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DEFECT/INCIDENT INVESTIGATION REPORT (DIR)

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TO	:	Flight Safety (MW)	DIR REF	:	DIRDHC6-16.15
CC	:	EMD HQA, QAM (MW), HOE (MW), EMD QAM (Coordinator), DCA,	ASR REF	:	
			OR REF	:	MW/MOR/DHC/1615

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ACFT TYPE	:	Viking DHC6-400	ACFT REGN	:	9M-SSD
FLT NO	:	MH3553	SECTOR	:	MYY-MKM
DATE	:	26 OCT 2015	MR1 NO	:	61247163
ATA	:	32	STATUS	:	Closed
DESCRIPTION	:	Main Wheel	PART NO	:	04021101
SERIAL NO	:	4381	TSN/TSF/TSO	:	NIL
POSITION	:	L/H	CSN/CSF/CSO	:	36 CSF

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NOTE : **(STRICTLY CONFIDENTIAL AND FOR INTERNAL CIRCULATION ONLY) ACTION PARTIES TO RECOMMENDATIONS – PLEASE PROVIDE RESPONSE WITHIN 14 DAYS FROM DATE OF ISSUE**

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1. **TYPE OF INCIDENT**

1.1 Tire Deflated During Landing.

2. **DESCRIPTION OF INCIDENT**

2.1 During touchdown in Mukah Airport (MKM), the aircraft landed positively on the main wheels. However the crew noticed that the aircraft banked to the left. The aircraft's centerline was maintained by using the rudder and Beta range was selected upon contact of the nose wheel with the runway. The aircraft drifted to the left as it decelerated. The crew tried to correct the situation by applying the brake but the aircraft continue to drift to the left side of the runway. The crew applied more pressure on the brakes and eventually the aircraft skidded on the runway and came to a stop. After verification with the airfield attendant that the aircraft only suffered a deflated left main wheel, the crew decided to disembark the passenger on the runway as the aircraft was immobilized. There were nil injuries being reported by the crew and passengers.

3. **MAINTENANCE ACTION**

3.1 MH Engineering was informed that the aircraft had a flat tire after touchdown on the runway in MKM. Due to the unavailability of MH Engineering set up in MKM, tooling and rescue team was deployed from Kuching Station. Upon arrival of MH Engineering crew, inspection and rectification of 9M-SSD were performed on the runway.

3.2 During the general inspection it was found that the aircraft's L/H main tire was deflated. Significant damage was also observed on the wheel outboard wheel hub flange due to the hub come into contact with the runway surface.

3.3 The L/H brake assembly was inspected and there was no binding and anomalies. However the brake unit was replaced as a precautionary measure. Nil faults were detected on the then fitted brake assembly during the operational and functional check.

3.4 General visual inspection was carried out on the aircraft and the landing gear axle. The aircraft structure was inspected for sign of heavy landing and the nose wheel and R/H wheel were inspected for damage. There were nil anomalies observed.

3.5 MH Engineering proceeded with the replacement of the left side main wheel and brake unit as per AMM 32-40-51 and AMM 32-40-31 respectively. The left side main wheel was rotated and checked for security and the operational check of the left brake unit was also satisfactory.

3.6 The technical log (MR1 S/N 61247163) was cleared by MH Engineering and the aircraft was released to service without further maintenance follow up. The aircraft has been operating normal with nil signs of significant abnormal tire wear to date.

4. INVESTIGATION / FINDINGS

4.1 The aircraft's L/H main wheel S/N: 4381 was installed onto the aircraft on 19 Oct 2015 and has clocked a total of 36 cycles.

4.2 The L/H brakes S/N: 1931 that was fitted on the aircraft at the time of the incident was originally fitted during the aircraft delivery and they have clocked approximately 4302 cycles. No brake assembly change has been performed on this aircraft until this incident took place.

4.3 The Viking DHC6-400 brakes are classified as 'On-Condition' and have been proven with a high reliability factor. The brakes on the DHC6-400 are of the same part number as those installed on the legacy DHC6-310 which have not exhibited any critical failure trends.

4.4 The aircraft's maintenance records dating back to six months prior to this incident were reviewed and there was no record related to this tire and brake issue other than the normal wear and tear.

