
		NTSB ID: MIA02GA011		Aircraft Registration Number: N911DB	
		Occurrence Date: 10/22/2001		Most Critical Injury: Fatal	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place Bartow		State FL	Zip Code 33830	Local Time 0103	Time Zone EDT
Airport Proximity: Off Airport/Airstrip		Distance From Landing Facility: 1.2			
Aircraft Information Summary					
Aircraft Manufacturer Bell		Model/Series OH-58A		Type of Aircraft Helicopter	
Revenue Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:					
HISTORY OF FLIGHT					
<p>On October 22, 2001, about 0103 eastern daylight time, a Bell OH-58A helicopter, N911DB (call sign Air 1), owned and operated by the Polk County Sheriff's Office (PCSO), as a Title 14 CFR Part 91 public-use flight, impacted in a swampy area about 1.2 miles northwest of the Bartow Municipal Airport, Bartow, Florida. Instrument meteorological conditions prevailed. No flight plan was filed. The helicopter was destroyed. The commercial-rated pilot and flight observer received fatal injuries. The flight had originated from the Bartow Airport at 0030.</p>					
<p>The pilot of N911DB received a call from the PCSO Communications Center (dispatcher) for aerial surveillance shortly after a burglary in the nearby city of Eaton Park, Florida, located about 7 miles northwest of the Bartow Airport. N911DB departed the airport and flew to a crime scene area where it provided aerial support. At 0058, the pilot of N911DB called PCSO dispatcher, and stated he was clear of the scene. About 0103, and while en route returning to the Bartow Airport, the pilot was contacted by the dispatcher, and told that a deputy at a power plant to the south-southwest of his current location required assistance. The last radio communication with the helicopter was a request from a deputy to have Air 1 do a fly-by "Florida Power," when Air 1 answered "10-4." An attempt to make contact with the helicopter by the PCSO dispatcher was made at 0105, with no response. At 0145, the chief pilot for the PCSO's air section was notified by the PCSO Communications Center that they could not raise Air 1 by radio. The Chief Pilot began a search for N911DB about 0250, and found the helicopter about 0400.</p>					
<p>A review of radar data showed the helicopter initially flew eastbound, after departure from the crime scene area, for about 2 miles, and then headed southbound (150 degrees) for 3/4 mile, then 180 degrees for 1 mile before radar contact was lost at 0102:35. In addition, when the radar data was placed on a map of the area it showed that the helicopter flew to the north of Lake Hancock while heading eastbound, and then flew over the water along the eastern portion of the lake, after it had turned to a southerly heading (See the copies of the radar data, an attachment to this report).</p>					
PERSONNEL INFORMATION					
<p>The pilot held an FAA commercial pilot certificate, with airplane single engine land, helicopter, airplane instrument, last issued on February 7, 2001, when he was issued his commercial rotor wing rating. He held an FAA class 2 medical certificate issued on August 17, 2000, with no limitations. He received a biennial flight review, as required by 14 CFR Part 61, on February 7, 2001. As per the entries in his PCSO flight records, he had accumulated a total of 1,031 total flight hours, 477 total single engine flight hours, and 554 hours rotorcraft. In addition, the records showed that he had a total of 232 night flight hours, 13 simulated instrument flight hours, and 49 actual instrument flight hours. In the last 90 days before the accident, the pilot flew a total 90 hours;</p>					
FACTUAL REPORT - AVIATION					

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: MIA02GA011
	Occurrence Date: 10/22/2001
	Occurrence Type: Accident

Narrative (Continued)

all in this make and model aircraft. In the last 30 days before the accident, the pilot flew a total of 67 hours all in this make and model aircraft.

