



ISSN 1400-5719

Report RL 2001:48e

***Accident involving helicopter SE-HNZ
on Stormyren, 3 km north of Klimpfjäll, AC county,
Sweden, on 30 August 2001***

Dnr L-065/01

SHK investigates accidents and incidents with regard to safety. The sole objective of the investigations is the prevention of similar occurrences in the future. It is not the purpose of this activity to apportion blame or liability.

Translated by Dennis Lynn Anderson
From the original Swedish at the request of the Board of Accident Investigation.

In the event of discrepancies between the English and the Swedish texts, the Swedish text is considered to be the authoritative version.

The material in this report may be reproduced free of charge provided due acknowledgment is made.

The report is also available on our web site: www.havkom.se

Statens haverikommission (SHK) Board of Accident Investigation

Postaddress/Postal address

P.O. Box 12538
SE-102 29 Stockholm Sweden

Besöksadress/Visitors

Wennerbergsgatan 10
Stockholm

Telefon/Phone

Nat 08-441 38 20
Int +46 8 441 38 20

Fax/Facsimile

Nat 08 441 38 21
Int +46 8 441 38 21

E-mail Internet

info@havkom.se
www.havkom.se

Swedish Civil Aviation Administration

601 79 NORRKÖPING

Report RL 2001:48e

The Board of Accident Investigation (Statens haverikommission, SHK) has investigated an accident that occurred on 30 August 2001, on Stormyren, 3 km north of Klimpfjäll, AC county, Sweden, involving a helicopter with registration SE-HNZ.

In accordance with section 14 of the Ordinance on the Investigation of Accidents (1990:717) the Board herewith submits a final report on the investigation.

Olle Lundström

Monica J Wismar

Henrik Elinder

Report RL 2001:48e

L-065/01

Report finalized 2001-12-17

<i>Aircraft: registration, type</i>	SE-HNZ, Hughes 369E
<i>Class, airworthiness</i>	Normal, valid certificate of airworthiness
<i>Owner/operator</i>	Flygtjänst F. J. Viklund AB
<i>Time of occurrence</i>	2001-08-30, at approximately 20:10 hours in daylight. <i>Note:</i> All times are given in Swedish daylight saving time (UTC + 2)
<i>Location</i>	Stormyren, approximately 3 km north of Klimpfjäll, AC county, Sweden (pos 6551N 01449E; 712 m above sea level)
<i>Type of flight</i>	Private
<i>Weather</i>	According to SMHI's ¹ analysis: generally light southerly wind at approximately 5 knots, good visibility, cloudcover 5-8/8 stratocumulus with bases at about 3,000 feet, temp./dewpoint +11/+9 °C, QNH 1014 hPa. Sunset at approximately 20:15
<i>Persons on board: crew</i>	1
<i>passengers</i>	–
<i>Injuries to persons</i>	None
<i>Damage to aircraft</i>	Substantially damaged
<i>Other damage</i>	None
<i>Pilot in command:</i>	
<i>Age, certificate</i>	54 years old, Commercial Pilot's License (Swedish B) and Commercial Helicopter License (Swedish BH)
<i>Total flying time</i>	9,466 hours, of which 5,838 helicopter hours and 1,950 hours on the type
<i>Flying hours previous 90 days</i>	120 hours, of which 50.5 hours on the type
<i>Number of landings previous 90 days</i>	210, of which 168 on the type

The Board of Accident Investigation (SHK) was notified on 30 August 2001 that an accident involving a helicopter with registration SE-HNZ had taken place on Stormyren², approximately 3 km north of Klimpfjäll³, AC county, Sweden at approximately 20:10 hours on that same day.

The accident has been investigated by SHK represented by Olle Lundström, Chairman, Monica J Wismar, Chief investigator flight operations and Henrik Elinder, Chief technical investigator aviation.

The investigation was followed by The Swedish Civil Aviation Administration, represented by Nils von Koch.

History of the flight

On the day of the accident the pilot had been on flight duty from 08:30 until 19:00 hours and had flown 4 hours and 20 minutes. During this period he had accomplished 30 takeoffs and landings.

¹ SMHI – Swedish Meteorological and Hydrological Institute

² Stormyren – The definitive name of a geographical area of arctic bog or wetland.

³ Klimpfjäll - The definitive name of a specific mountain.

After terminating his flight duty he decided to perform a training flight including emergency training exercises. He tookoff from Klimpfjäll at 19:40 hours and flew towards Stormyren. After having accomplished a number of exercises, he took the helicopter up to about 800 feet (243 meters) above the ground and executed an auto-rotation with power application, which concluded with a low altitude hover. Subsequently he once again took the helicopter up to 800 feet with the intention of performing a complete auto-rotation with landing on the bog.

The initiation of the auto-rotation proceeded normally and when he had descended to a height of about 150 feet he noticed that the airspeed of the helicopter was somewhat high, approximately 70 knots indicated airspeed. He therefore initiated the recovery somewhat earlier and steeper than he had during the first auto-rotation. The main rotor rpm was low during the touchdown and the contact with the ground proved to be hard and took place with a certain amount of forward motion. The ground was wet and soft and the helicopter decelerated rapidly. Directly after the touchdown, the pilot noticed an object that came from behind him and passed-by diagonally out to the right. In conjunction with this, he felt a certain amount of rotor imbalance through the control stick. He shut the engine down and after evacuating the helicopter he observed that the main rotor had severed the tail boom. It was this severed tail boom section that the pilot had seen flying by.

The pilot was not injured. Upon touchdown, the emergency locator transmitter of type Narco ELT 10 was activated. In addition to the damage to the tail boom, the main rotor (among other things) also sustained damage.

Conclusions

Complete auto-rotation maneuvers place large demands upon the pilot, and the margins for misjudgment are not large. In this case, the pilot made a miscalculation, which resulted in main rotor rpm being too low when he initiated the final recovery prior to touchdown. The result was that the ground contact was so hard, that the main rotor blades flexed downward and severed the tail boom. Contributory to the occurrence might have been that the pilot was somewhat tired after a long workday.