

Technical document

Black substance examination

Accident on **17/01/2016**
in **Hanalei (Hawaii)**
to the **Rotorcraft EUROCOPTER - EC130**
registered **N11VQ**
operated by **Blue Hawaiian Helicopters**

Foreword

This document and the photographs and technical information contained herein are subject to the laws relating to communication and confidentiality embodied in European Regulation 996 of 20 October 2010.

The conclusions of this document are based on the work undertaken by the BEA (Bureau d'Enquêtes et d'Analyses pour la sécurité de l'aviation civile). They should not be used to prejudge the final conclusions of the safety investigation.

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1 - SAMPLE EXAMINED

Black substance

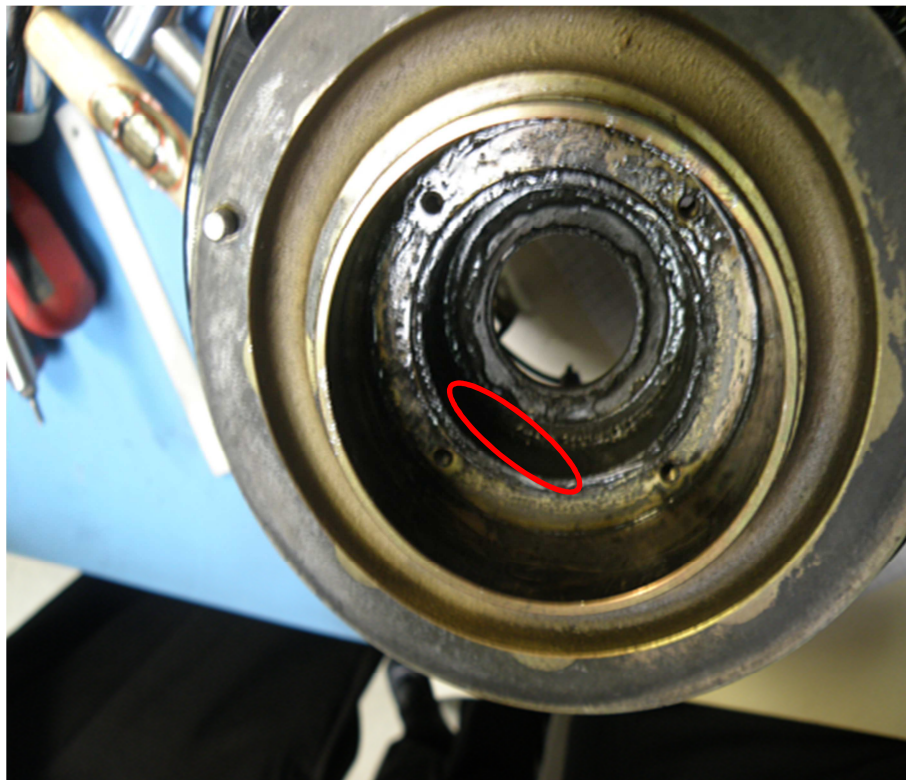


Fig. 1 – Black substance

The objective of this analysis was to search for the presence of engine oil and grease Loctite 8012.

Date of examination: November 24, 2016

Attendees: [REDACTED]

Synthesis of examinations: These analyses confirmed the presence of Loctite 8012 and engine oil O-156 in this black substance.

2 - MEANS

A sample of the black substance was analysed using the following methods:

- gas chromatography-mass spectrometry (GC-MS),
- Fourier transform infrared (FTIR) spectroscopy,
- X-ray fluorescence.

This black substance was then compared to a sample of Loctite 8012.

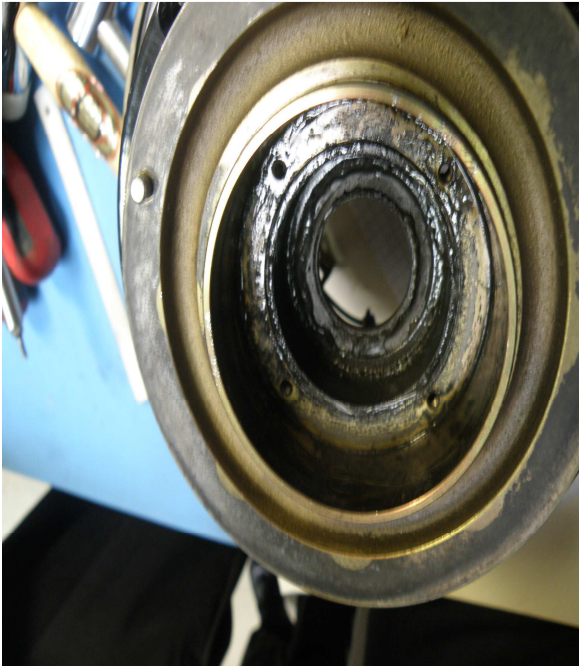


Fig. 1 - Black substance



Fig. 3 – Loctite 8012

3 - RESULTS

3.1 Analysis by FTIP

The analysis by infrared spectroscopy confirmed the presence of engine oil O-156 in this sample.

3.2 Analysis by An X-ray fluorescence

The analysis by X-ray fluorescence confirmed the presence of Loctite 8012 in this sample.