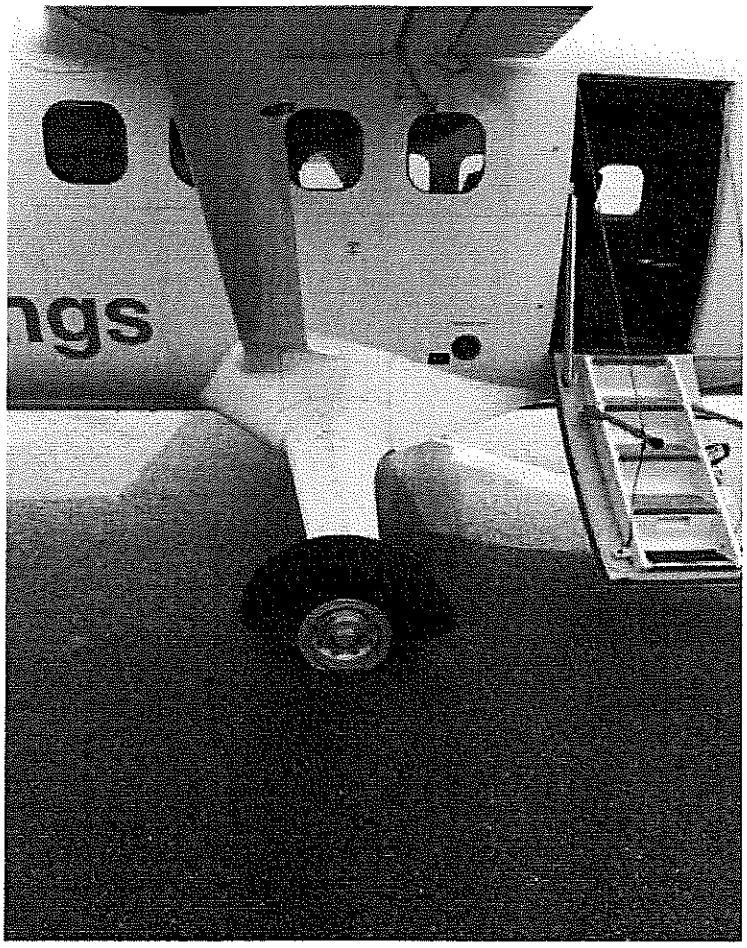
4.5 The tire was inspected by MH QAE in MH Wheels and Brakes Workshop in Kota Kinabalu International Airport. It was found that the tire had sufficient thread i.e. approximate 7mm on the whole tire cover's circumference. The removed tire cover was subjected to a pressure test and it was found within the limit stated in Cleveland Conversion Kit 199-92. The limit as per Cleveland Conversion Kit 199-92 allows a drop of 4% pressure over a 24 hours period. A drop of 01 psi was recorded after a period of 24 hours despite the damages caused by the skid.

4.6 Both the wheel hub and tire cover were deemed unserviceable due to the extent of the damages and will be scrapped accordingly.

