

PRELIMINARY REPORT ON ACCIDENT AT SOGNESAND, NORWAY ON 16 NOVEMBER 2020, INVOLVING AIRBUS HELICOPTERS AS 350 B3, LN- OAX OPERATED BY HELI TEAM AS

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This report is a preliminary and incomplete representation of Norwegian Safety Investigation Authority (NSIA) investigations in connection with the relevant aircraft accident. The report may contain faults and inaccuracies. The final report will be the Norwegian Safety Investigation Authority official document concerning the accident and investigation.

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

Aircraft:

- Type and reg.: Airbus Helicopters AS 350B3, LN-OAX
Serial No.: 3555
No. and Type of Engine: Safran Helicopter Engine, Arriell 2B
Date and time (local): Monday 16 November 2020 at 14:36 hours
Year of Manufacture: 2002
Accident site: Sognesand, Sandnes Norway N: 59.035134 E: 6.391347
Weather conditions: Rain, gusty winds and fog nearby. Weather condition becoming worse
Light conditions: Daylight
Operator: Heli-Team AS
Type of Operation: Commercial Air Transport (CAT), Non-scheduled operations
Persons on board: Crew – 1
Nature of damage: Severe damage, especially on tail section and main rotor system
Information Source: NSIA, field team and ongoing investigation

1. HISTORY OF THE FLIGHT

At the day of the accident the helicopter was scheduled to perform both arial work and flying workers to the powerline building project in Sognesand in Sandnes community, Norway.

Before the flight with the load of concrete, to the mast attachment point number 49, the pilot decided to reduce the load of 700 kg instead of the normal 1100 kg. The decision to fly with a reduced load was based on the short distance, somewhat demanding wind and power lines nearby the mast attachment point.

The pilot started the flights with concrete at 12:30. After some successful missions with concrete the flights were interrupted, to pick up personnel at an adjacent location. The mission had to be aborted due to fog and the worsening weather at the pickup location. The missions with concrete was resumed and due to heavy rain the front windshield was affected by dew. The pilot had to land the helicopter and clear the dew of the windshield before the last mission.

The flight was normal from take-off up to the delivery location. The pilot approached the delivery location with a heading of about 90°. The actual wind was gusty at a direction of between 180–225°. The bucket with concrete was placed above the fundament and the unloading of the concrete started by two persons on the ground. After a short time, the pilot felt vertical vibrations with an amplitude of about 5 cm. He took immediate action and released the bucket. The bucket came to rest on the wooden frame surrounding the fundament planned to be filled with concrete.

After the release of the external load, the pilot concentrated on flying the helicopter. Initially he slightly lowered the nose and attempted to escape from the location. He raised the collective but the helicopter did not respond as expected. He therefore kept the collective lever at the same position. He also reported that he noticed a suspected drop in the main rotor rpm when he raised the collective. The pilot's feeling was that the helicopter was going "down", an experience unlike anything he had experienced before. The pilot tried to use the remaining energy within the rotor system to make a safe landing.

After very short time, the helicopter hit some trees before turning slightly to the left. The helicopter came to rest on the right-hand side about 33 meters from the location where the concrete should be delivered.

After the helicopter came to rest, the engine continued to run. The commander tried to stop the engine by closing the fuel valve. The valve closed, but when the engine did not stop immediately, he also shut down the engine in the normal way. After the engine was stopped, he evacuated the helicopter without assistance. He has reported to observe some "white" smoke coming from the engine area at the time of shut-off.

The ground personnel describe that the bucket had vertical vibration with the same amplitude as the pilot reported. The information related to whether the bucket had physical contact with the wooden frame to the fundament is inconsistent.



Helicopter at accident site laying on the right-hand side pointing towards north

2. INVESTIGATION UPDATE FROM NSIA

The helicopter was transported to the NSIA hangar. The investigation has continued, and the initial technical examinations has so far not detected any conditions which should lead to an interim safety recommendation.

The cause of vibrations is still unknown, and the investigation is ongoing. NSIA has removed the Vehicle and Engine Monitoring Display (VEMD) together with the Engine Digital Engine Control Unit (DECU) for read out by the Accident Investigation Board in France, Bureau d'enquêtes et d'analyses pour la sécurité de l'aviation civile (BEA). NSIA has inspected the helicopters flight controls, including servos but have not yet concluded about the result.

The investigation continues with additional inspections and examinations.

Norwegian Safety Investigation Authority

Lillestrøm, 28 January 2021