

ACCIDENT INVESTIGATION COORDINATING COMMITTEE

Republic of Maldives

SAFETY INVESTIGATION REPORT 2024/03

FINAL REPORT

ACCIDENT INVOLVING

DHC-6-300 AIRCRAFT, REGISTRATION 8Q-TBB

AT BATHALA WATER AERODROME, MALDIVES

ON 13 OCTOBER 2024

INTRODUCTION

Maldives is a signatory to the Convention on International Civil Aviation (Chicago, 1944) which established the principles and arrangements for the safe and orderly development of international air transport. Article 26 of the Convention obligates Signatories to investigate accidents and serious incidents to civil aircraft occurring in their State.

This report is based upon the investigation carried out by the Accident Investigation Coordinating Committee (AICC) in accordance with Annex 13 to the Convention, the Civil Aviation Act 2/2001 and the Civil Aviation Regulations. The sole objective of this investigation is to prevent accidents and serious incidents. It is not the purpose of this investigation to apportion blame or liability.

In investigating this accident, AICC was assisted by Trans Maldivian Airways (TMA).

All timings in this report are local time unless otherwise stated. Time difference between local and UTC is +5 hrs.

The report is released on 10 December 2025.

Mr. Abdul Razzak Idris

Chairperson

Accident Investigation Coordinating Committee

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LIST OF ABBREVIATIONS

AICC Accident Investigation Coordinating Committee

AMO Aircraft Maintenance Organisation

ATL Aircraft Technical Log

BTH Operator designated three letter code for Bathala water

aerodrome

CAMO Continuous Airworthiness Management Organisation

CPCP Corrosion Protection and Corrosion Prevention

CPL-A Commercial Pilot License - Aeroplane

DHC-6-300 De Havilland Canada DHC-6, series 300 aircraft

EMMA Equalized Maintenance for Maximum Availability

FDR Flight Data Recorder

FO First Officer

lbs. Pounds

LH Left Hand

MCAA Maldives Civil Aviation Authority

MCAR Maldives Civil Aviation Regulations

MLE IATA designated three letter code for Velana

International Airport

MSN Manufacturer Serial Number

OPC Operator Proficiency Check

PF Pilot Flying

PIC Pilot-in-Command

TAC Total Air Cycles

TAT Total Air Time

TMA Trans Maldivian Airways

VFR Visual Flight Rules

VHF Very High Frequency

UTC Coordinated Universal Time

SYNOPSIS

On 13 October 2024, at about 08:30 hrs. (03:30 UTC), a De Havilland Aircraft of Canada Limited, Model DHC-6-300 on floats (Registration Markings 8Q-TBB), operated by Trans Maldivian Airways, whilst landing at Bathala water aerodrome (Alif Alif Atoll), impacted a swell and bounced. The crew attempted a go-around unsuccessfully. The aircraft banked to left and dropped onto the water. The aircraft sustained substantial damage.

There were no reports of injuries to any of the passengers or crew members onboard although two children reported bumping their heads somewhere.

The incident was reported to the AICC at 11:36 hours, and an investigation was initiated on the same day.

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1 FACTUAL INFORMATION

Aircraft Legal Owner: Tunisavia – Société Tunisienne De

Transports Services Et Travaux

Aériens, Tunisia

Registered Owner: Trans Maldivian Airways Pvt Ltd

Aircraft Type: DHC-6-300 (Floatplane)

Operator: TMA

(Air Operator Certificate No.005)

Registration: 8Q-TBB

Location of Occurrence: Bathala water aerodrome

04° 04' 44.6"N; 72° 56' 38.5"E

Date and Time: 13 October 2024 at 08:30 hours

Number of Persons on board: 13

1.1 History of Flight

1.1.1 Background

The aircraft was operating a Charter Service on route Malé - Halaveli – Bathala – Malé. Having successfully completed Malé - Halaveli sector, the aircraft took off from Halaveli outbound to Bathala with 10 passengers, and three crew onboard.

On approach to Bathala, the Pilot Flying (PF) had to slightly deviate from the normal approach due to the position of a Dhoani in the approach path and the aircraft touched down on water with a little higher than normal flare. At touchdown the aircraft encountered a swell, resulting in the aircraft bouncing. The PF immediately called for a go-around, which the PIC concurred. Full power was given and flaps 10° were set.

