

PRELIMINARY REPORT ON ACCIDENT AT TURØY, NEAR BERGEN, NORWAY ON 29 APRIL 2016, INVOLVING AIRBUS HELICOPTERS H225, LN-OJF OPERATED BY CHC HELIKOPTER SERVICE AS

This report is a preliminary and incomplete representation of AIBN's investigations in connection with the relevant aircraft accident. The report may contain faults and inaccuracies. The final report will be the Accident Investigation Board's official document concerning the accident and investigation.

Aircraft:

- Type and reg.:	Airbus Helicopters H225, LN-OJF
Serial No.:	2721
Call sign:	HKS241
No. and Type of Engines:	2 x Turbomeca Makila 2A1 turboshaft engines
Date and time (local):	Friday 29 April 2016 at 11:55 hours
Year of Manufacture:	2009
Accident site:	Turøy, Hordaland county, Norway (Pos. 60,45234°N 004,93028°E) Radial/Distance from ENBR: 330°/13 NM
Weather conditions:	METAR ENBR 290950Z 20017KT 9999 SCT018 SCT023 07/03 Q1005 NOSIG RMK WIND 1200FT 19020KT=
Light conditions:	Daylight
Operator:	CHC Helikopter Service AS
Type of Operation:	Commercial Air Transport (CAT), Non-scheduled operations
Persons on board:	Crew - 2 (Fatal) Passengers – 11 (Fatal)
Nature of damage:	Helicopter destroyed
Information Source:	AIBN Field Investigation

All times given in this report are local time (UTC + 2 hours) unless otherwise stated.

Introduction

This Preliminary report is published to disseminate information obtained during the earliest stages of the investigation¹. The intention is to give a brief update on the progress and findings two weeks into the investigation. The report is factual and contains neither conclusions nor safety recommendations.

¹ Regulation (EU) No 996/2010 of the European Parliament and of the Council of 20 October 2010 on the investigation and prevention of accidents and incidents in civil aviation, Art. 2.

History of Flight

HKS241 was enroute from Gullfaks B (ENQG) to Bergen Airport Flesland (ENBR). The helicopter was cruising at 2000 ft when the Main Rotor Head (MRH) and mast suddenly detached.

The helicopter impacted on a small island and caught fire. The main wreckage thereafter ended in the sea where it came to rest at a depth of 1-9 meters. The accident was not survivable.

The CVFDR (Combined Cockpit Voice and Flight Data Recorder) was salvaged from the tail section of the helicopter the day of the accident. The recorder was taken to the Air Accidents Investigation Branch (AAIB) at Farnborough, UK for read-out. Two days after the accident, a complete data set of both voice and flight data was successfully downloaded.

The recordings on the CVFDR showed that everything appeared to be normal until a sudden catastrophic failure developed in 1-2 seconds. The CVFDR recordings ended abruptly at the same time. There are no indications that flight crew actions were a factor in the accident.

Evolution of the investigation

The main wreckage was recovered from under water and brought to the naval base Haakonsværn the day after the accident. The Main Rotor Head (MRH) and other parts found on land were taken to the same place for preparation, registration and preliminary examination.

According to international Standards and Recommended Practices (ICAO Annex 13), the State of Occurrence shall institute and be responsible for the investigation. AIBN has taken on the responsibility for this investigation and has called upon assistance from France (the State of Design and Manufacture) and the UK². Le Bureau d'Enquêtes et d'Analyses (BEA) pour la Sécurité de l'Aviation civile is supported by technical advisors from Airbus Helicopters and the Engine manufacturer Turbomeca. From the UK, QinetiQ are contributing with their technical expertise.

In addition, the European Aviation Safety Agency (EASA) is the competent certification Authority for Airbus Helicopters H225 and participates as Advisor to the AIBN. The Norwegian Civil Aviation Authority (N-CAA) and the Operator CHC Helikopter Service are also advisors and part of the team. Both the national and international representatives successively joined the team on site during the day after the accident.

