraft and all CFR/ FFS facilities were available which aided to promptly evacuate all onboard safely.</p>
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3.10 Flight recorders

Para	Heading	Description
3.10.	Location of the flight recorder installations in the aircraft, their condition on recovery and pertinent data available therefrom	The FDR & CVR were found with the aircraft and were secured by the AAIT. However, the AAIT did not feel necessary to decode the CVR and FDR due to the nature of the occurrence as the case could be identified by the AAIT.

3.11 Wreckage and impact information

Para	Heading	Description
3.11.1	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	The aircraft was damaged including its L/H side four (4) propeller blades, landing gear and associated some area.



Aircraft post incident view

3.12 Medical and Pathological Information

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Para	Heading	Description
3.12.1	Brief description of the results of the investigation undertaken and pertinent data available therefrom.	None among the Pilots and other crew suffered any injury. However, the pilots were sent for medical checkup. The pilots were certified to be physically and mentally fit by the doctor.

3.13 Fire

Para	Heading	Description
3.13.1	If fire occurred, information on the nature of the occurrence, and of the firefighting equipment used and its effectiveness	Jessore: Fire Category 6; Note: There was no evidence of fire to the aircraft and its engine.

3.14 Survival aspects

Para	Heading	Description
3.14.1	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 crew were immediately disembarked with the help of CFR/FFS of Jessore Airport. None sustained any injury.

3.15 Tests and research

Para	Heading	Description
3.15.1	Brief statements regarding the results of tests and research	No technical test was carried out as the cause of the occurrence was obviously detected.



The damaged propeller blades and lower left engine cowling

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**DRAFT FINAL INVESTIGATION REPORT OF HS 748 AIRCRAFT AT JESSORE AIRPORT ON 16-01-2018**

Collapsed & buckled left MLG and Broken / Wrecked MLG under wing frame

3.16 Organizational and Management Information

Para	Heading	Description
3.16.1	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>a) The operator's main base is located at Cox's Bazar Airport (VGCB). All its main engineering and operational establishments are also located at Cox's Bazar. Station facilities of the operator are available at Dhaka and Jessore stations. The operator usually operates cargo flights with HS-748 type of aircraft carrying cargo from Cox's Bazar to Jessore while ferries empty aircraft from Jessore to Cox's Bazar.</p> <p>b) The Operator's management key posts holders are experienced.</p>

3.17 Additional information

Para	Heading	Description
3.17.1	Relevant information not already included in 3.1 to 3.16	Nil

3.18 Useful or effective investigation techniques

Para	Heading	Description
3.18.1	When useful or effective investigation techniques have been used during the investigation, briefly indicate the reason for using these techniques	<p>The AAIT performed following procedure during the course of investigation:</p> <p>a) Visited the Crash site to observe the wreckage and took evidences as applicable;</p> <p>b) Visited Aerodrome Control Tower, Approach and Area control centre;</p> <p>c) Collected ATC- Pilot Records and prepared Transcripts;</p> <p>d) Necessary Engineering and Operations documents were collected from</p>

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Bangladesh**DRAFT FINAL INVESTIGATION REPORT OF HS 748 AIRCRAFT AT JESSORE AIRPORT ON 16-01-2018**

	and refer here to the main features as well as describing the results under the appropriate subheadings 3.1 to 3.17	Bismillah Airlines; e) Secured CVR and FDR, which were, however not decoded due to the type of occurrence; f) Collected the weather information of the time of occurrence; g) Taken Statements and Interviewed both the flight crew; h) Interviewed concerned ATC Officers, and senior officials from the HSIA; i) Examined ATC R/T Transcript, Photographs, Interview of personnel, documents and available information to ascertain the contributing factors and probable cause of the serious incident to prepare this final draft report.
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4. ANALYSIS

[The following analysis has been made based on the information documented in 'Factual information' and which is relevant to the 'Determination of Conclusions' and 'Causes and/or Contributing Factors']

