AIRCRAFT ACCIDENT FINAL REPORT

A 13/16

Air Accidents Investigation Bureau (AAIB)

Ministry of Transport

Accident Involving an Airbus Helicopter AS350 B3e

Registration 9M-APL

at SK Batu Melintang, Kelantan, Malaysia

on the 18 November 2016

Air Accidents Investigation Bureau
Ministry of Transport
No. 26, Jalan Tun Hussein, Precinct 4
Federal Government Administrative Centre
62100 PUTRAJAYA
Phone: +603-8892 1072
Fax: +603-8888 0163
E-mail: aaib@mot.gov.my
Website: http://www.mot.gov.my/en

Issued on 18 November 2017

AIR ACCIDENTS INVESTIGATION BUREAU (AAIB)
MALAYSIA

ACCIDENT REPORT NO. : A 13/16

OWNER	**:**	**SARAWAK CABLE BHD**
OPERATOR	**:**	**AERIAL POWERLINES SDN BHD**
AIRCRAFT TYPE	**:**	**AIRBUS HELICOPTER AS350 B3E**
NATIONALITY	**:**	**MALAYSIA**
REGISTRATION	**:**	**9M-APL**
PLACE OF OCCURRENCE:		**SK BATU MELINTANG, KELANTAN, MALAYSIA (5º 42' 31.32" N 101º 44' 8.52" E)**
DATE AND TIME	**:**	**18 NOVEMBER 2016 AT 1647LT**

This investigation is carried out to determine the circumstances and causes of the accident with the sole objective for the preservation of life and the avoidance of accidents in the future. It is not for the purpose of apportioning blame or liability (ICAO's Annex 13 to the Chicago Convention).

All times in this report are Local Time (LT) unless stated otherwise. LT is UTC +8 hours.

INTRODUCTION

The Air Accidents Investigation Bureau Malaysia

The Air Accidents Investigation Bureau (AAIB) is the air accident and serious incident investigation authority in Malaysia and is accountable to the Minister of Transport. Its mission is to promote aviation safety through the conduct of independent and objective investigations into air accidents and serious incidents.

The AAIB conducts the investigations in accordance with ICAO's Annex 13 to the Chicago Convention, the Civil Aviation Act of Malaysia 1969 and the Civil Aviation Regulations of Malaysia 2016.

It is inappropriate that AAIB reports should be used to assign fault or blame or determine liability, since neither the investigation nor the reporting processes has been undertaken for that purpose.

In accordance with ICAO's Annex 13 paragraph 4.1, a notification of the accident was sent out to the Civil Aviation Authority Malaysia (CAAM) as the State of Occurrence, Registration & Operator and also to the French Accident Investigation Authority, the *Bureau d'Enquêtes et d'Analyses pour la Sécurité de l'Aviation Civile (BEA)*, France as the State of Design and Manufacturer.

Unless otherwise indicated, recommendations in this report are addressed to the investigating or regulatory authorities of the State having responsibility for the matters with which the recommendations are concerned. It is for those authorities to decide what action is to be taken.

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APPENDICES

ABBREVIATIONS

AAIB	Air Accidents Investigation Bureau
BEA	French Accident Investigation Authority
CAAM	Civil Aviation Authority of Malaysia
CPL	Commercial Pilot License
ICAO	International Civil Aviation Organisation
LH	Left Hand
LP	Landing Point
LT	Local Time
PAX	Passengers
PIC	Pilot-in-Command
POB	Persons on Board
RH	Right Hand
SK	National School
UTC	Coordinated Universal Time
WMSA	ICAO Code for Sultan Abdul Aziz Shah Airport, Subang

SYNOPSIS

On 18 November 2016, an Airbus Helicopter AS350 B3e bearing the registration 9M-APL was involved in an accident at SK Batu Melintang, Kelantan, Malaysia. The aircraft had 2 POB.

While repositioning the aircraft to land on the school field, the pilot in control onboard the aircraft mishandled the landing causing the tail-rotor to impact the ground. The aircraft ultimately landed safely in an upright position but not before the tail-rotor assembly became detached from the main airframe.

The AAIB Chief Inspector was notified immediately and an investigation team was dispatched.

1.0 FACTUAL INFORMATION

1.1 History of the Flight

On Friday, 18 November 2016, at approximately 1647LT a Malaysian registered helicopter (9M-APL) approached the school field of SK Batu Melintang in Jeli, Kelantan. It had just returned from the operational area LP 2J and was landing to pick-up 4 pax.

The aircraft's approach to land was into wind in a westerly direction. However, due to the aircraft facing direct afternoon sunlight, the pilot in control decided to execute a 180º turn. However, during the turn, the pilot mishandled the aircraft in gusting winds. As a result, the aircraft tail-rotor impacted the ground and the tail-rotor assembly detached from the main airframe. The pilot subsequently managed to land the aircraft safely without any further incident but by then the aircraft was facing an easterly direction this time.

1.2 Injuries to Persons

Both the occupants onboard the aircraft did not experience any injury.

