Aviation Investigation Final Report

Location:	Sabine Pass, Texas	**Accident Number:**	CEN09FA086
Date & Time:	December 11, 2008, 07:30 Local	**Registration:**	N180AL
Aircraft:	Bell 206L-4	**Aircraft Damage:**	Destroyed
Defining Event:	Controlled flight into terr/obj (CFIT)	**Injuries:**	5 Fatal
Flight Conducted Under:	Part 135: Air taxi & commuter - Non-scheduled		

Analysis

The air taxi flight was en route to an offshore drilling platform to drop off passengers. When the helicopter became overdue for its routine position report, the company attempted unsuccessfully to contact the pilot through several means, including radio and telephone. The company conducted an aerial search along the route of flight; however, the helicopter was not located. The company then notified the Coast Guard of the missing helicopter approximately an hour and forty minutes after it became overdue. The wreckage was located 2 miles offshore in 13 to 15 feet of water, along the helicopter's route of flight. An examination of the helicopter airframe, engine, and related systems revealed no anomalies. Damage was consistent with controlled flight into the water.

A cold front had just passed through the area several hours prior to the accident. Visible satellite imagery around the time of the accident depicted mid- to high-level cloud layers in the vicinity of the accident location. Breaks in the upper cloud layers depicted low stratus-type clouds within 15 nautical miles of the accident location. AIRMETS for instrument meteorological conditions, turbulence, and icing were valid for the accident area and route of flight. Cloud bases were most likely below 1,000 feet above ground level and visibility was restricted due to mist and possible light snow. The air temperature was recorded at 34 degrees Fahrenheit and the water temperature was recorded at 64 degrees Fahrenheit. There was no record to indicate that the pilot had obtained a formal weather briefing from a recorded source.

The pilot held a commercial certificate and an instrument rating; however, he was not approved for instrument flight under Part 135 and was not current. At the time of the accident

the company did not have a formal risk assessment program and a formal evaluation of the flight risks was not performed for the accident flight. The pilot normally flew a helicopter in which the flight tracking system engaged when the master switch was turned on; however, the accident helicopter required the system to be activated by a separate switch in the cockpit. This variation was not in the checklist. According to company records, the pilot had been flying the accident helicopter for two or three days prior to the accident. During this time there was no track record for the helicopter, which is consistent with the pilot not activating the helicopter's flight tracking system.

The pilot, whose personal flotation device was inflated and secured, suffered severe chest injuries complicated by asphyxia due to drowning. Two passengers were secured within their flotation devices; however, neither flotation device had been inflated. Two passengers were not wearing flotation devices when they were located; however, two personal flotation devices from the accident flight were recovered and showed signatures consistent with use. One had been partially inflated, and the second had been entirely inflated. The 4 passengers suffered asphyxia due to drowning with probable complication of cold water shock and hypothermia. The investigation was unable determine if the company's delay in notifying the Coast Guard contributed to the severity of injuries in the accident.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot’s failure to maintain clearance from the water. Contributing to the accident was the inadvertent encounter with instrument meteorological conditions.

Findings

Aircraft	Altitude - Not attained/maintained
Personnel issues	Aircraft control - Pilot
Environmental issues	(general) - Effect on operation
Organizational issues	Availability of safety program - Operator

Factual Information

History of Flight

Enroute-cruise	VFR encounter with IMC
Enroute-cruise	Controlled flight into terr/obj (CFIT) (Defining event)

HISTORY OF FLIGHT

On December 11, 2008, approximately 0730 central standard time, a Bell Helicopter 206L-4, N180AL, owned and operated by Rotorcraft Leasing Company L.L.C., was destroyed when it impacted water, six miles south of Sabine Pass, Texas, in the Gulf of Mexico. Instrument 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, and was operating on a company flight plan. The commercial pilot and four passengers were fatally injured. The cross-country flight departed Sabine Pass at 0722 and was en route to, West Cameron 157, an offshore drilling platform in the Gulf of Mexico.

According to officials with Rotorcraft Leasing Company L.L.C. (RLC) the pilot met his passengers, all employees of Island Operating Company, Inc., in Sabine Pass on the morning of the accident. Witnesses observed the pilot preflight and prepare the helicopter for the flight. At 0725, the pilot contacted RLC Communications Center and filed a flight plan from Sabine Pass to West Cameron 157. The pilot reported that he had four passengers and two hours of fuel on board, and expected to arrive at the destination at 0742.