² ICAO Annex 13 does not preclude the State conducting the investigation from calling upon the best technical expertise from any source. In particular if a State believes that a useful contribution can be made to the investigation or when such participation might result in increased safety.

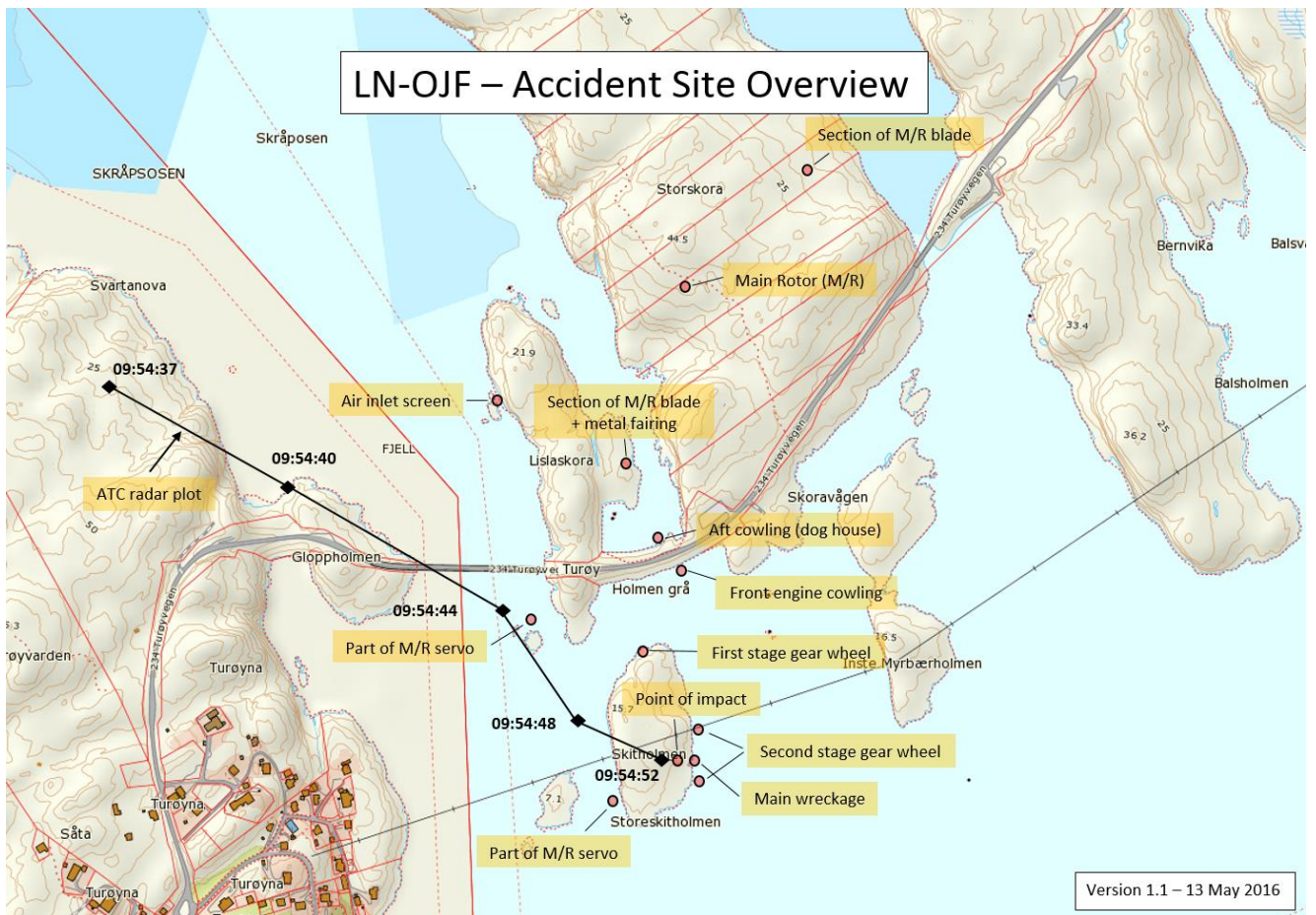


Figure 1: The Accident Site. (Time on ATC Radar Plot is UTC.) Map: © The Norwegian Mapping Authority. Illustration: AIBN

Initial Examinations

On 5 May, all the retrieved parts from the helicopter wreckage were taken from Haakonsvern to the AIBN premises in Lillestrøm, where all parts of particular interest for the investigation have been selected for more detailed inspections/examinations.

