

Investigation of an aviation incident after departure from the Linus offshore oil installation on the Ekofisk field

On 5 June 2023 a Sikorsky S-92A helicopter had an uncommanded engine failure shortly after take-off from the offshore oil installation Linus platform near the Ekofisk field in the North-Atlantic.

LN-OMI had picked up passengers at platform Linus. Shortly after take-off, the crew heard a loud noise and were also notified by a warning light in cockpit that the left engine had stopped.

The crew determined that the engine had stopped and continued the flight on the other engine. An emergency message was sent to the air traffic service. It was decided to fly on one engine to Stavanger Airport, where they landed without further complications. No one was injured as a result of the incident.

The Norwegian Safety Investigation Authority (NSIA) visited the helicopter company the following day and started a preliminary investigation. As part of the ongoing preliminary investigation, an initial inspection of the helicopter's CT7-8 type engine was carried out in collaboration with the engine's manufacturer, General Electric, at the end of July.

The investigation revealed that twelve bolts joining the compressor and gas generator turbine had ruptured.

There are no known similar incidents with the engine type.

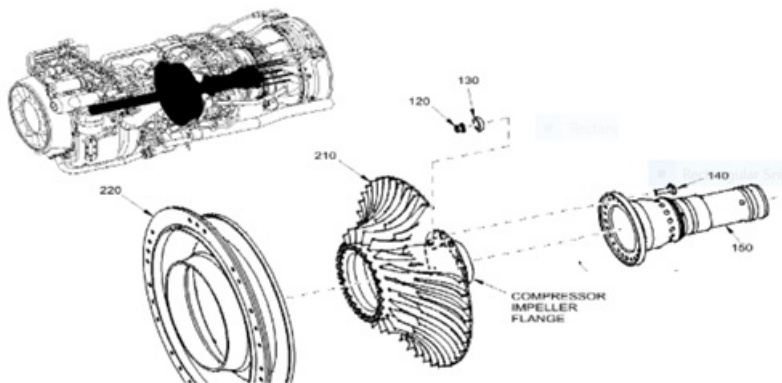
Based on the inspection of the engine, the NSIA has chosen to start a full investigation of the incident. It involves metallurgical and fracture engineering investigations.



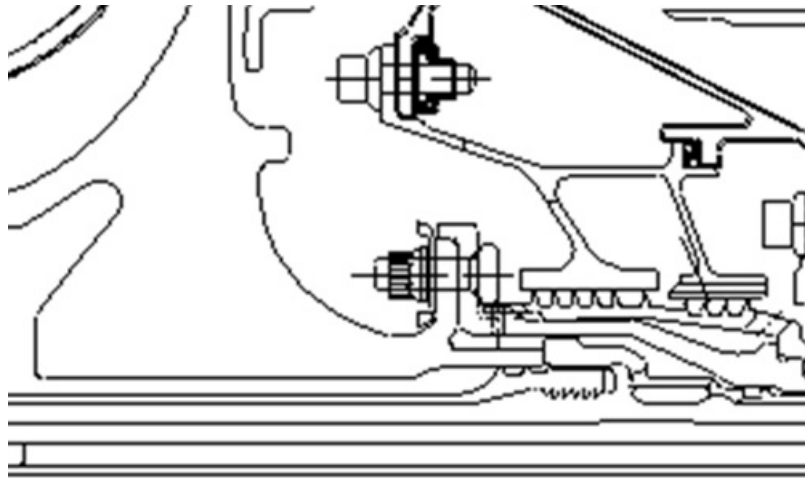
Aft flange of the centrifugal Impeller. Photo: NSIA



Forward flange of the turbine shaft. Photo: NSIA



Overview engine. Illustration: General Electric



Close view of affected connection. Illustration: General Electric

Status of investigation

The NSIA has carried out a metallurgical examination of the twelve bolts. Fatigue has probably started in two of the bolts. The load then increased on the remaining bolts and after a while all twelve bolts ruptured.

So far it has not been possible to conclude about a possible cause.

No safety recommendation has been given so far in the investigation.

Latest update: 20.06.2024

Facts

Occurrence date	05.06.2023
Aircraft	Sikorsky øvrige
Operator	Bristow Norway AS
Registration	LN-OMI
Meteorological conditions	IMC
County	Rogaland
Type of occurrence	Incident
Type of operation	Offshore

Category of operation	Heavy, helicopter (> 2 250kg)
Aircraft category	Helicopter, Multi-engine, Turboprop/turboshaft
FIR/AOR	ENSV (Stavanger ATCC)

NSIA conducts its investigations for the sole purpose of improving transportation safety. The object of a safety investigation is to clarify the sequence of events and root cause factors, study matters of significance for the prevention of transportation accidents and improvement of transportation safety, and to publish a report with eventually safety recommendations. NSIA shall not apportion any blame or liability. Use of information from this investigation for any other purpose than for improvements of transportation safety shall be avoided.