Aviation Investigation Final Report

Location:	Mc Cool Junction, Nebraska	**Accident Number:**	CEN12LA648
Date & Time:	September 19, 2012, 12:30 Local	**Registration:**	N37754
Aircraft:	Hughes 269A	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (total)	**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

After takeoff, about 400 feet above ground level and about 50 knots airspeed, the flight instructor reduced the throttle to idle so the student pilot could demonstrate an autorotation. The student dropped the collective to enter the autorotation, and the engine stopped producing power; the helicopter descended rapidly and landed hard. A postaccident examination of the helicopter revealed an obstructed air filter. It is likely that the student lowered the collective too quickly, which, combined with the obstructed air filter, created a rich fuel mixture and loss of engine power. The student pilot mismanaged the autorotation and the instructor did not intervene in a timely manner to prevent the hard landing.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The flight instructor's inadequate supervision of the student pilot's entry into the autorotation, which resulted in a hard landing. Contributing to the accident was the loss of engine power as a result of the student pilot rapidly lowering the helicopter's collective and the partly obstructed air filter.

Findings

Personnel issues	Monitoring other person - Instructor/check pilot
Personnel issues	Aircraft control - Student/instructed pilot
Aircraft	(general) - Incorrect service/maintenance

Factual Information

History of Flight

Takeoff	Loss of engine power (total) (Defining event)
Autorotation	Off-field or emergency landing
Autorotation	Hard landing

On September 19, 2012, about 1230 central daylight time, a Hughes 269A, helicopter, N37754, performed a hard landing, following an autorotation near Mc Cool Junction, Nebraska. The certificated flight instructor (CFI) and student pilot were not injured. The helicopter sustained substantial damage to the fuselage and tail boom. The helicopter was registered to and operated by the Star City Flying Club, Lincoln, Nebraska, under the provisions of 14 Code of Federal Regulations Part 91 as an instructional flight. Visual meteorological conditions prevailed for the flight, which operated without a flight plan. The flight originated from a private airfield.

According to statements taken by the responding Federal Aviation Administration inspectors, the purpose of the flight was to prepare the student pilot for an upcoming check ride. After takeoff, about 400 feet above ground level and at an airspeed on 50 knots, the CFI brought the engine back to idle to simulate a loss of engine power. The student dropped the collective and the engine quit producing power. An autorotation was initiated; however, the helicopter rapidly descended and landed hard. The tail boom was severed and the helicopter rolled over on its side. An inspection of the airframe and engine by inspectors from the FAA inspectors revealed that the air filter was approximately 80% obstructed by debris. A ground run was performed on the engine and the engine was found to have an excessively rich mixture.

Flight instructor Information

Certificate:	Airline transport; Commercial; Flight instructor	**Age:**	75,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Helicopter; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	November 1, 2011
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:			

Information

Certificate:	Private	**Age:**	72,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	
Other Aircraft Rating(s):		**Restraint Used:**	
Instrument Rating(s):		**Second Pilot Present:**	Yes
Instructor Rating(s):		**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	July 31, 2012
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	Hughes	**Registration:**	N37754
Model/Series:	269A	**Aircraft Category:**	Helicopter
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	67-16774
Landing Gear Type:	Skid	**Seats:**	2
Date/Type of Last Inspection:	May 1, 2013 Annual	**Certified Max Gross Wt.:**	1550 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	4706 Hrs at time of accident	**Engine Manufacturer:**	LYCOMING
ELT:	Not installed	**Engine Model/Series:**	HIO-360-B1A
Registered Owner:	STAR CITY FLYING CLUB LLC	**Rated Power:**	180 Horsepower
Operator:	STAR CITY FLYING CLUB LLC	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KJYR	**Distance from Accident Site:**	13 Nautical Miles
Observation Time:	12:35 Local	**Direction from Accident Site:**	320°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	12 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	250°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.85 inches Hg	**Temperature/Dew Point:**	32°C / 5°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	McCool Junction, NE	**Type of Flight Plan Filed:**	None
Destination:	McCool Junction, NE	**Type of Clearance:**	None
Departure Time:	12:30 Local	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	2 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	40.740997,-97.590934(est)

Administrative Information

Investigator In Charge (IIC):	Aguilera, Jason
Additional Participating Persons:	Jim Sazama; FAA FSDO; Lincoln, NE
Original Publish Date:	June 4, 2013
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=85100

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