The examination of the wreckage is ongoing. The AIBN is currently focussing on the examination of the MRH suspension bar assembly, the main gearbox and the main rotor head. Retrieved wreckage parts and other components are stored for future examinations as required.

However, several key components are still missing. A significant sea and land search is ongoing in order to retrieve these components.

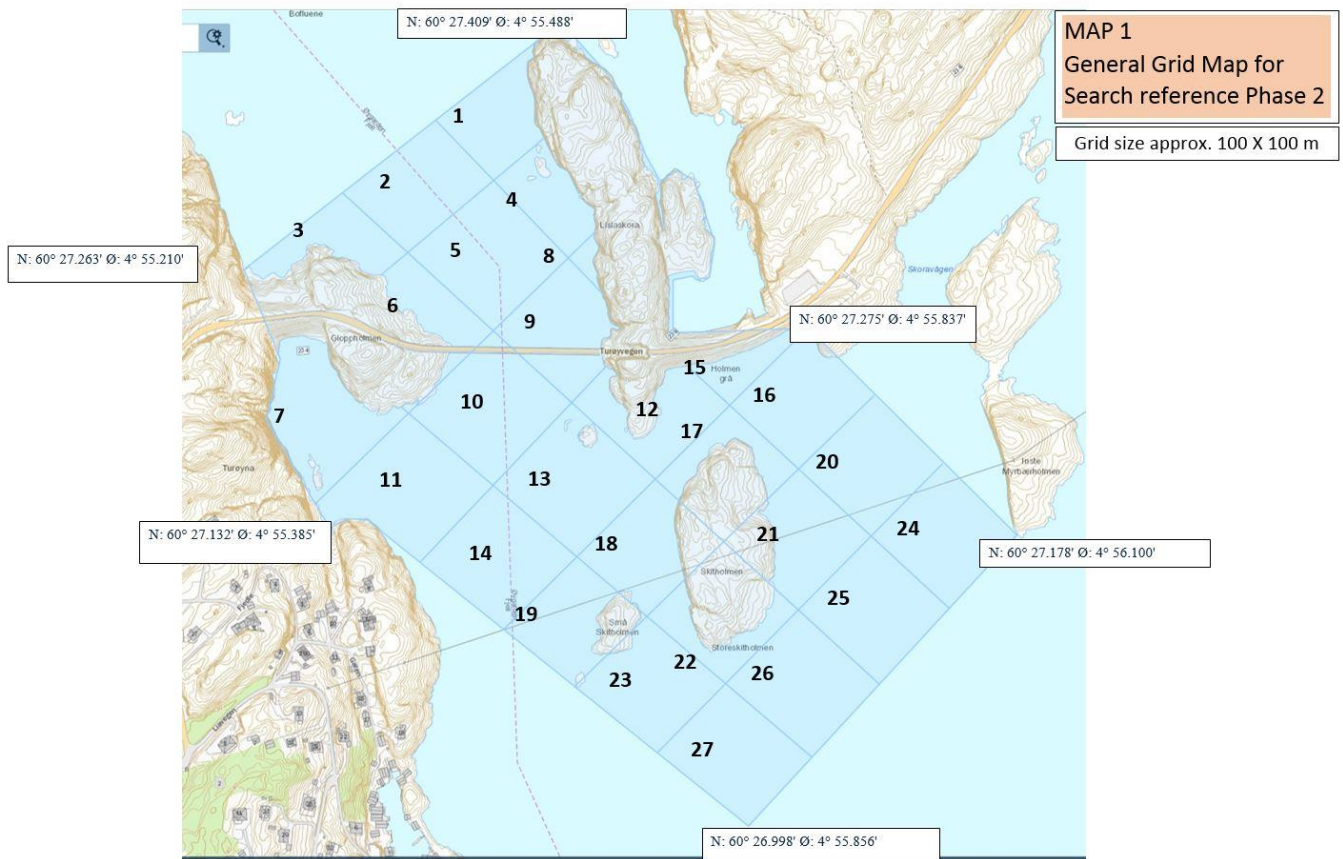


Figure 2: Grid Map for Search purposes. Map: © The Norwegian Mapping Authority. Illustration: AIBN