Para	Heading	Description
4.1	Man	Delay in detecting the four hydraulic failure lights, especially by the pilot monitoring, during the landing roll and early part of taxiing into the apron.
4.2	Machine	a) The hydraulic adapter may have failed at some point after landing. With the left hand hydraulic pump continuing to demand fluid, the fluid pressure may have made a leak in the system that resulted pressure and fluid loss from the main hydraulic system. After loss of the main hydraulic system, the brake accumulators provided pressure for several applications of the brake, which indicates that braking during landing roll and initial taxi was available. Eventually, pressure in the brake accumulators depleted and braking action was lost; b) The illumination of the 4 hydraulic warning lights was obvious regarding the failure of the hydraulic adapter (fitting). As the warning lights are not in the most conspicuous location, it was unlikely that the flight crew could have noticed when they first illuminated, particularly as the last part of the landing roll and the upcoming taxiing of the aircraft by the flight crew required looking out of the wind shield and window; c) The aircraft sustained major damages to the left landing gear and lower wing as well as the left propeller and engine assembly as a result of hitting the ground due to the collapse of the left landing gear; d) It appeared that soon after landing at Jessore airport, the aircraft's hydraulic system failed, resulting in the loss of hydraulic pressure which powers the aircraft's steering and braking. e) It was noted that there were traces of hydraulic fluid leak on the taxiway and not on the runway. Hence it could be presumed that a hydraulic adapter together with the 'hydraulic fitting', located at the hydraulic pressure filter, had cracked and failed during the last part of the landing roll when the aircraft was turned into the taxiway Romeo;

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		<p>f) Although the reason for the hydraulic fittings is presumed, given the age of the aircraft, and there is likelihood that these fittings may have been installed when the aircraft was initially manufactured in 1979, hence having possibility that material fatigue leading to the damage/crack of the hydraulic fitting may be factor to the loss fluid;</p> <p>g) It may be mentioned here that there is no task card found in the approved Aircraft Maintenance Schedule of this aircraft in connection to the failed hydraulic fitting as this hydraulic fitting has been considered as 'on condition item' and not 'time limited item';</p> <p>h) The investigation team inspected hydraulic fitting of other HS 748 aircraft (Registration Marks: S2-ADW) available in the fleet of Bismillah Airlines Ltd and no crack, bend & damage was noted;</p> <p>i) Following the collapse of the left main landing gear after striking a concrete structure at the side of the taxiway and ditch that was under construction, the left propeller, left engine, left inboard wing and left landing gear structure collided with the concrete surface causing significant structural damage of aircraft.</p>
4.3	Environment	Nothing significant was observed.
4.4	Organizational Aspect	The company does not have any established and exclusive maintenance policy for extremely aging aircraft operations i. e. the affected aircraft which was manufactured in 1979;

5. CONCLUSIONS

[Listed below are the findings, causes and/or contributing factors established in the investigation. The list of causes and/or contributing factors include both the immediate and the deeper systemic causes and/or contributing factors]

6. FINDINGSS

Para	Heading	Description
6.1	Aircraft	<p>a) The aircraft had valid Certificate of Airworthiness.</p> <p>b) The preflight and daily schedule inspections were carried out by the company before flight.</p> <p>c) The en-route flight was un-eventful with regard to aircraft airworthiness;</p> <p>d) The aircraft landed at Jessore Airport without any incident till entering the parking area;</p> <p>e) There were traces of hydraulic fluid on the taxiway;</p> <p>f) The pilot lost the control to steer the aircraft and failed to brake and stop the aircraft while taxiing;</p> <p>g) The aircraft went off the taxiway before coming to parking bay;</p> <p>h) The left landing gear hit a concrete block next to a large under-construction ditch and collapsed;</p> <p>i) Aircraft structural damage occurred as follows:</p> <ol style="list-style-type: none">1. Left propeller2. Left engine3. Left inboard wing4. Left landing gear

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		j) The lower left engine cowling was deformed; k) Hydraulic fittings, located at the hydraulic pressure filter, fractured and failed.
6.2	Flight Crews	The pilots had valid licenses with medical fitness and were rated in type of aircraft.
6.3	Flight Operations	No significant observation.
6.4	ATC	No significant observation
6.5	CVR, FDR and ATC Transcript	CVR and FDR were not decoded; and, No significant observation was found in ATC transcript.

