



National Transportation Safety Board Aviation Accident Final Report

Location:	Canadian, TX	Accident Number:	FTW01LA073
Date & Time:	03/02/2001, 1500 CST	Registration:	N8356F
Aircraft:	Hughes 369D	Aircraft Damage:	Substantial
Defining Event:		Injuries:	3 None
Flight Conducted Under:	Part 91: General Aviation - Business		

Analysis

The pilot made an approach to a high hover due to the rough/uneven terrain. As the pilot was hovering the helicopter to a level area at 40 feet agl, the helicopter began to yaw to the right. The pilot stated that he hover taxied through his "rotor wash," and the helicopter encountered "loss of tail rotor effectiveness." The pilot increased collective in an attempt to takeoff, and the helicopter made "two quick revolutions." The pilot stated that he elected to land the helicopter instead of continuing with the takeoff due to power lines and rising terrain. The pilot initiated an autorotation, and the helicopter touched down on the soft ground while still rotating, collapsing the left landing skid. Subsequently, the tail rotor and main rotor blades struck the ground. The helicopter came to rest leaning toward its left side.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the helicopter's encounter with loss of tail rotor effectiveness while hovering out-of-ground effect, and the pilot's failure to maintain control. A contributing factor was the soft terrain condition.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT

Phase of Operation: HOVER - OUT OF GROUND EFFECT

Findings

1. (C) LOSS OF TAIL ROTOR EFFECTIVENESS - ENCOUNTERED - PILOT IN COMMAND
2. (C) DIRECTIONAL CONTROL - NOT MAINTAINED - PILOT IN COMMAND
3. AUTOROTATION - PERFORMED - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: EMERGENCY DESCENT/LANDING

Findings

4. (F) TERRAIN CONDITION - SOFT

Factual Information

On March 2, 2001, at 1500 central standard time, a Hughes 369D helicopter, N8356F, was substantially damaged following a loss of directional control while landing near Canadian, Texas. The helicopter was owned and operated by a private individual. The airline transport pilot and both passengers were not injured. Visual meteorological conditions prevailed, and a flight plan was not filed for the 14 Code of Federal Regulations Part 91 business flight. The flight had originated from a private helipad near Amarillo, Texas, approximately 1415.

According to the pilot, he made an approach to a high hover due to the rough/uneven terrain. As he was hovering the helicopter at 40 feet agl to a level area, the helicopter began to yaw to the right. The pilot stated that he hover taxied through his "rotor wash," and the helicopter encountered "loss of tail rotor effectiveness." He increased collective in an attempt to takeoff, and the helicopter made "two quick revolutions." The pilot stated that he elected to land the helicopter instead of continuing with the takeoff due to power lines and rising terrain. The pilot initiated an autorotation, and the helicopter touched down on the soft ground while still rotating, collapsing the left landing skid. Subsequently, the tail rotor and main rotor blades struck the ground. The helicopter came to rest leaning toward its left side.

Examination of the helicopter by the FAA inspector revealed that the tail rotor drive shaft was twisted and separated about 6 inches forward of the tail rotor gearbox. The tailboom was bent and one tail rotor blade was found separated. Control continuity was confirmed from the anti-torque pedals to the tail rotor pitch change links. All five main rotor blades were damaged.

Pilot Information

Certificate:	Airline Transport; Commercial	Age:	50, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land; Single-engine Sea	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim.	Last FAA Medical Exam:	05/26/2000
Occupational Pilot:		Last Flight Review or Equivalent:	09/03/2000
Flight Time:	9000 hours (Total, all aircraft), 700 hours (Total, this make and model), 8800 hours (Pilot In Command, all aircraft), 41 hours (Last 90 days, all aircraft), 20 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Hughes	Registration:	N8356F
Model/Series:	369D	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	1260063D
Landing Gear Type:	High Skid	Seats:	4
Date/Type of Last Inspection:	08/03/2000, 100 Hour	Certified Max Gross Wt.:	3000 lbs
Time Since Last Inspection:	31.6 Hours	Engines:	1 Turbo Shaft
Airframe Total Time:	2600 Hours at time of accident	Engine Manufacturer:	Allison
ELT:		Engine Model/Series:	250-C20B
Registered Owner:	Knut G. Mjølhus	Rated Power:	420 hp
Operator:	Knut G. Mjølhus	Operating Certificate(s) Held:	None
Operator Does Business As:	Panhandle Steel Erectors	Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:		Distance from Accident Site:	
Observation Time:		Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	20 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	Calm /	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	13° C
Precipitation and Obscuration:			
Departure Point:	Amarillo, TX (NONE)	Type of Flight Plan Filed:	None
Destination:	Canadian, TX (NONE)	Type of Clearance:	None
Departure Time:	1415 CST	Type of Airspace:	Class G

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	2 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	3 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC): Douglas D Wigington **Report Date:** 10/09/2001

Additional Participating Persons: Jack M Swensen; FAA FSDO; Lubbock, TX

Publish Date:

Investigation Docket: NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov, or at 800-877-6799. Dockets released after this date are available at <http://dms.nts.gov/pubdms/>.

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).