

BEA

Bureau d'Enquêtes et d'Analyses
pour la sécurité de l'aviation civile

Le Bourget, 20th October 2016

Mr Mitchell GALLO
Investigator in Charge
National Transportation Safety Board

[Redacted]

N° 2475/BEA/INV

Objet : Accident to Airbus Helicopter N356AM on March 6th 2015

P.J : BEA comments on N356AM report

Dear Mr Gallo,

Would you please find attached the BEA comments regarding the report on the N356AM accident.

Similar comments were provided to you during the investigation and do not appear in the final report published on the NTSB website.

Therefore, as per Annex 13, we ask for this contribution to be included in the documentation of the investigation, at least in the docket, so we thank you for in advance for this action.

We would also welcome the mention of this letter of comments in the published report on the NTSB website.

Best regards,

Damien BELLIER
Head of the investigation department

[Redacted]

BEA Comments

This document includes the comments that BEA wishes to raise in the docket of the event which occurred on March 6th 2015 on Airbus Helicopter EC130 registered N356AM.

1. Regarding the rooftop helipad

- 1.1 The location of the helipad on the building is not precised in the report.
- 1.2 The distance from the hospital and the Arch base heliport is only 1.3 Nm.
- 1.3 *"The medic said that the windsock on the helipad was illuminated and pointing straight out towards the elevator shaft next to the helipad"*. We think it would be very helpful for the reader to know that direction would be generally "northeast", meaning, the wind is from southwest.
The visible track of the flight from CC cameras and has seen by the helicopter's navigation lights shown on the building during the approach, showing that it was making an approach from the southwest to the helipad, so a general direction of the wind. In this case, it was a tail wind.

2. Use of Night Vision Goggles

According to nurse and paramedic the pilot used NVG's during the previous flight, however, usage at time of the accident is unknown, but likely.

3. Wreckage and impact information

This aspect induce that the N356AM accident was not survivable. It is based on the calculation performed by Airbus Helicopter on the estimation of the impact velocity. (That presentation was sent to you on March 15th 2015)

4. Medical and pathological information

BEA regrets that the pathological and medical information could not be discussed with BEA's medical staff prior to its release.

Based on the factual information provided to BEA and exposed in the public docket, several aspects could be discussed.

As regards the fire, soot in the respiratory tract is probably correlated to deep-breathing movements, but the low level of carboxyhaemoglobin (less than 10%) indicates that the duration of the breathing movements was short: the pilots deceased very quickly. This can be explained by the seriousness of the injuries of the skull and the neck. The data have to be crosschecked with the actual sequencing (impact-fire) issues by the examination of the wreckage and the kinematics of the accident.

A macroscopic examination of the heart has been performed. The experts stated that the heart muscle was free of focal lesions but as no microscopic examination has been performed, the conclusion of absence of heart attack is

not reliable. Nevertheless, coronary artery narrow-wings less than 80% are rarely correlated with heart attack.

Some factual information seems to be missing regarding the medical examination that was carried out:

- No details are provided as to the injuries to the brain; Is it intact or injured? If deleted by the fire, could there have been injuries possibly or likely related to the fractures of the skull?
- Have internal organs been subject to deceleration injuries?

In conclusion, concluding and definitive arguments in favour of survivability could arise from a multidisciplinary approach, supported by a debate between different experts; the sole opinion of a medical examiner and limited factual information in the report weaken this demonstration.

6. Survival Aspects

As regards to the Safety Recommendations, we do not contest its appropriateness in the N390LG case but it is a mistake to justify it on the basis of the N356AM event.

7. Perspective of handling qualities of EC-130-B4

This is the statement of only one pilot and many pilots could state the opposite.

Factually, there is no Teflon tape on the EC130 Fenestron blade.

There are two types of parts in the Fenestron which are made of Teflon: the inner and outer bearing rings, at the interface between the blade and the hub, and the pitch control rings between the blade and the control spider.

AH has never experienced any issue with these rings linked to the exhaust gas, on any EC130 aircraft. These parts may be worn due to the usage, but they have never been involved in a blockage of the blade kinematics.