RLC's Communications Center provided flight following services for the accident flight. Company policy required that a 15-minute position report be made for every flight. When the 15 minutes had elapsed (from the time the pilot filed his flight plan until his anticipated position report was due) the dispatcher immediately began to look for the helicopter. She attempted to contact the pilot at the destination platform, and the departure location with no success. The dispatch supervisor was notified of the missing helicopter within eight to 13 minutes of the missed report. Company helicopters in the area were launched in search of the missing helicopter with negative results. According to RLC records, the Coast Guard was notified of the missing helicopter between 0912 and 0913. According to the Coast Guard they were notified of the missing helicopter at 0917. Recovery vehicles were dispatched, and the helicopter wreckage was located approximately 1100 and recovered to Broussard, Louisiana, for further examination.

PERSONNEL INFORMATION

The pilot, age 43, held a commercial pilot certificate with helicopter and instrument ratings last

issued on May 7, 2007. He was issued a second class airman medical certificate on May 20, 2008. The certificate contained the limitation “must wear corrective lenses while flying.”

The pilot’s personal flight logbook was not located. According to the pilot’s resume he submitted to RLC in October of 2008, he had logged no less than 3,450 hours total time; 3,390 hours of which were logged in single engine helicopters, and 73 hours in simulated and actual instrument meteorological conditions. RLC flight records reflected the pilot had 220 hours of “offshore” flight experience.

RLC hired the pilot on October 10, 2008. According to the company records, he received his initial training in October of 2008. Between the dates of October 13, 2008, and October 22, 2008, he had completed a total of 15.8 hours of flight training in the Bell 206 B and L3 models. The pilot’s airman competency and proficiency checks for CFR 135.293 (Initial and recurrent pilot testing), and 135.299 (Pilot in command: Line checks: Routes and Airports) were completed with a satisfactory rating in all tested areas on October 22, 2008. In addition to his flight training, the pilot successfully completed “Water Survival/Helicopter Underwater Egress Training” on October 20, 2008, at Acadiana Safety Association.

According to the “RLC Pilot’s Monthly Summary” flight sheets, the pilot had flown 15.8 hours in October, 42.2 hours in November, and 19.1 hours in December. The pilot had logged no less than 77.1 hours in the Bell 206 while employed at RLC.

During interviews with the director of operations, chief pilot, and safety officer, the pilot’s training, experience, and flight ability were discussed. It was elaborated that the pilot had good flight skills and demonstrated good situational control during flight. The pilot had not been involved in any previous events or activities that would have raised question as to his judgment or ability.

AIRCRAFT INFORMATION

The accident helicopter, a Bell 206-L4 (serial number 52104), was manufactured in 1994. It was registered with the Federal Aviation Administration (FAA) on a standard airworthiness certificate for normal operations. An Allison 250-C30P turbine engine rated at 650 shaft-horsepower powered the helicopter.

The helicopter was registered to and operated by Rotorcraft Leasing Company, LLC., and was maintained under an approved inspection program. A review of the maintenance records indicated that the last inspection had been completed on November 30, 2008, at an airframe total time of 6,331.3 hours. The helicopter had flown 28.7 hours between the last inspection and the accident and had a total airframe time of 6,360 hours.

METEOROLOGICAL INFORMATION

The closest official weather observation station was Southeast Texas Regional Airport (KBPT),

Beaumont/Port Arthur, Texas, located 21 nautical miles (nm) north of the accident site. The elevation of the weather observation station was 15 feet mean sea level (msl). The routine aviation weather report (METAR) for KBPT, issued at 0653, reported, winds, 300 degrees at 9 knots; visibility, 10 miles; sky condition, overcast 4,400; temperature 1 degrees Celsius (C); dew point, minus 1 degrees C; altimeter, and 30.01 inches of mercury (Hg).

A special report was issued at the approximate time of the accident at 0736, which indicated winds at 300 degrees at 12 knots; visibility, 10 miles; ceiling broken at 1,200 feet, broken at 4,600 feet, and overcast at 12,000 feet; temperature, 1 degree C; dew point minus 1 degree C; and altimeter 30.03 inches of Hg.