7. CAUSES

Metal fatigue leading to the breakage and dislocation of the hydraulic fitting that gave rise to loss of hydraulic fluid resulting the loss of steering wheel control and braking during taxing of the aircraft.

8. CONTRIBUTING FACTORS**a) Human factor:**

Delay in detecting the four hydraulic failure lights, especially by the pilot monitoring, during the landing roll and early part of taxing into the apron owing to the conspicuous location of the lights when the pilots' eyes usually remain outside the cockpit;

b) Weather factor: Nothing significant**9. INTERMEDIARY SAFETY RECOMMENDATIONS**

There was no Intermediary Safety Recommendation issued in relation to this serious incident

10. SAFETY RECOMMENDATIONS**a) Flight Crew:**

Pilots of all Bangladeshi Air operators should emphasize that the Pilot Monitoring (PM) keep a positive look inside and outside the cockpit whenever so necessary and whenever applicable for the interest of safety;

b) Air Operator:

1. Bismillah Airlines Ltd should liaise with the aircraft manufacturer to confirm if the hydraulic fittings on the aged aircraft in their fleet should be replaced as a precautionary measure to avoid recurrence of similar occurrence in future;
2. Quality Management System and Safety Management System should be developed, implemented and maintained adequately by all air operators of Bangladesh, especially all those using aged aircraft.

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11. Comments from States and Action by AAIG-BD on 'Draft Final Report'

SN	Comment from State	Action by AAIG-BD
1.	<p>Bismillah Airlines Ltd:</p> <p>The airline is currently using the latest version of the Manufacturer's (British Aerospace) Recommended Maintenance Schedule (RMS), from where BML has developed her Aircraft Maintenance Program for all the necessary schedule maintenance based on calendar life and cycles. The aircraft is within the range of its design life. Therefore, as per Manufacturer's no additional maintenance program was necessary. Moreover, BML is following the full recommended maintenance schedule rather than following LUMPS (Low Utilization Maintenance program) as our aircraft utilization is much lower, less than 200 hours per year;</p> <p>In reference to (a), the contributing factor Para 8 (c) may be removed from the draft report</p>	<p>(a) Comments on Section 6.4 of the Draft Report have been incorporated in this 'Final Report' by expunging the contents of the Para 6.4;</p> <p>(b) Comments on Section 8 (c) of the Draft Report have been incorporated in this 'Final Report' by expunging the contents of the Para 8 (c).</p>
2.	No further comments received from any State	N/A

12. Feedback from States and Actions by AAIG-BD on 'Safety Recommendations' of the 'Draft Final Report'.

SN	Comment from State	Action by AAIG-BD
1.	Will be included when received, but not later than 28 September 2019	Will be incorporated upon receipt of feedback.

13. Important Instruction on Safety Recommendations

13.1 Instruction to all Concerned with Regard to Action on 'Safety Recommendations' as Below:

- (a) This document contains 'Privileged/Confidential' information. If you are not the intended addressee, please do not copy, distribute or take any action in reliance thereon. Please notify the originator as mentioned in 'Foreword' immediately if you receive this document by mistake.
- (b) The State receiving the 'Safety Recommendations', outlined in Section 10, is required to inform the Head of AAIG-BD, within ninety (90) days of the date of the transmittal correspondence, of the preventive action

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taken or under consideration, or the reasons why no action will be taken. This is as per Standard 6.10 of Annex 13;

- (c) The AAIG-BD has implemented procedures to record the responses received to the safety recommendation issued, which is as per Standard 6.11 of Annex 13; and,
- (d) The Head of AAIG-BD will be obliged if the State that receives the 'Safety Recommendation' implements procedures to monitor the progress of the action taken in response to that safety recommendation, as per 6.12 of Annex 13, and provide feedback in the table below (13.2):

13.2 Table for Action on Safety Recommendations by State/Organization:

Section & Para	Action by	Preventive Action Taken	Action Under Consideration	Reasons Why No Action Will Be Taken

14 Appendices

[Included, as appropriate, any other pertinent information considered necessary for the understanding of the Final Report]

Systematically documented in file.

15 Reopening of Investigation

Reserved

END

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