	9M-APL	
Injuries	**Crew**	**Pax**
Fatal	-	-
Serious	-	-
Minor / None	1	1

1.3 Damage to Aircraft

The vertical stabiliser assembly along with the tail-rotor gearbox and rotor blades were detached from the tail-boom of the aircraft. The tail-boom's skin displayed signs of buckling while the tail drive shaft was deformed. A deep cut was also found on the underside of the starboard horizontal stabiliser where it was impacted by a tail-rotor blade.

For images of damage to the aircraft please refer to **APPENDIX B**.

1.4 Other Damages

No other damages were observed other than ground scars on the school field.

1.5 Personnel Information

The PIC of the helicopter holds a valid CPL and was qualified for the sortie being carried out. The other occupant however, who also happened to be a helicopter pilot, was just a passenger as he was not rated on type.

1.6 Aircraft Information

The helicopter in question is owned by Sarawak Cable Bhd and operated by Aerial Powerlines Sdn Bhd, a subsidiary of Sarawak Cable itself.

Aircraft Type	Airbus Helicopter AS350 B3e
Manufacturer	Airbus Helicopters
Registration	9M-APL
Serial No.	7892

1.7 Meteorological Information

The weather on that fateful day was clear with some scattered clouds. Wind was gusting from a westerly direction.

1.8 Aids to Navigation

Not applicable.

1.9 Communications

The last radio call was made over the RT as the aircraft was beginning its approach. No distress call was ever made.

1.10 Aerodrome Information

Not applicable.

1.11 Flight Recorders

The Airbus Helicopter AS350 B3e is not equipped with flight recorders (FDR and/or CVR) nor is it mandated by law to do so. However it is equipped with a Vision 1000 system which will be discussed later during the analysis.

1.12 Wreckage and Impact Information

The wreckage was secured and brought back to the responsible MRO's hangar in WMSA by road.

1.13 Medical and Pathological Information

As stated earlier there were no injuries to both the pilots onboard the aircraft.

1.14 Fire

There was no post-impact fire. The fuel cell of the aircraft remained intact.

1.15 Survival Aspects

Both the pilots onboard the aircraft egressed without any difficulty. The ELT was not activated during the accident.

1.16 Tests and Research

Not applicable.

1.17 Organisational and Management Information

All organisational and management aspects of the operator were found to be in order throughout the investigation.

1.18 Additional Information

Nil.

1.19 Useful or Effective Investigation Techniques

Nil.

2.0 ANALYSIS

2.1 Eyewitness accounts concur with what happened as described above. Statements from the pilots were also taken but unbeknownst to them the aircraft was equipped with a Vision 1000 system which is a light audio data (area mike) and image data (instrument panel and environment) recorder sampled every 0.25 seconds.

2.2 On analysis by the BEA the data revealed an interesting fact. The PIC who was seated on the RH seat was not on the controls at the time of the accident, the pilot on the LH seat was. He was the one who initiated the descent, approach and ultimately mishandled the landing.

2.3 The PIC did try to intervene and take control but this led to a condition of dual input controls for a brief moment which may have further aggravated the situation. As per Para 1.5 above the other pilot is not rated on type.

3.0 CONCLUSION

The PIC allowed another pilot who was not rated on type to control the aircraft which contributed to the accident.

This accident is classified as a Loss of Control – Inflight (LOC–I).

4.0 SAFETY RECOMMENDATIONS

CAAM is to look into the pilot's actions and take the necessary remedial action.

INVESTIGATOR-IN-CHARGE
Air Accidents Investigation Bureau
Ministry of Transport
18 November 2017

AAIB (Malaysia) Accident/Incident Notification

Ref No A 11/2016
MOT/BSKU(S)600

Ministry of Transport Malaysia
(Air Accident Investigation Bureau)
No 26, Jalan Tun Hussein,
Presint 4, 62100 Putrajaya,
Malaysia

Telephone: +603 8892 1071
Facsimile: +603 8888 0163
Website: www.mot.gov.my
Email: yahaya@mot.gov.my

A. Classification accident / Incident (Serious) / Incident (Minor)	**ACCID** ◉	**INCID (Serious)** ○	**INCID (Minor)** ○

B. Detail of Aircraft / Flight	**Manufacturer**	: Airbus Helicopter
	Model	: H125 (AS350 B3e)
	Nationality	: Malaysia
	Registration	: 9M-APL
	Flight Number	: 9M-APL
	Serial Number	: 7892
C. Detail of Owner / Operator / Lessee (If applicable)	**Owner**	: SARAWAK CABLE
	Lessee (If Applicable)	:
	Operator	: AERIAL POWER LINES SDN. BHD.
D. Date and Time (Local / UTC) of the event i.e. accident or serious incident	**Date**	: 18 NOV 2016
	Time	: 1647 (0847)
E. Last point of departure and point of intended landing of the aircraft	**Last point of departure**	: SK BATU MAELINTANG, JELI
	Point of intended landing	: SK BATU MELINTANG, JELI
F. Last known position	**Latitude**	: 5 42 31.32N
	Longitude	: 101 44 8.52E

Descriptions
SK Batu Melintang football field.