A review of the observations indicated that a strong cold front moved through during the previous evening producing instrument meteorological conditions with visibility restricted in light rain, mixed freezing precipitation that turned to light to moderate snow, which ended at 0612 with a dusting of snow reported. At the time of the accident, the low pressure system was located to the east in central Alabama with a cold front extending south-southwestward into the Gulf of Mexico, with northwest winds of 30 knots behind the front.

The Aviation Weather Center in Kansas City, Missouri, issued the offshore area forecast at 0500 the day of the accident. The forecast for coastal waters, including the accident helicopter's route of flight, predicted scattered to broken clouds at 1,000 feet, broken clouds at 2,500 feet, with clouds tops at 5,000 feet. The surface winds were forecast to be out of the northwest at 20 to 25 knots. Occasional broken clouds at 700 feet with visibility three to five miles in rain and mist were forecast.

The National Weather Service also had a full series of Airman's Meteorological Information (AIRMET) current for the area. AIRMET Zulu for moderate icing conditions from the freezing level to 20,000 feet, AIRMET Tango for potential moderate turbulence below 12,000 feet, and AIRMET Sierra for instrument flight rules conditions with ceilings below 1,000 feet and/or visibility below three statute miles in precipitation and mist.

Geostationary Operational Environmental Satellite (GOES) images taken at 0732 and 0745 depicted mid- to high-level clouds in the area of the accident. Breaks in the upper level clouds depicted low-level stratus-type clouds over the Gulf of Mexico in the vicinity of the accident location. A small band of stratocumulus was identified in the immediate vicinity of the accident site, consistent with that associated with more vertical development of clouds capable of producing snow showers. The Lake Charles (KLCH) WSR-88D weather radar did not detect any significant echoes over the accident site. The vertical azimuth display wind profile depicted winds from the north-northwest at 25 knots at 1,000 feet, increasing to 30 knots at 2,000 feet.

Water temperature was recorded at 64 degrees Fahrenheit.

According to RLC, other flights in the area had been grounded or delayed due to the passing

weather.

According to a pilot involved in the search and rescue efforts, he encountered northwest winds at 30 knots gusting to 35 knots, a temperature of 40 degrees Fahrenheit (F), visibility greater than 10 miles, and a ceiling of 700 feet overcast. This weather was encountered at the accident site.

The pilot had not obtained a weather briefing through the FAA Flight Service Station or by utilizing a Direct User Access Terminal System (DUATS). The pilot was observed utilizing the computer prior to the accident to obtain weather information.

WRECKAGE AND IMPACT INFORMATION

The accident site was located two miles offshore in 13 to 15 feet of water. The wreckage was recovered and relocated to a secure hangar in Broussard, Louisiana, for further examination.

MEDICAL AND PATHOLOGICAL INFORMATION

The Southeast Texas Forensic Center, Inc., (Jefferson County Morgue) performed the autopsy on the pilot on December 12, 2008, as authorized by the Justice of the Peace, Precinct 8, Jefferson County, Texas. The autopsy revealed the cause of death as a “crushed chest complicated by asphyxia due to drowning.”

The FAA’s Civil Aerospace Medical Institute, Oklahoma City, Oklahoma, performed toxicological tests on specimens that were collected during the autopsy (CAMI Reference #200800281001). Results were negative for all tests conducted.

The Southeast Texas Forensic Center, Inc., (Jefferson County Morgue) performed the autopsies on the four passengers, as authorized by the Justice of the Peace, Precinct 8, Jefferson County, Texas. The autopsies revealed the cause of death as a “asphyxia due to drowning with probable complication of cold water shock and hypothermia.”

SURVIVAL ASPECTS

According to RLC, each passenger that flies with their company is required to view a safety video, entitled “Helicopter Passenger Orientation,” prior to participating in charter activities. This video explains how to safely approach a running helicopter, how to fasten and unlatch a seatbelt, and how to wear and activate the personal flotation devices, amongst other safety topics. In addition, each helicopter was equipped with a passenger cabin safety card. This card depicts the same requirements in addition to requirements for deploying the flotation raft.

RLC policy dictated that prior to each flight the pilot was to provide a safety briefing that included the location of survival equipment and the use of seat belts, and flotation equipment. Both the pilot and passengers were required to wear personal flotation devices during all

phases of over water flight. Finally, most companies who employ RLC for charter purposes provide water survival and helicopter underwater egress training to their employees before they participate in over water operations. The swimming ability of the pilot and passengers was not determined.