Initially, the aircraft appeared to climb slightly, but then yawed left, failed to gain sufficient lift, and dropped on the water, striking the left float and wing. The right engine generator caution light illuminated concurrently, followed by

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a flame-out of the right-hand engine. The PIC subsequently secured the engine. The aircraft came to a stop facing south-southwest. The crew then sailed the aircraft to the floating platform and was secured to the platform.

At the time of the incident the weather conditions were described by the crew as winds of approximately 10-12 knots from the direction of 260-270 with a light drizzle of rain, and sea swells of approximately 1.5 ft near Bathala. Visibility remained generally good. Bathala is designated as a Category A water aerodrome by the Operator.

Aircraft sustained substantial damage at various locations.

There were no injuries to passengers or crew, though two children bumped their heads somewhere, but no injuries were seen.

All 10 passengers were safely disembarked onto the floating platform and later transferred to the resort island by Dhoni.

The Company was promptly informed of the occurrence, and support calls were received from operations, engineering, and safety staff. The crew manually pumped water from the damaged right float for buoyancy until aircraft maintenance engineers arrived approximately two hours later.

Upon returning to Malé, the crew underwent drug and alcohol testing. Both the PIC and FO were later instructed to attend interviews conducted by AICC, as part of the investigation initiated.

1.2 Injuries to Persons

Injuries	Flight Crew	Cabin Crew	Passengers	Total on	Others
				board	
Fatal	0	0	0	0	0
Serious	0	0	0	0	0
Minor	0	0	0	0	0
Nil	2	1	10	13	0
Total	2	1	10	13	0

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1.3 Damage to aircraft

Both LH and RH wings sustained near-symmetrical impact damages on ailerons, fore flaps, trailing edges, skins, ribs, and hinges. Additional localized damage was noted to trim tabs, wing tips, and on the RH side the inboard trailing flaps.

1.3.1 Left-Hand (LH) Wing

- 1. Aileron & Flaps: Aileron assembly and outboard fore flap bent upwards with impact damage between STN 310–376.20.
- 2. Trailing Edge & Shroud: Trailing edge, shroud top and bottom skins damaged between STN 310–376.20.
- 3. Wing Structure: Shroud ribs and top skins affected between STN 347.50–376.20, and outboard ribs and bottom skins affected between STN 310–376.20.
- 4. Hinge & Attachments: Wing hinge at STN 376.20 damaged.
- 5. Additional Components: Aileron trim tab, wing tip, and outboard rib/skin sections damaged in the STN 310–376.20 area.

1.3.2 Right-Hand (RH) Wing

- 1. Aileron & Flaps: Aileron assembly and outboard fore flap bent upwards between STN 310–376.20.
- 2. Trailing Edge & Shroud: Trailing edge, shroud top and bottom skins damaged between STN 310–376.20.
- 3. Wing Structure: Shroud ribs and top skins affected between STN 347.50–376.20, and outboard ribs and bottom skins affected between STN 310–376.20.
- 4. Hinge & Attachments: Wing hinge at STN 376.20 damaged.
- 5. Additional Components: Aileron trim tab, wing tip, and outboard rib/skin sections damaged in the STN 310–376.20 area.
- 6. Inner Flap: Inboard trailing flap bent upwards at STN 72.5.

1.3.3 Right-Hand (RH) Float

1. Skin, Chine and Gunwall: Outboard skin and chine cracked at Bulkhead 23, and inboard skin and chine buckled between Bulkheads 12 to 14. Top

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skin and gunwall buckled between Bulkheads 21 to 24. Main strut (pylon) skin damaged.

- 2. Front Bumper, RH Cabin and LH Cargo Step: Detached.
- 3. Drag Wire and Vertical Strut Eye Bolt: Broken
- 4. Fairings: Fwd and center fairing damaged.

1.3.4 Other Damage

No other damage was reported.

