



National Transportation Safety Board Aviation Accident Final Report

Location:	High Island A-442A, GM	Accident Number:	CEN10LA036
Date & Time:	11/01/2009, 1040 CST	Registration:	N272M
Aircraft:	BELL 206	Aircraft Damage:	Substantial
Defining Event:	Loss of engine power (total)	Injuries:	1 Serious, 1 Minor
Flight Conducted Under:	Part 135: Air Taxi & Commuter - Non-scheduled		

Analysis

The helicopter had landed on an off-shore oil platform and was refueled. It then took off with one passenger. Shortly after lifting off, the pilot "heard a loud pop as the nose of the aircraft passed over the edge of the helideck. The noise was simultaneously accompanied by illumination of the engine out warning light and a needle split indication was observed on the engine and rotor tachometer gauge. As the aircraft yawed and lost climb performance, the pilot lowered the collective pitch full down and activated the floats. Upon landing on the water, the aircraft rolled left until inverted. The helicopter was later recovered and the engine disassembled and examined. The only anomaly noted was a loose Pc line, which would cause a loss of fuel flow and subsequent loss of engine power down to or below idle. It was determined that the torque required to realign the B-nut would be between hand-tight and 27 inch-pounds. The required torque is 80 to 120 inch-pounds. Torque values on the other air line fittings between the power turbine governor and the fuel control were found to range from 55 to 85 inch-pounds. A review of the engine maintenance records revealed that 36.7 hours prior to the accident, the turbine module was completely disassembled and overhauled. This would have required the removal and re-installation of the Pc line.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A total loss of engine power due to maintenance personnel's failure to correctly torque the Pc line following removal and reinstallation of the turbine module.

Findings

Aircraft	Engine (turbine/turboprop) - Incorrect service/maintenance (Cause)
Personnel issues	Installation - Maintenance personnel (Cause)

Factual Information

On November 1, 2009, approximately 1040 central standard time, a Bell 206L-1, N272M, registered to and operated by Rotorcraft Leasing Company LLC, was substantially damaged when it impacted water following a loss of engine power shortly after lifting off from an oil drilling platform. Visual meteorological conditions prevailed at the time of the accident. The non-scheduled domestic passenger flight was being conducted under the provisions of Title 14 Code of Federal Regulations (CFR) Part 135. The pilot was seriously injured and the passenger received minor injuries. The flight had just originated from platform High Island A442A, and was en route to platform High Island A515, both in the Gulf of Mexico.

According to the company accident report, the helicopter had landed on the platform and was refueled. It then took off with one passenger. Shortly after lifting off, the pilot "heard a loud pop as the nose of the aircraft passed over the edge of the helideck. The noise was simultaneously accompanied by illumination of the engine out warning light and a needle split indication was observed on the engine and rotor tachometer gauge. As the aircraft yawed and lost climb performance, the pilot lowered the collective pitch full down and activated the floats. Upon landing on the water, the aircraft rolled left until inverted. The pilot and the only passenger exited the aircraft and inflated their life vests and crawled onto the belly of the aircraft and inflated the life rafts. The pilot and the passenger hung on to the side of one of the inflated life rafts until a nearby crew boat arrived and pulled them out of the water."

The helicopter was later recovered and taken to the operator's base in Broussard, Louisiana, where, on November 19, 2009, the engine was disassembled and examined under the supervision of an FAA inspector. The only anomaly noted was a loose Pc line. According to Rolls Royce, a loose Pc line would cause a loss of fuel flow and subsequent loss of engine power down to or below idle.

Using a picture taken during the on-site engine examination, the position of the B-nut on the fuel control when torque paint was last applied was approximated. Re-connecting the B-nut to the fuel control fitting, the torque required to realign the B-nut was between hand-tight and 27 inch-pounds. The required torque is 80 to 120 inch-pounds. Torque values on the other air line fittings between the power turbine governor and the fuel control were found to range from 55 to 85 inch-pounds. The turbine wheels and nozzles exhibited signs of corrosion from salt water immersion. The engine controls were intact with no apparent damage.

A review of the engine maintenance records revealed that 36.7 hours prior to the accident, the turbine module had been completely disassembled and overhauled. This work would have required removal and re-installation of the Pc line.

History of Flight

Initial climb	Loss of engine power (total) (Defining event)
Emergency descent	Ditching

Pilot Information

Certificate:	Commercial	Age:	27, Male
Airplane Rating(s):	None	Seat Occupied:	Right
Other Aircraft Rating(s):	Helicopter	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Helicopter	Second Pilot Present:	No
Instructor Rating(s):	Helicopter; Instrument Helicopter	Toxicology Performed:	Yes
Medical Certification:	Class 2 Without Waivers/Limitations	Last Medical Exam:	03/06/2009
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	11/18/2008
Flight Time:	1874 hours (Total, all aircraft), 1549 hours (Total, this make and model), 1874 hours (Pilot In Command, all aircraft), 139 hours (Last 90 days, all aircraft), 39 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	BELL	Registration:	N272M
Model/Series:	206 L1	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	45365
Landing Gear Type:	Emergency Float; High Skid	Seats:	7
Date/Type of Last Inspection:	10/10/2009, AAIP	Certified Max Gross Wt.:	4150 lbs
Time Since Last Inspection:	85 Hours	Engines:	1 Turbo Shaft
Airframe Total Time:	13668 Hours	Engine Manufacturer:	ALLISON
ELT:	Installed, not activated	Engine Model/Series:	250-C30P
Registered Owner:	ROTORCRAFT LEASING COMPANY LLC	Rated Power:	650 hp
Operator:	ROTORCRAFT LEASING COMPANY LLC	Air Carrier Operating Certificate:	On-demand Air Taxi (135)
Operator Does Business As:		Operator Designator Code:	YTRA

Meteorological Information and Flight Plan

Observation Facility, Elevation:	BPT, 15 ft msl	Observation Time:	1000 CST
Distance from Accident Site:	95 Nautical Miles	Condition of Light:	Day
Direction from Accident Site:	172°	Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:	Clear	Temperature/Dew Point:	16° C / 9° C
Lowest Ceiling:	None	Visibility	6 Miles
Wind Speed/Gusts, Direction:	11 knots, 45°	Visibility (RVR):	
Altimeter Setting:	30.21 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:			
Departure Point:	HI-A442, GM	Type of Flight Plan Filed:	Company VFR
Destination:	HI-A515, GM	Type of Clearance:	None
Departure Time:	1040 CST	Type of Airspace:	Class G

Airport Information

Airport:	High Island A442A (A442)	Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	
Runway Used:	N/A	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Forced Landing

Wreckage and Impact Information

Crew Injuries:	1 Serious	Aircraft Damage:	Substantial
Passenger Injuries:	1 Minor	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Serious, 1 Minor		

Administrative Information

Investigator In Charge (IIC):	Arnold W Scott	Adopted Date:	05/06/2010
Additional Participating Persons:	Kevin Myers; FAA Flight Standards District Office; Baton Rouge, LA		
Publish Date:	05/06/2010		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=74996		

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