Seat belts

The left front seatbelt assembly separated from the wreckage and was located in the water by the U.S. Coast Guard. The assembly included the right and left shoulder harness, headrest, inertial reel, buckle and right lap belt. The left lap belt remained attached to the door and door frame assembly. The buckle was latched together, securing the shoulder harness portion of the buckle. The right shoulder harness was twisted once. Slight deformation of the shoulder harness webbing was noted.

The right front seatbelt assembly separated from the wreckage and was located in the water by the U.S. Coast Guard. The assembly included the right and left shoulder harness, headrest frame, inertial reel, buckle, and right and left lap belt. The buckle was latched together, securing the shoulder harness portion of the buckle. The right shoulder harness was twisted one full turn. A slight dent was noted on the male end of the lap belt. The shoulder harness buckles were deformed inward. Slight deformation of the seatbelt webbing was noted.

The left aft-facing seatbelt was unlatched and included the male and female end of the lap belt. The male end of the buckle and shoulder harness remained attached to the door frame. The webbing from the male end of the lap belt was slightly torn. The belt placard was attached but was unreadable.

The right aft-facing seatbelt was unlatched and included the seatbelt male and female end of the lap belt and shoulder harness. These remained attached to the fuselage structure. The male end of the lap belt buckle separated from the belt webbing and remained attached to the shoulder harness. Webbing material was frayed and torn within the cinch area of the male end of the buckle. The corresponding lap belt webbing was also frayed and torn.

The aft left seatbelt was unlatched and included the male and female lap belt and shoulder harness. The male end of the lap belt buckle separated from the belt webbing and remained attached to the shoulder harness. The male buckle was bent down approximately 30 to 35 degrees. Slight deformation of the material was noted.

The aft center seat belt assembly was buckled together securing a personal flotation device. No tearing or material deformation was noted. According to officials with RLC, the personal flotation device is secured in the seatbelt when no one is occupying that seat.

The right aft seat belt assembly included the male and female lap belt with the shoulder harness. The assembly was unlatched.

Personal Flotation Devices

Four personal flotation devices (PFD) were recovered from the water and were arbitrarily labeled A, B, C, and D for identification purposes only. Each PFD was equipped with a whistle and compass, a bottle of sea dye, and an exposure blanket. Each inspection label indicated that the last inspections took place on November 24, 2008.

PFD A was located within the aft cabin of the main wreckage. The PFD was found secured with the latched center seat belt as per company procedure. PFD B was partially inflated and entangled within the blue protection cover and activation pull tabs. No apparent tearing of the material was noted. Both CO2 bottles had been deployed. PFD C was partially inflated and entangled within the blue protection cover. The right CO2 bottle had been deployed. The left CO2 bottle was still secure. There was no apparent tearing of the material. The harness was not fastened. The very end of the harness material, containing a yellow flap, had been pulled through to the male end of the harness. PFD D was still contained within the blue protection cover. Neither the right nor left CO2 bottle had been deployed. There was no apparent tearing of the material. The harness was not fastened.

Three additional PFD's were recovered with the pilot and two of the passengers. They were provided to the Safety Board for further examination. The PFD's were arbitrarily labeled E, F, and G for identification purposes. Each PFD was equipped with a whistle and compass, a bottle of sea dye, and an exposure blanket. Each inspection label indicated that the last inspections took place on November 24, 2008.

PFD E was covered with a brownish-red substance, was wet, exuded a strong odor, and was not inflated. The exterior shell, the border of which was secured by a hook and loop fastener that was open along its entire length except for a small area on the top right, housed a yellow flotation bladder. There was no apparent tearing of the material. Neither the right nor the left CO2 inflation canisters had been activated (levers up and tucked into the cylinder housing).

PFD F was wet and described as having a blue fabric front cover, a blue mesh back cover, and a yellow flotation bladder. The exterior shell, the border of which was secured by a hook and loop fastener which was open along its entire length. The bladder was fully deflated. The right CO2 inflation canister had been activated (lever down and free movement). The left CO2 canister had not been activated (lever up and tucked into the cylinder housing). The exterior shell of the PFD was intact with the exception of a tear located in the lower left side rear panel at the base of the opening for the arm.