1.4 Personnel Information

1.4.1 Pilot-In-Command

Age:	33 years
Nationality:	Maldives
Gender:	Male
Type of License:	CPL-A
License issued on:	13-12-2022
License expires on:	12-12-2027
Type of medical:	Class 1
Medical issued on:	17-07-2024
Medical expires on:	16-072025
Types flown:	DHC-6
Hrs. on type:	8098 hrs
Ratings:	DHC-6 Sea
Last Proficiency check:	OPC completed on 14 July 2024
Total hours as PIC:	2347 Hrs
Total flight time:	8356 Hrs
Last 90 days:	169 Hrs
Last 28 days:	73.1 Hrs
Last 24 hours:	9 hrs
Previous rest period:	09-11 October 2024

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1.4.2 Co-pilot

Age:	30 Years
Nationality:	Maldivian
Gender:	Male
Type of License:	CPL-A
License issued on:	24-05-2023
License expires on:	23-05-2028
Type of medical:	Class 1
Medical issued on:	29-02-2024
Medical expires on:	28-02-2025
Types flown:	DHC-6
Hrs. on type:	1240 Hrs
Ratings:	DHC-6 Sea
Last Proficiency check:	LPC with OPC completed on Jun 2024
Total flight time:	1440 Hrs
Last 90 days:	215.2 hrs
Last 28 days:	68.9 Hrs
Last 24 hours:	9 hrs
Previous rest period:	08-10 October 2024

1.4.3 Cabin Crew

Age:	20 Years
Nationality:	Maldives
Gender:	Male
Type of License:	Cabin Crew License
License issued on:	05 December 2023
License expires on:	04 December 2028
Type of medical:	Cabin Crew / LAPL
Medical issued on:	25 October 2023
Medical expires on:	25 October 2025
Previous rest period:	08-10 October 2024

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1.5 Aircraft Information

DHC-6-300 aircraft bearing MSN 575 was built in 1978 by de Havilland Canada. The aircraft was registered in the Maldives for the first time on 10 October 2023 and ever since it has been in operation with TMA.

1.5.1 General Information - Airframe

The DHC-6-300 "Twin Otter" aircraft is an unpressurised, all-metal, high wing aircraft powered by two Pratt & Whitney PT6A-27 engines driving three bladed, reversible-pitch, full feathering Hartzell propellers. The aircraft is designed for seating two pilots, side by side with dual controls, standard and optional flight instrumentation.

Manufacturer	De Havilland Canada		
Model	DHC-6-300 series		
Manufacturer's serial number	575		
Year of Manufacture	1978		
Nationality	8Q (Republic of Maldives)		
Registration Markings	8Q-TBB		
Certificate of Registration	Valid since initial issue on 10 Oct 2023		
Owner	Tunisavia-Societe Tunisienne De Transports Services Et Travaux Aeriens		
Operator	TMA		
Validity of Certificate of Airworthiness	Valid since initial issue on 10 October 2023		
	(Normal category)		
Airworthiness Review Certificate	Issued by MCAA on 28 November 2023		
	Valid until 27 November 2024		
Total Flying Hours since manufacture	24,778.43 Hrs.		
Total Landings since manufacture	23,027 landings		
Total Flying Hours since overhaul	Not applicable		
Last periodic inspection (Routine)	24,777.38 hrs/23024 cycles		
Last inspections - Major (EMMA+CPCP)	24,718.65 TAT / 22,887 TAC on 29		
	Sep 2024		

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Total Flying Hours since last CPCP

59.78 Hrs and 140 landings

1.5.2 General Information - Engine and Propellers

Right Engine (Gas Generator)	
Right engine manufacturer	Pratt & Whitney Canada
Year of manufacture	NA
Model	PT6A-27
Serial number	PCE-50277
Total Hrs. since new	9,993.90 Hrs
Last overhaul date	18 Dec 2019
Hrs. since overhaul	3,049.90 hrs
Last check carried out	CPCP (Y1-Y5) + EMMA# 11 Inspection
Hrs. since last check	59.78 hrs
Left Engine (Gas Generator)	
Left engine manufacturer	Pratt & Whitney Canada
Year of manufacture	NA
Model	PT6A-27
Serial number	PC-E51830
Total hrs. since new	6,978.58 hrs
Last overhaul date	28 Feb 1994
Hrs. since overhaul	3,220.28
Last check carried out	CPCP (Y1-Y5) + EMMA# 11 Inspection
Hrs. since last check	59.78 Hrs
Right Propeller	
Manufacturer	Hartzell Propeller
Year of manufacture	NA
Model	HC-B3TN-3DY
Serial number	BUA31448
Last overhaul date	26 Jan 2022
Hrs. since last overhaul	1,509.20
Last check carried out	CPCP (Y1-Y5) + EMMA# 11 Inspection
Left Propeller	
Manufacturer	Hartzell Propeller

