



Aviation Investigation Final Report

Location:	Las Vegas, Nevada	Accident Number:	WPR09LA213
Date & Time:	April 22, 2009, 14:00 Local	Registration:	N17YS
Aircraft:	Schweizer 269C	Aircraft Damage:	Substantial
Defining Event:	Loss of engine power (total)	Injuries:	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The flight instructor reported that the helicopter's engine lost power when they were about 15 feet above the ground while making an approach to land on a pinnacle during an instructional flight. The helicopter hit the ground hard and then rolled down the hill and came to rest on its right side. During the post accident inspection, the engine was removed from the airframe and installed into a dynamometer test stand. The engine started on the first attempt and ran smooth and exhibited no abnormal indications or sounds.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Loss of engine power during approach for undetermined reasons.

Findings

Not determined Environmental issues (general) - Unknown/Not determined Sloped/uneven terrain - Effect on equipment

Factual Information

History of Flight	
Approach	Loss of engine power (total) (Defining event)

Hard landing

Roll over

Post-impact

HISTORY	OF FLIGHT
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Landing-flare/touchdown

On April 22, 2009, about 1400 Pacific daylight time, a Schweizer 269C helicopter, N17YS, landed hard following a loss of engine power near Las Vegas, Nevada. Airwork LLC was operating the helicopter under the provisions of 14 Code of Federal Regulations (CFR) Part 91. The commercial pilot with a certified flight instructor (CFI) certificate and the student pilot undergoing instruction (PUI) were not injured; the helicopter sustained substantial damage when it rolled over. The local instructional flight departed the North Las Vegas airport about 1330. Visual meteorological conditions prevailed, and no flight plan had been filed.

The CFI reported that while making an approach to land on a pinnacle, the helicopter engine lost power when they were about 15 feet above the ground. The helicopter hit the ground hard and then rolled down the hill and came to rest on its right side.

The helicopter was examined on site by Federal Aviation Administration (FAA) inspectors and recovered for further examination.

The FAA inspectors attempted to start the engine, but the engine appeared to be "locked up."

On May 13, 2009, investigators examined the engine at the owner's hangar facilities at the North Las Vegas airport.

During the engine examination, the top spark plugs were removed and noted that they were free of mechanical malfunction at the electrodes. The engine cooling fan was rotated by hand in the direction of normal rotation, at which time copious amounts of engine oil was forced out of the spark plug holes of the number 2 and 4 cylinders.

Mechanical continuity was established throughout the engine during the thumb compression check. The magnetos remained secure on their respective mounting flanges. The spark plugs and exhaust system components exhibited a light gray-brown coloration and remained free of oil residue. The oil suction screen remained free of visible contaminates.

The engine was transported to the facilities of Nevada Aircraft Engines, Henderson, Nevada, to be run on a dynamometer test stand under the supervision of the investigation team. The

engine started on the first attempt, and after a warm-up and magneto check, the engine produced 185 hp at 3,065 rpm. According to the data plate affixed to the engine, the subject engine is rated at 190 hp at 3,200 rpm. The engine ran smooth and exhibited no abnormal indications or sounds.

Investigators concluded that engine oil migration into the number 2 and 4 cylinders occurred during the time the helicopter lay resting on its right side. This contributed to a hydraulic lock event that was present when the Federal Aviation Administration inspectors attempted to start the engine. Once the oil was drained from the cylinders during the thumb compression check, the condition was mitigated, which allowed unimpeded full rotation of the crankshaft.

Flight instructor Information

Certificate:	Commercial; Flight instructor	Age:	41,Male
Airplane Rating(s):	None	Seat Occupied:	Right
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	Helicopter	Toxicology Performed:	No
Medical Certification:	Class 2 Without waivers/limitations	Last FAA Medical Exam:	September 12, 2008
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	April 27, 2008
Flight Time:	1100 hours (Total, all aircraft), 1100 hours (Total, this make and model), 1050 hours (Pilot In		

Student pilot Information

Certificate:	None	Age:	22,Male
Airplane Rating(s):	None	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	None	Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	15 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Schweizer	Registration:	N17YS
Model/Series:	269C	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	S1619
Landing Gear Type:	Skid	Seats:	3
Date/Type of Last Inspection:	March 1, 2009 Annual	Certified Max Gross Wt.:	2050 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	1789 Hrs as of last inspection	Engine Manufacturer:	LYCOMING
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	HIO-360 SER
Registered Owner:	L J AIR CORP	Rated Power:	205 Horsepower
Operator:	Airwork LLC	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	VGT,2205 ft msl	Distance from Accident Site:	9 Nautical Miles
Observation Time:	13:53 Local	Direction from Accident Site:	140°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	5 knots / None	Turbulence Type Forecast/Actual:	/
Wind Direction:	120°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.77 inches Hg	Temperature/Dew Point:	33°C / -10°C
Precipitation and Obscuration:	No Obscuration; No Precipitat	tion	
Departure Point:	North Las Vegas, NV (VGT)	Type of Flight Plan Filed:	None
Destination:	North Las Vegas, NV (VGT)	Type of Clearance:	None
Departure Time:	13:30 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:	36.273334,-115.369445(est)

Administrative Information

Investigator In Charge (IIC):	Jones, Patrick
Additional Participating Persons:	Nick Harrington; Federal Aviation Administration; Las Vegas, NV
Original Publish Date:	July 22, 2010
Last Revision Date:	
Investigation Class:	<u>Class</u>
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=73713

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