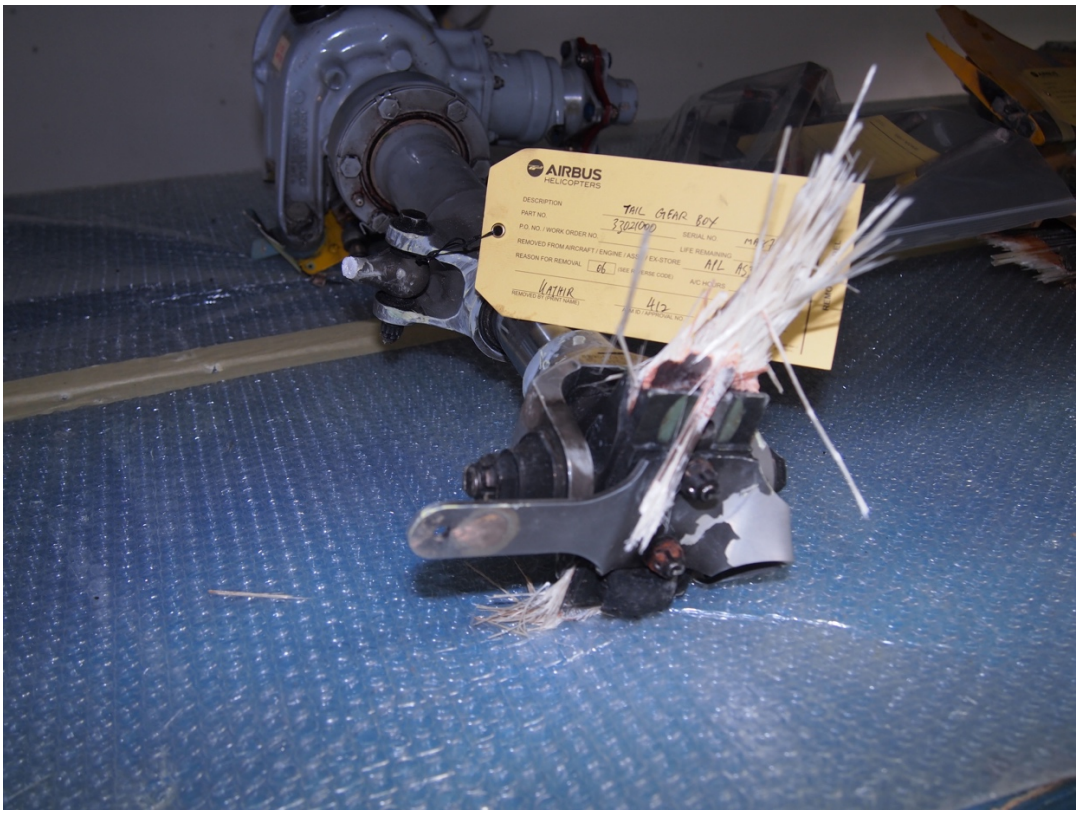
G. No of crew and passengers; aboard, killed and seriously injured	**Total occupant on board:** • **Pilot** :1 • **Passengers** :0 **Conditions** (Example : Pilot managed to vacate during fire.) Nil injury.
H. Qualification of the pilot in command and nationality of the crew and passengers	Pilot in Command qualification :CPL 3803 Pilot in Command nationality :Malaysia First Officer nationality :Nil Passengers nationality :Nil
I. Description of the accident or serious incident and the extent of damage to the aircraft so far as is known:	Aircraft 9M-APL was approaching to land into wind direction (west) of SK Batu Melintang football field for another passengers pick-up to operation area (LP 2J). Due to aircraft facing direct sunlight, pilot intended to turn 180 degree. However, during turning left, aircraft suddenly swift severely to the left due to gusting wind. As a result, aircraft tail rotor hit the ground and tail rotor assembly broken and flew off. Pilot managed to land the aircraft facing east safely without any other incident.
J. An indication to what extent the investigation will be conducted or is proposed to be delegated by the State of Occurrence	**Note : To be filled up by the Bureau** The Air Accident Investigation Bureau (Malaysia) has classified this as a Accident and has conducted an investigation in accordance with the provision of Annex 13 to the Convention of International Civil Aviation.
K. Presence and description of dangerous goods on board the aircraft	**No** (●) **Yes (Please describe)** ( ) **Unknown** ( )
L. Operation Type	**Commercial Aviation** ( ) **Scheduled** ( ) **Passenger** (●) **General Aviation** (●) **Non Scheduled** (●) **Cargo** ( ) **Others** ( ) **Others** ( )
M. Level of damage to aircraft (If information is available)	**Destroyed** ( ) **Substantial** (●) **Minor** ( ) **None** ( ) **Unknown** ( )

The State of Occurrence shall forward a notification of an accident or serious incident with a minimum of delay and by the most suitable and quickest means available to: a) the State of Registry b) the State of the Operator c) the State of Design d) the State of Manufacture and e) the International Civil Aviation Organisation, when the aircraft involved is of a maximum mass of over 2250 kg.

APPENDIX B

DAMAGE ASSESSMENT IMAGES

9M-APL



9M-APL (Cont...)

9M-APL (Cont...)