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Year of manufacture	NA		
Model	HC-B3TN-3DY		
Serial number	BUA35039		
Last overhaul date	N/A – New Propeller		
Hrs. since last overhaul	3055.61 (TSN – New Propeller)		
Last check carried out	CPCP (Y1-Y5) + EMMA# 11 Inspection		

^{*}Engine / Propeller details including hours are stated as provided by the Operator

1.5.3 Flight Controls

The flight controls consist of conventional, manually actuated primary flight controls operated through cables, pulleys, and mechanical linkages. Rudder and elevator trim are manually controlled and mechanically actuated; aileron trim is electrically actuated. Secondary flight controls consist of hydraulically actuated wing flaps.

1.5.4 Fuel

Jet A-1 fuel was used on the aircraft engines. Prior to departure of flight the aircraft was refueled at the main base at MLE. The mass of fuel uplift, along with other fuel masses recorded on the ATL sheet are detailed below:

Departure from MLE: 835 lbs. Departure from HAL: 615 lbs.

1.5.5 Recent maintenance

CPCP and EMMA # 11 inspections were carried out only 59.78 hrs, 140 landings and 14 days prior to the accident at Operator's main base at MLE.

1.5.6 Defects

No defects were reported by the crew during preflight checks carried out or during operation of the flight. Aircraft had no open Deferred Defects either.

1.5.7 Aircraft Load

The aircraft departed HAL with a take-off mass of 11,235 lbs. The estimated landing mass at arrival in BTH is 11,195 lbs.

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1.6 Meteorological information

There was no recorded weather data available at BTH water aerodrome. The nearest recorded data was available from Alif Alif Thoddoo automatic weather station (AWS), which is approximately 39 km (21 nm) north of BTH water aerodrome. Available data between 07:30 to 09:00 hrs on the day of the occurrence is tabulated below:

 13 October 2024
 AA. Thoddoo

 Date/Time
 Rainfall

 Temperature
 M

Date/Time	Rainfall (mm)	Temperature (°C)	Mean wind Direction / Speed (mph)	Max. wind Direction/ Speed (mph)
13/10/2024 07:30	0.0	26.7	234-13.0	226-19.2
13/10/2024 08:00	0.8	27.6	232-10.7	249-17.2
13/10/2024 08:30	0.0	28.9	239-11.0	230-17.9
13/10/2024 09:00	0.0	26.7	299-0.9	308-7.8
13/10/2024 09:30	0.0	27.5	272-6.0	289-13.4

1.7 Aids to Navigation

There were no navigation aids available at the water aerodrome. The aircraft was operating under VFR.

1.8 Communications

There were no communication issues or defects recorded. Both VHF communication systems were operating normally.

1.9 Aerodrome information

As per the water aerodrome license, BTH is equipped with one floating platform, and is an uncontrolled aerodrome.

Occurrence Aerodrome: Bathala Resort water aerodrome (BTH)

Facilities: 01 Floating platform

Co-ordinates N 04° 04′ 44.6″, E 72° 56′ 38.5″

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The Aerodrome License for (BTH) bearing license number AP/P/21, was issued to B. Resorts Investment Pvt Ltd. on 30 Jan 2020.

1.10 Flight Recorders

No flight data recorder (FDR) or Cockpit Voice Recorder (CVR) was installed on the aircraft, and they are not required under MCARs.

1.11 Wreckage and impact information

1.11.1 Wreckage Condition

The aircraft sustained substantial damage upon impact.

1.11.2 Salvage operations

The aircraft was transported back to Operator's main base atop a landing craft.

1.12 Medical and pathological information

There were no records of any crew member having any pre-existing medical conditions that may have affected their performance. Further, all three crew members were subjected to drug tests and the results were reported negative.

1.13 Fire

There were no fires or fire alarms reported.

1.14 Survival Aspect

Life jackets were on board. However, they were not used, as the aircraft was able to sail to the platform on its own. The passengers disembarked normally.

1.15 Tests and research

None carried out.

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1.16 Organizational and Management Information

TMA is a MCAA approved Air Operator Certificate holder. The company is permitted to provide non-scheduled day VFR operations within the Maldives for transport of passengers and cargo. At the time of the accident, TMA fleet consisted of over 65 De Havilland Canada DHC-6 aircraft. TMA holds AOC 005 approval, CAMO approval no. MV. CAMO.003 and AMO Approval no. MV.145.025 issued by the MCAA.