PFD G was wet, covered with a yellow/orange substance, and described as having a medium blue fabric exterior shell. The shell was secured at the borders by a hook and loop fastener that was closed/sealed along its entire length. Inside the shell was a yellow floatation bladder that was folded so as to fit within the confines of the shell. The bladder was fully deflated. Neither the right nor the left CO2 inflation canisters had been activated (levers up and tucked into the cylinder housing). There were no obvious anomalies in the shell of the PDF, and the buckles,

and straps were intact.

TESTS AND RESEARCH

The Safety Board IIC, investigators from the FAA, Bell Helicopter, and Rolls Royce, and representatives from RLC examined the wreckage on December 14 and 15, 2008.

The fuselage separated into no less than three large pieces. The first piece consisted of the forward fuselage to include the instrument panel, radio stack, pilot flight controls, circuit breaker panel and the two front seat areas. The upper frame and Plexiglas for the upper and lower windscreen and bubble separated and were missing. The pilot seat back and the passenger seat and seat back were missing. The left side of the forward fuselage was crushed aft and bent.

All engine conditions gauges read zero. The following instrument panel instrument and gauge observations were made:

Flight Instruments

Airspeed Indicator – 56 knots
Attitude Indicator – 32 degree bank to the left, nose down
Heading Indicator – 330 degrees
Altimeter – 9,000 feet
Kollsman Window – 30.06
Vertical Speed Indicator – 75 foot per minute descent
Turn Coordinator – Ball to the right, needle to the left

Other Instruments

Fuel Quantity – 575 pounds
DC Load – 2 percent
Fuel Pressure – zero
Hobbs Meter – 2,262.4

The following switch positions were noted:

Fuel Valve – on, gate attached but deflected to the left
Float Switch Toggle – Normal
Pulse Light – Off
SkyConnect – Off
Float Arm (On Collective) – Gate down, switch off
Throttle Position – Mid throttle

The circuit breaker panel was separated from the overhead structure of the fuselage. Several

circuit breakers were extended.

The second fuselage piece was five feet in length and consisted of the lower seat pan area for the two aft facing passengers and the fuel bladder. The seat and seat back on both sides were missing. This piece exhibited torn metal. The fuel bladder was unremarkable.

The third section of fuselage consisted of the upper roof, transmission and engine assembly, the upper aft portion of the passenger cabin and 19 inches of the forward portion of the tail boom. Mud and water were impacted inside of the engine, transmission, and cowling area. The entire section exhibited torn and bent metal. All four door assemblies separated from the fuselage.

The engine and transmission remained attached at their design mounting points. Gas generator (N1) and power turbine (N2) were rotated by hand and less than one inch of travel was obtained. The freewheeling unit continuity was confirmed by drive shaft rotation. The transmission rotated less than one inch when activated by hand at the output drive shaft. Rotational scoring was noted on several portions of the drive shaft. The engine was retained for further examination.

Control continuity was traced from the main rotor to the stub of the tailboom. Control and push/pull tube movement confirmed elevator and pitch link correctness. Continuity was confirmed to the main rotor control tubes from either side with separation point signatures being consistent with impact and overload.

The tail boom consisted of the tail rotor drive shaft, left and right horizontal stabilizer, tail rotor gear box, and one tail rotor blade. The left horizontal stabilizer leading and trailing edges were unremarkable. The elevator on both the left and right side of the stabilizer was free to move when activated by hand and the control tubes were continuous. Thirteen inches of the left fin remained attached. The right horizontal stabilizer leading and trailing edges were unremarkable. Approximately eight inches of the vertical fin remained attached with a diagonal (forward high to aft low) separation angle estimated to be 35 to 40 degrees.

The tail rotor drive shaft cowling was crushed and twisted along a span of 36 inches towards the aft portion of the tail. The tail rotor drive shaft was bent slightly at a correlating location on the most aft section of the shaft. The tail rotor gearbox remained attached to the tail boom. One tail rotor blade remained attached to the gear box and exhibited leading edge polishing. The second blade separated at the blade hub and was not recovered. Tail rotor drive train continuity was confirmed by rotating the drive shaft by hand and noting movement of the blade. No binding was noted within the gearbox. Push/pull tubes for the tail rotor pitch change mechanism were continuous.

The vertical fin separated from the tail boom. The upper and lower leading edges were bent back to the right, consistent with hydro-dynamic crushing. The upper trailing edge was unremarkable and the lower trailing edge was bent slightly to the right and the bottom.