Samples of retrieved components



Figure 3: MGB Right and left hand aft suspension bars with attachment fittings. Photo: AIBN



Figure 4: Upper forward suspension bar fitting. Photo: AIBN

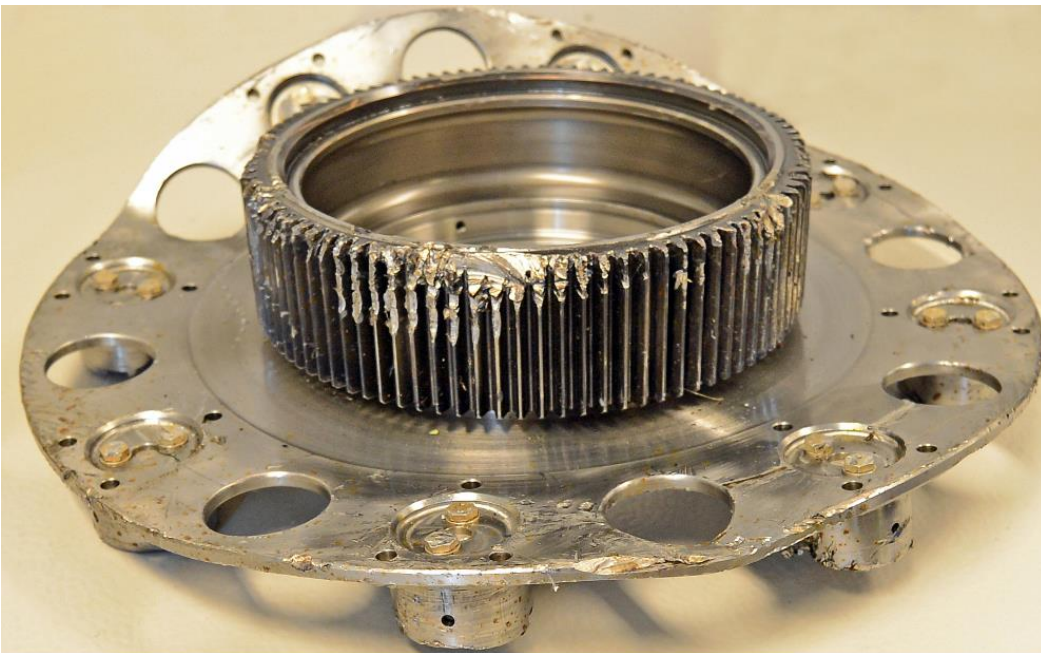


Figure 5: MGB first stage planetary gear carrier. Photo: AIBN



Figure 6: Parts from second stage planet gear. (The fractured gear is placed on top of a sample gear that was not involved in the accident.) Photo: AIBN