1.17 Additional Information

None

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2 ANALYSIS

At the time of the occurrence the approach/landing area at Bathala (BTH) presented moderate westerly winds (estimated about 10–12 kt) with light drizzle and sea swells. No weather station exists at BTH; the nearest AWS (Thoddoo) data and crew reports indicate choppy water in the area. BTH is an uncontrolled water aerodrome with a single floating platform and limited sheltered landing areas.

Crew reports and damage pattern indicate the following sequence: on final the PF (FO) touched down with a slightly higher-than-normal flare, the aircraft encountered a swell and bounced back into the air. The PF called for a go-around (calls recorded as "max power, flaps 10" in the crew account) and power levers were advanced to maximum; the aircraft initially gained some lift but began to yaw/roll left, failed to accelerate sufficiently, and impacted the water in a left-wing/float first attitude. Concurrently the right-hand generator caution light illuminated, and subsequently the right engine flamed out and was secured. The aircraft then sailed to the platform.

The aircraft was at low air speed and low energy at the time of the bounce. At low airspeeds the time delay for the PT6 engines to produce thrust (spool up) together with increased drag from partial flap selection and the effect of a bounce can result in insufficient acceleration and an asymmetric control capability. The left roll and subsequent wing drop are consistent with an incipient or a full stall, when airspeed and angle of attack are unfavorable. The pattern of impact damage to both wing outer panels and the outboard flaps/ailerons support both wings impacting water, consistent with the crew's description.

Post-event technical records and operator reports show no pre-existing defects or deferred defects on the aircraft; recent major inspections (CPCP and EMMA #11) were carried out about 59.8 hours / 140 landings prior to the event. There is no evidence of pre-impact airframe or system failure that would have precipitated the event. No FDR/CVR was installed/required; thus, there is no flight recorder data to refine timelines or control inputs.

The right generator caution and right engine flame-out were reported to have occurred after the impact on water. The generator caution and subsequent

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engine shutdown were consequences of water/impact/ingestion or systems disruption during the water strike rather than causal factors that initiated the loss of control.

Both crew members held valid licenses and medical certificates. The FO (PF) had substantially less experience on type than the PIC. Under the operator OM the FO is permitted to conduct take-offs and landings at Category A water aerodromes, but the PIC retains ultimate command responsibility for safety of the flight and site selection for landing. The PIC reported he did not take control when the bounce occurred.

Delegation of PF duties to the less-experienced FO in a condition of marginal surface (wavy/choppy waters) reduced the robustness of the in-flight decision loop, and the PIC's choice not to immediately intervene during the bounce/go-around reduced the option set available to recover the situation. These elements align with classic threat-and-error management issues: accept-risk decision, monitoring/CRM breakdown, and delayed intervention.

No FDR/CVR data are available to precisely quantify control inputs, airspeeds, engine torques, or the exact timing of the generator caution and engine flameout; the analysis therefore relies on crew reports, meteorological proxies, inspection of damage, and operational records. The absence of recorder data limits ability to fully reconstruct transient engine spool dynamics or control column/aileron inputs during the bounce and attempted go-around.

3 CONCLUSIONS

3.1 Findings

AICC identifies the following as the findings.

During landing at Bathala water aerodrome, the PF (FO) executed a slightly higher-than-normal flare.

The aircraft encountered an unexpected swell and bounced off.

The crew tried to "go around" when the aircraft bounced. When Go Around was initiated the aircraft went into a stall and impacted on the water.

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No pre-impact airframe or system failures were found; CPCP and EMMA #11 inspections had been carried out 59.8 flight hours/140 landings prior.

Both pilots held valid licenses and medicals.

3.2 Causes / Contributing Factors

Loss of control following the attempted go-around at low speed resulted in insufficient acceleration resulting in the aircraft stalling at low altitude and impacting the wing/float on water.

4 Safety Recommendations

4.1 To the Operator

- 1. Emphasize CRM and intervention protocols during training.
- 2. Enhance training for bounced landings and rejected landings/go-arounds on water aerodromes, especially under low-energy conditions.

