Aviation Investigation Final Report

Location:	Cleburne, Texas	**Accident Number:**	CEN14LA222
Date & Time:	April 25, 2014, 14:30 Local	**Registration:**	N90636
Aircraft:	Hughes 269A	**Aircraft Damage:**	Substantial
Defining Event:	Low altitude operation/event	**Injuries:**	2 Minor
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The student pilot was air taxiing the helicopter with an instructor pilot on board. When the student pilot slowed to a hover taxi, the helicopter began bucking violently fore and aft. The helicopter descended and came to rest on its side. A postaccident examination of the wreckage and accident site revealed ground scars consistent with main and tail rotor blade strikes, which were consistent with the aft left skid and tail rotor contacting the ground while the helicopter was moving aft. A helicopter is customarily pitched with its tail low when the pilot performs a quick stop from an air taxi. Tail rotor drive shaft deformation was consistent with the tail rotor blade contacting the ground while being driven. No preimpact anomalies were detected that would have precluded normal operation of the helicopter. The evidence indicates that the student pilot allowed the tail rotor and aft skid to contact the ground as the helicopter slowed during the transition to hover taxi. The instructor did not anticipate the situation or intervene in a timely manner, which resulted in an uncontrolled descent and rollover.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The student pilot's failure to maintain tail rotor clearance from terrain while transitioning to a hover taxi and the instructor pilot's inadequate remedial action to prevent the impending tail rotor contact.

Findings

Personnel issues	Use of equip/system - Student/instructed pilot
Personnel issues	Lack of action - Instructor/check pilot
Aircraft	Altitude - Not attained/maintained

Factual Information

History of Flight

Maneuvering-hover	Low altitude operation/event (Defining event)
Maneuvering-hover	Collision with terr/obj (non-CFIT)

On April 25, 2014, about 1430 central daylight time, a Hughes 269A helicopter, N90636, impacted terrain following a descent from a hover taxi at the Cleburne Regional Airport (CPT), near Cleburne, Texas. The flight instructor and student pilot sustained minor injuries. The helicopter sustained substantial fuselage and main rotor damage. The helicopter was registered to and operated by a private individual under the provisions of 14 Code of Federal Regulations Part 91 as an instructional flight. Day visual flight rules conditions prevailed for the flight, which did not operate on a flight plan. The local flight originated from CPT about 1230.

According to the student pilot's accident report, he was flying the helicopter in an "air taxi" and slowed to a "hovering taxi." The helicopter began bucking violently fore and aft. He indicated that the helicopter descended and came to rest on its side on the ground.

A statement from the flight instructor, in part, said:

I have read [the student pilot's] statement and agree with it. I have no recollection of the beginning but, I remember seeing and feeling being shaken and stirred, violently, then being helped out of the aircraft.

At 1435, the recorded weather at CPT was: Wind 120 degrees at 11 knots; visibility 10 statute miles; sky condition clear; temperature 28 degrees C; dew point 6 degrees C; altimeter 30.00 inches of mercury.

A Federal Aviation Administration inspector examined the wreckage and took pictures of the accident site. According to the orientation of ground scars, the direction the helicopter was heading was about 145 degrees. The ground scars were on a ramp where there were buildings to the east and southeast of the accident site. The observed ground scars were consistent with main rotor blade and tail rotor blade strikes.

A safety investigator from the helicopter manufacturer examined the photographs. According to the manufacturer's investigator, the ground scars from the main rotor and tail rotor blades and the helicopter damage are consistent with the aft left skid contacting the ground while the aircraft was moving aft. A helicopter is customarily pitched tail low when a quick stop from an air taxi is performed. Main rotor blade ground scars were to the left and aft of the fuselage. A torsional deformation of the tail rotor drive shaft is visible at the forward end of the tail boom consistent with the tail rotor blade contact the ground while being driven.

The on-scene examination and review of photographs did not reveal any pre-impact anomalies that would have precluded normal operation of the helicopter.

Flight instructor Information

Certificate:	Flight instructor	**Age:**	84
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	3-point
Instrument Rating(s):	Airplane; Helicopter	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Helicopter; Instrument airplane; Instrument helicopter	**Toxicology Performed:**	No
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	April 2, 2013
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	17180 hours (Total, all aircraft), 16475 hours (Pilot In Command, all aircraft)		

Student pilot Information

Certificate:	Student	**Age:**	32
Airplane Rating(s):	None	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Without waivers/limitations	**Last FAA Medical Exam:**	October 3, 2012
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	90 hours (Total, all aircraft), 14 hours (Total, this make and model), 18 hours (Pilot In Command, all aircraft), 30 hours (Last 90 days, all aircraft), 8 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Hughes	**Registration:**	N90636
Model/Series:	269A	**Aircraft Category:**	Helicopter
Year of Manufacture:	1967	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	570708
Landing Gear Type:	N/A; Skid	**Seats:**	2
Date/Type of Last Inspection:	April 24, 2014 Annual	**Certified Max Gross Wt.:**	1670 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	3733 Hrs as of last inspection	**Engine Manufacturer:**	LYCOMING
ELT:	Not installed	**Engine Model/Series:**	HIO-360-A1A
Registered Owner:	On file	**Rated Power:**	180 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KCPT,854 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	01:35 Local	**Direction from Accident Site:**	346°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	11 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	120°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	28°C / 6°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Cleburne, TX (CPT)	**Type of Flight Plan Filed:**	None
Destination:	Cleburne, TX (CPT)	**Type of Clearance:**	None
Departure Time:	12:30 Local	**Type of Airspace:**	

Airport Information

Airport:	CLEBURNE RGNL CPT	**Runway Surface Type:**	
Airport Elevation:	854 ft msl	**Runway Surface Condition:**	Unknown
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	2 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Minor	**Latitude, Longitude:**	32.35361,-97.433891(est)

Administrative Information

Investigator In Charge (IIC):	Malinowski, Edward
Additional Participating Persons:	Gary Watson; Federal Aviation Administration; Irving, TX Steven L Gleason; Sikorsky Aircraft Corp.; Horseheads, NY
Original Publish Date:	October 27, 2014
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=89129