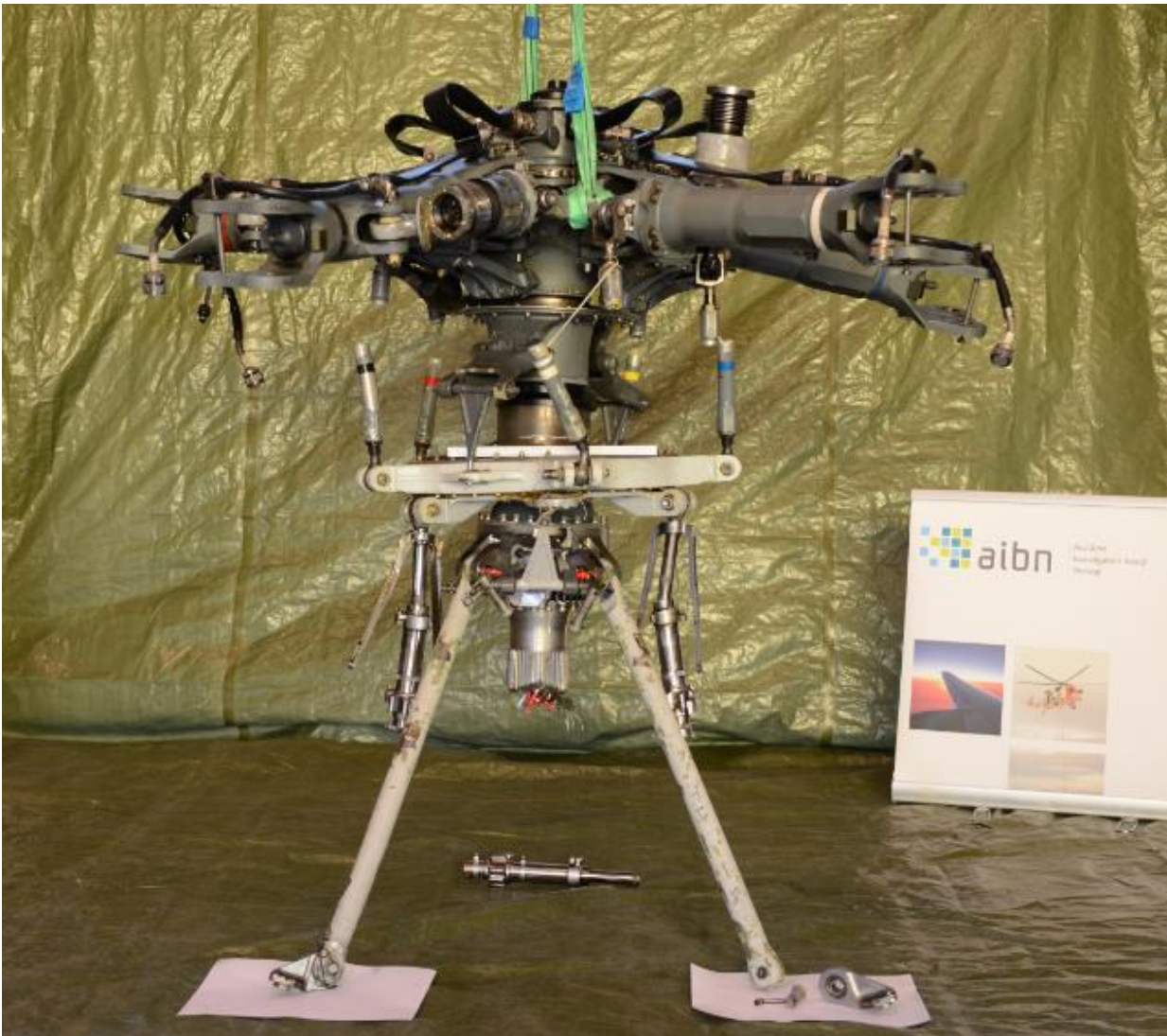


Figure 7: Main rotor head with rotor mast with aft suspension bars. Photo: AIBN

At this preliminary stage of the investigation, detailed metallurgical examinations have not been performed. The examinations so far have not shown any sign of fatigue failure.

HUMS (Health and Usage Monitoring System)

HUMS data is collected from a variety of sensors. It also records some of the CVFDR parameters. The Memory card in the HUMS unit has been retrieved and sent to BEA. Data has been downloaded successfully and will be examined.

Further Examinations

The AIBN has collected and secured relevant maintenance documentation. This material will be subject to thorough analysis in parallel with the technical examinations.

Closing remark

This investigation is still in an early stage and the enclosed photos are only to illustrate some areas of interest. They do not exclude other areas of interest and are not necessarily parts which contributed to the accident.

The Accident Investigation Board Norway

Lillestrøm, 13 May 2016