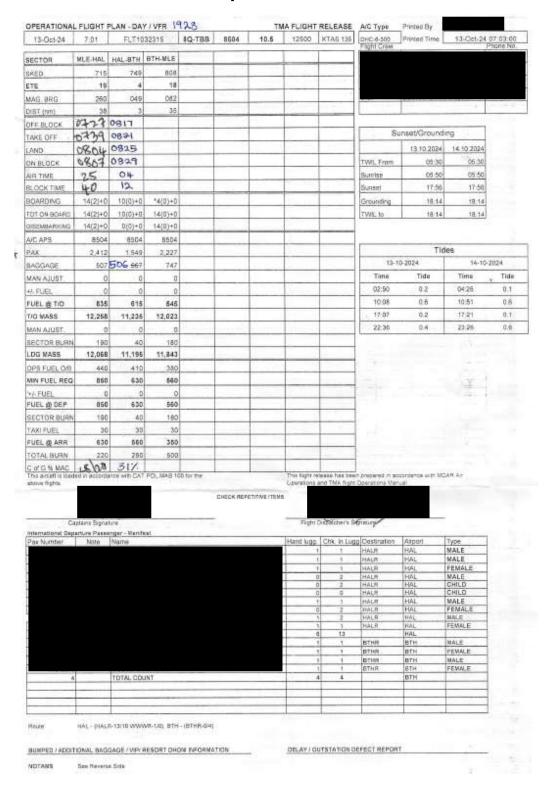
4.2 To MCAA

1. Issue an Advisory Circular highlighting risks of go-arounds after bounced landings on water aerodromes, including aerodynamic limitations of low-energy states, after evaluating similar incidents and accidents that had happened in the past.

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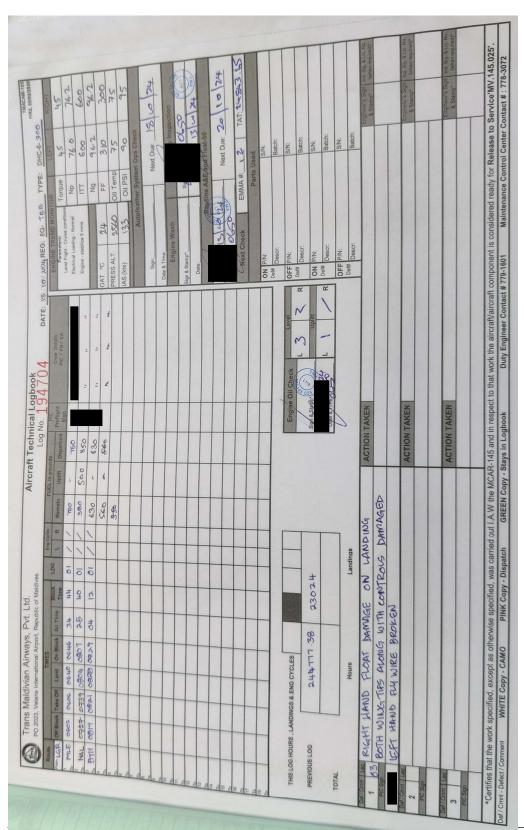
5 APPENDICES

5.1 Mass and Balance report



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5.2 Aircraft Technical log



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5.3 Photos of aircraft damages



Fig 1: RH Float - Nose Bumper detached



Fig 2: Float assembly flywire - snapped



Fig 3: Spreader bar



Fig 4: Float assembly



Fig 5: RH float outboard skin cracked at 7th compartment line



Fig 6: RH Drag wire

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Fig 7: RH float inboard skin - ripped near compartment 6



Fig 8: Vertical strut top eye bolt sheared



Fig 9: Vertical strut top eye bolt sheared



Fig 10: LH wing tip



Fig 11: LH Outboard Fore flap

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Fig 12: LH Wing Outboard rib



Fig 13: LH Wing Outboard leading edge skin buckled



Fig 14: LH outboard fore flap



Fig 15: LH wing Outboard Fore flap top skin

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Fig 16: LH Aileron and trim tab – skin buckled



Fig 17: LH wing Outboard Fore flap top skin

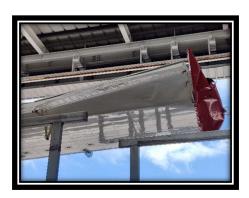


Fig 18: RH wing Aileron and trim tab – skin buckled RH wing tip



Fig 19: RH Wing tip - buckled

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