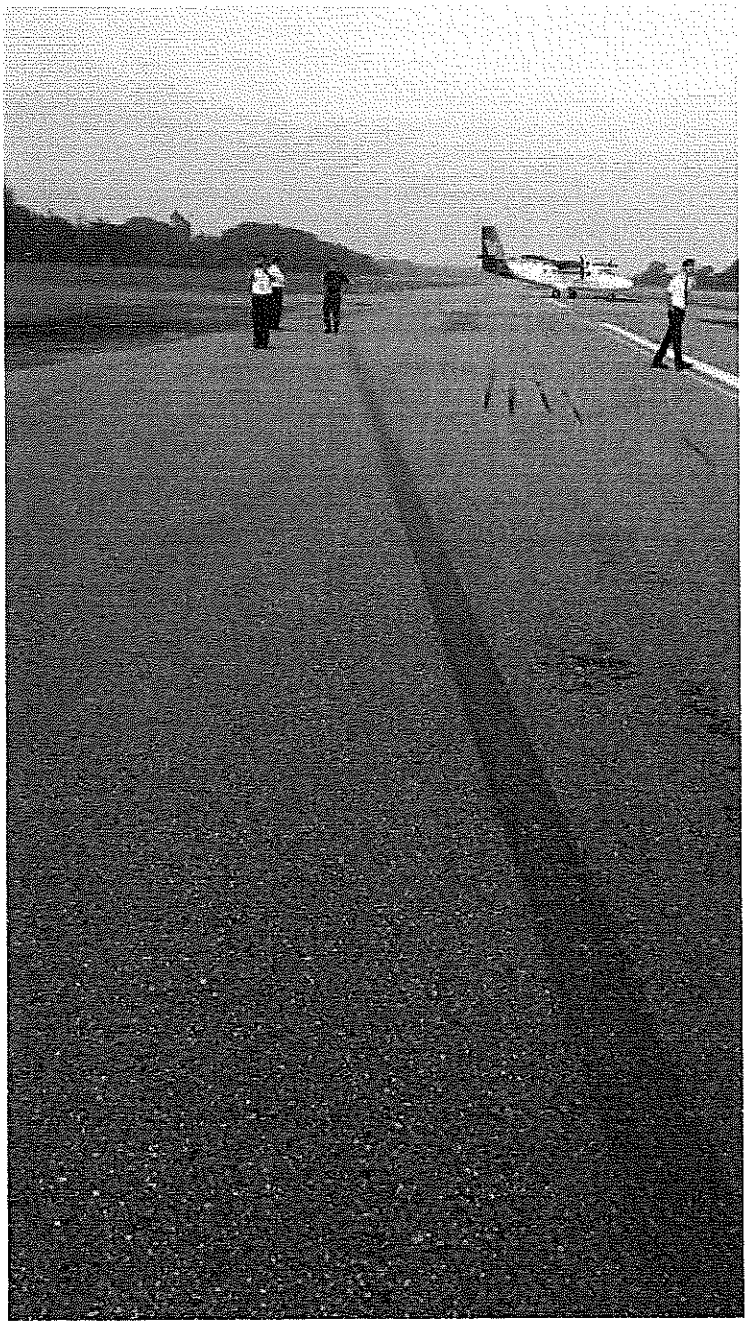
4.7 During the trouble shooting as highlighted in paragraph 3.3 above, the brake was found to operate normally and it did not show any anomalies or defects to indicate a technical failure. The brake unit was subsequently sent to BKI Wheels and Brakes Workshop for further troubleshooting and the test result was satisfactory.

4.8 The Viking DHC6-400 aircraft is not equipped with any anti-skid system or a locked wheel protection. Hence, the brake force is directly proportional to the pilot's input to the brake pedals.

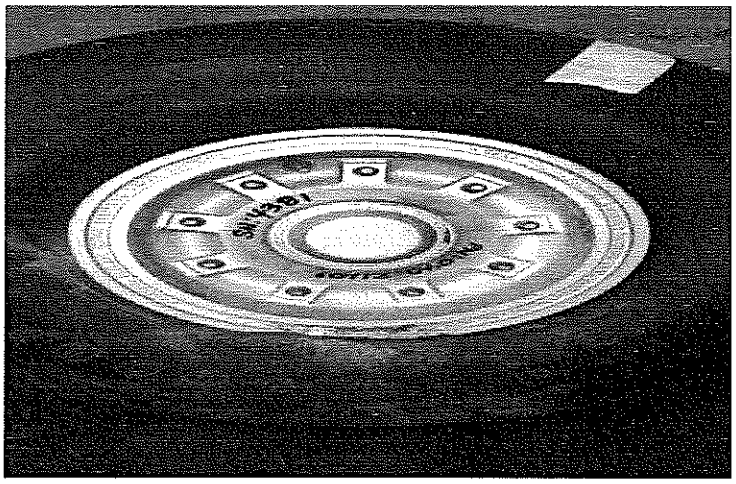
4.9 Arrangements were made for the information stored in the flight data recorder (FDR) to be downloaded at Miri Station (MYY). The FDR data were downloaded on 27 October 2015. The cockpit voice recorder (CVR) was replaced and the mini Quick Access Recorder (QAR) data was downloaded to facilitate the investigation prior to the aircraft being released for further flight. MR1 S/N 61247167 refers.



Picture 01



Picture 02



Picture 03

5. **CONCLUSION**

5.1 Based the investigation above, it is believed that the tire was deflated due to the excessive force being acted on the left main wheel during the skid on the runway thus causing the tire cover bead to dislodge from the wheel hub assembly. The reason for the skid was not technically inclined as the aircraft brakes were confirmed to operating normal.

6. **RECOMMENDATION**

6.1 Further follow up and investigation is required to establish the reason to the skid.

Action : Flight Safety Manager (MASwings)

6.2 Nil recommendation or follow up is required from Engineering.

For info.

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RAISED BY : Desmond Chong
DATE : 14 December 2015

APPROVED BY : Md Yazid Md Saleh
DATE : 15 Dec 2015

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RELEASE UNDER THE AUTHORITY OF THE HEAD QUALITY ASSURANCE

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