The main rotor blades were arbitrarily labeled “R” and “W” for red and white respectively. Both blades remained attached to the mast and the mast remained attached at the transmission. The mast was removed for transportation purposes. Blade R was removed at the blade grip and blade W (including the yoke and trunnion) was removed from the mast.

Blade R exhibited slight leading edge scoring. The blade was bowed up 30 degrees, 118 inches outboard of the blade root as measured from the blade grip bolt hole. The honeycomb interior was crushed inward 17.5 inches inboard from the blade end.

Blade W exhibited slight leading edge scoring. The honeycomb was crushed 89 inches inboard from the blade tip and 3.5 inches from the trailing edge. The blade was buckled from the leading edge to the trailing edge, 39.5 inches outboard as measured from the blade grip bolt hole. There was no evidence of leading edge impact damage and the break is consistent with impact damage.

The yoke and trunnion were unremarkable. The pitch change link end for the R and W blades measured three inches and 15 inches respectively. The correlating edge of the pitch change tubes measured 24 inches and 10.75 inches and remained attached to the rotating swash plate. The longer tube was bent up 90-degrees nine inches up from the swash plate attach point. Separation signatures were consistent with overload.

The skid assembly, to include the left and right skid, the aft cross tube, and the skid flotation system separated from the fuselage. The forward cross tube separated from the skid assembly, and remained attached to the lower forward fuselage. Both skid steps separated. The fasteners on the left aft ankle were removed for transportation purposes. Three float envelopes remained attached to the right skid and two float envelopes remained attached to the left skid.

The right forward float was deflated and remained attached to the skid at its design mounting point. The float bag remained attached to the skid as well. Two lateral cuts were noted on the outboard portion of the float; one measuring 12 inches in length and the second measuring 14 inches in length. The air system hoses were no longer attached to the float. The float was otherwise unremarkable. The right center float was deflated and remained attached to the skid at its design mounting point. The float bag remained attached to the skid as well. One lateral cut was noted on the outboard portion of the float measuring 5.5 inches in length. The air system hoses were no longer attached to the float. The float was otherwise unremarkable. The right aft float was deflated and remained attached to the skid at its design mounting point. The float bag remained attached to the skid as well. Two inflation hoses remained attached to the float. One lateral cut was noted measuring eight inches in length. A second square cut was noted on the outboard center side of the float measuring 7.5 inches and 12 inches on the two respective cut sides. According to the recovery crew, the floats were cut to aid in the recovery.

The left front float was deflated and remained attached to the skid at its design mounting

point. The float bag remained attached to the skid as well. The forward portion of the float separated from the aft portion along the seam line and was missing. The remaining aft portion of the float was 23.25 inches in length and remained attached to the air system. The remaining material was otherwise unremarkable. The left center float was deflated and remained attached to the skid at its design mounting point. Two inflation hoses remained attached to the skids as well. A small cut measuring two inches, a small cut measuring 4.25 inches, and an 11 inch cut were all noted in the material. The material was otherwise unremarkable. The left rear float was deflated and had separated from the skid at its design mounting point. Multiple cuts and tears were noted along the entire span of the float. According to the recovery crew, the floats were cut to aid in the recovery.

It was not determined if the floats were deployed by the pilot or as a result of the impact sequence.

The engine was secured in a shipping container, under the auspices of the Safety Board IIC, and shipped to Rolls Royce for further examination. On March 2, 2009, investigators from the Safety Board, Rolls Royce, and Bell Helicopter examined the engine. Due to exposure to salt water, many of the internal and external accessories deteriorated. No pre-impact anomalies were noted that would have precluded the engine from producing power at the time of the accident.

ADDITIONAL INFORMATION

Company Information

The FAA issued Rotorcraft Leasing Company L.L.C. an operating certificate in 1998 to conduct on-demand air taxi operations. RLC has conducted offshore air taxi operations in the Gulf of Mexico since this time. At the time of the accident RLC was conducting these operations from various onshore and offshore bases located in several states. The corporate headquarters, including Director of Training, the Director of Operations, Chief Pilot, and Director of Safety, were located in Broussard, Louisiana. The FAA Flight Standards District Office in Baton Rouge, Louisiana, managed the operating certificate.