3.3 Analysis by GC/MS

The analysis by gas chromatography-mass spectrometry (GC-MS) confirmed the presence of Loctite 8012 and engine oil O-156 in this sample.

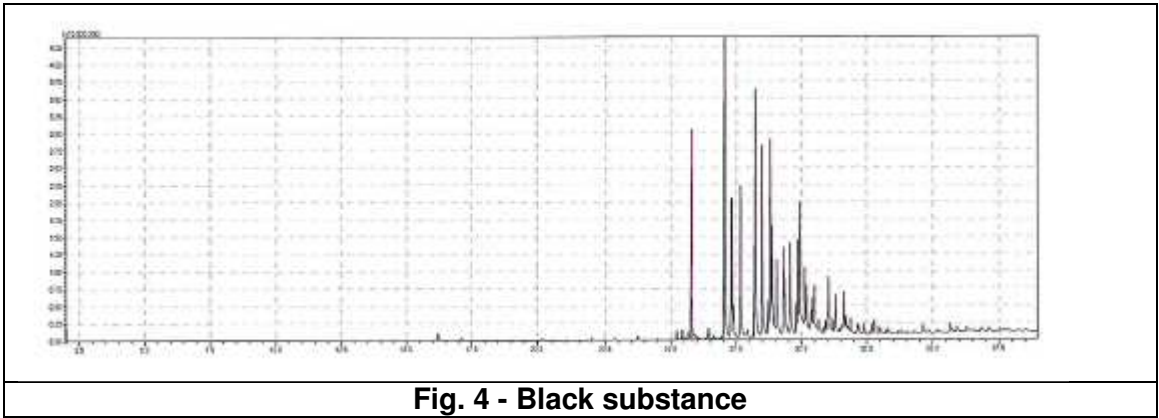


Fig. 4 - Black substance

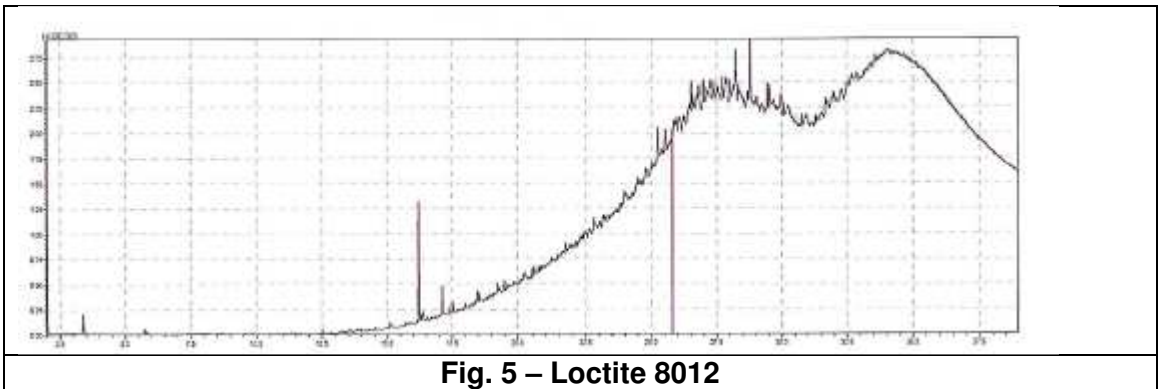


Fig. 5 – Loctite 8012

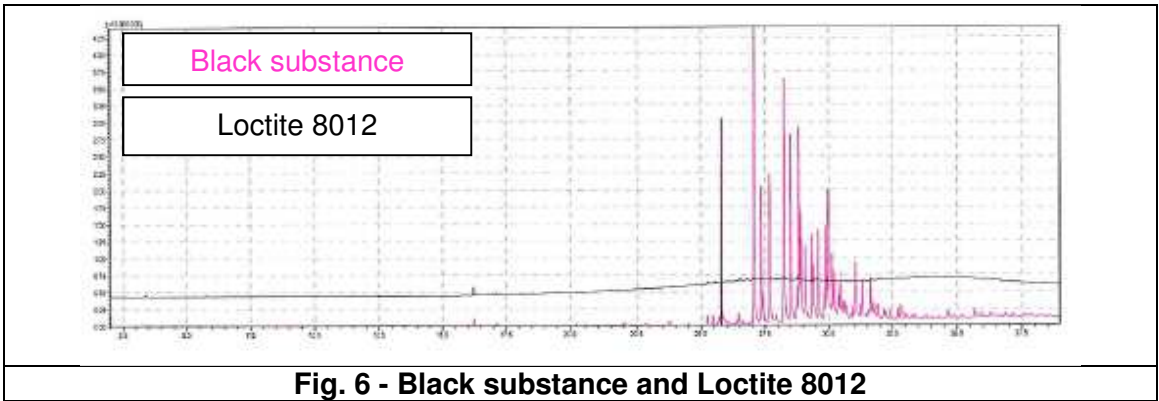


Fig. 6 - Black substance and Loctite 8012

4 - CONCLUSION

These analyses confirmed the presence of Loctite 8012 and engine oil O-156 in this black substance.

BEA

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