At the time of the accident, the company was operating approximately 90 helicopters including the Bell 206 series, the Bell 407, the Bell 412, and the Sikorsky SK76. They employed approximately 200 pilots. Prior to their employment, each pilot was required to have a minimum of 1,500 hours total time; 500 hours of which was required to be pilot-in-command time.

Risk Assessment

At the time of the accident, the company did not have a formal risk assessment program or matrix. According to RLC, the pilots were responsible for checking the weather, performing a preflight check of the aircraft, and making the go or no-go decision for the flight. In addition,

pilots were trained on utilization of the IM SAFE checklist. Pilots would attend a safety meeting, at each base, prior to operations each day; however, the accident pilot did not attend this safety meeting the day of the accident, as he was not located at a base.

Following the accident, RLC implemented a formal risk assessment program involving a detailed matrix in order to assist the pilots in making the go or no-go decision, in the event they did not have immediate access to a lead pilot or supervisor to consult with prior to the flight. This has been included in the operations manual.

Float System and SkyConnect System

The float arm toggle switch is located on the outboard side of the pilot's collective control. A red gate, which the pilot would have to manually lift up in order to manipulate the toggle switch to the arm position, protects the toggle switch. The gate is in place to prevent the pilot from inadvertently arming the floats during cruise flight. To deploy the floats, after arming the floats, the pilot has to push a button next to the float arm switch. When the red gate is pushed down, the float arm switch is automatically moved to the off position. The switch was found in the secured position.

The SkyConnect toggle switch had a selection position of on or off. According to company records, the pilot had been flying the accident helicopter for two or three days prior to the accident. During this time there was no track record for the helicopter. This is consistent with the pilot not activating the SkyConnect system. The pilot normally flew a helicopter in which the flight tacking system engaged when the master switch was turned on. The accident helicopter required the SkyConnect system to be activated by a separate switch in the cockpit. This variation was not in the checklist. Following the accident the company issued a Safety Alert to all of their pilots to rectify this situation.

Pilot Information

Certificate:	Commercial	**Age:**	43,Male
Airplane Rating(s):	None	**Seat Occupied:**	Right
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	
Instrument Rating(s):	Helicopter	**Second Pilot Present:**	No
Instructor Rating(s):	Helicopter	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	May 20, 2008
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	October 22, 2008
Flight Time:	(Estimated) 3527 hours (Total, all aircraft), 103 hours (Total, this make and model), 3002 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Bell	**Registration:**	N180AL
Model/Series:	206L-4	**Aircraft Category:**	Helicopter
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	52104
Landing Gear Type:	Skid	**Seats:**	7
Date/Type of Last Inspection:	December 1, 2008 AAIP	**Certified Max Gross Wt.:**	4450 lbs
Time Since Last Inspection:	29 Hrs	**Engines:**	1 Turbo shaft
Airframe Total Time:	6360 Hrs at time of accident	**Engine Manufacturer:**	Allison
ELT:	Installed, not activated	**Engine Model/Series:**	250-C30P
Registered Owner:	Rotorcraft Leasing Company, LLC	**Rated Power:**	650 Horsepower
Operator:	Rotorcraft Leasing Company, LLC	**Operating Certificate(s) Held:**	On-demand air taxi (135)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	BPT	**Distance from Accident Site:**	21 Nautical Miles
Observation Time:	07:53 Local	**Direction from Accident Site:**	337°
Lowest Cloud Condition:	Thin Overcast / 4400 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Overcast / 4400 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	9 knots / None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	300°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.01 inches Hg	**Temperature/Dew Point:**	1°C / -1°C
Precipitation and Obscuration:			
Departure Point:	Sabine Pass, TX	**Type of Flight Plan Filed:**	Company VFR
Destination:	West Cameron157, GM	**Type of Clearance:**	None
Departure Time:	07:22 Local	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	4 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	5 Fatal	**Latitude, Longitude:**	29.655,-93.948333(est)

Administrative Information

Investigator In Charge (IIC):	Rodi, Jennifer
Additional Participating Persons:	Dave Keenan; Federal Aviation Administration - AAI-100; Washington, DC David C Dosker; Bell Helicopter; Fort Worth, TX Jack Johnson; Rolls-Royce; Indianapolis, IN Gerald Golden; Rotorcraft Leasing Co., LLC; Broussard, LA Brian MacDonald; TSB; Canada
Original Publish Date:	August 12, 2010
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=69554