The pilot was hired by PCSO in 1994 and had been a flight officer since 1997. He had obtained his single engine private pilot's license on his own and had accumulated 250 flight hours before starting his rotary wing training with PCSO. He started his rotary wing training with the PCSO in a Robinson R22 on May 16, 2000, completed his training and received his FAA private rotary wing rating on November 6, 2000, with a total of 200 flight hours in the R22. He received his commercial rotary wing rating on February 7, 2001. The pilot started his transition in OH-58 helicopters on February 16, 2001. He logged 100 flight hours in OH-58 helicopters, and completed his transition training on June 9, 2001. At the time of the accident the pilot had logged about 226 total flight hours in this make and model helicopter. On the same day he completed 20 hours in the OH-58 on law enforcement tactics with the use of night vision goggles (NVG). At the time of the accident he had logged a total of 156.1 NVG flight hours.

AIRCRAFT INFORMATION

The helicopter was a Bell; model OH-58A, serial number 72-21189, manufactured in 1972. At the time of the accident the helicopter had accumulated 4,822.2 total flight hours. The helicopter received an annual inspection on June 30, 2001, 134.2 hours before the accident. The helicopter was equipped with one Allison (Rolls-Royce) T63-A720, 420-shaft horsepower engine. According to the maintenance logbooks, the engine at the time of the accident had a total time of 1,743.9 hours (See the copies of the engine and airframe logbooks, an attachment to this report).

METEOROLOGICAL INFORMATION

The automated weather for the Bartow Airport for 0100 was: 400 broken, visibility 10 sm, fog and drizzle, wind 060 at 6 knots, temperature 23 degrees C, dew point 23 degrees C, and the altimeter was 30.05 in Hg.

According to the PCSO dispatcher's transcript of radio communications, between the crew of Air 1, and the dispatcher, the crew of Air 1 made the following transmissions references to fog, while assisting in the burglary in progress; Air 1 said (On Page 20), "...we're in an awful lot fog...we'll stay ah...as long as we can. We're in an awful lot of fog here." Air 1 said (On Page 22), "...We're trying to locate you through the fog, give me a light." Air 1 said (On Page 23), "...we're having to look through the fog so it's ah...limiting our clear ability so bare with us." (See the copy of the PCSO dispatcher transcript of radio communications, an attachment to this report).

In addition, the chief pilot reported that there was fog at the airport and in the vicinity when he arrived at the airport, to start the search for N911DB.

WRECKAGE AND IMPACT INFORMATION

The accident site was located about 1.2 miles northwest of the Bartow Airport. The site was in an area of a saw grass swamp, and a reclaimed phosphate pit. The accident occurred during the hours of darkness about 27 degrees, 57.10 minutes north, and 081 degrees, 48.8 minutes west. The terrain was flat with low vegetation and no obstacles in the immediate area. The helicopter was observed to be lying mostly submerged and inverted in about 4 feet of water with a portion of the belly, landing gear and vertical fin protruding above the surface. The fuselage was found with the tailboom and vertical fin aligned to a southerly heading. The dive team that helped in the recovery of the helicopter reported that an impact crater measuring about 4 feet deep, was located below the wreckage. The elevation at the crash site was reported to be about 200 feet MSL.

The on-site examination of the airframe and engine took place after the recovery of the helicopter

National Transportation Safety Board

FACTUAL REPORT

AVIATION

NTSB ID: MIA02GA011

Occurrence Date: 10/22/2001

Occurrence Type: Accident

Narrative (Continued)

and aircraft components were taken to a "T" hangar at the Bartow Regional Airport. The fuselage including the engine and main transmission were laid out at the hangar. The tailboom was broken off but remained secured to the fuselage by the tail rotor control cable. The cabin structure was compromised, with rearward crushing of the cabin extending from the nose aft. The entire fuselage forward of the engine was crushed and fractured. All instrument and circuit breaker panels were destroyed. The interior volume of the fuselage was totally compromised. The left horizontal stabilizer was torn off from front to rear. The landing (skid) gear remained in place and partially attached to the undercarriage. The forward cross tube was still attached to a section measuring about 2 feet by 4 feet.

Removal and layout of the flight controls showed all controls were accounted for with several fractures being noted. The pilot's collective and cyclic controls contained fractures at the base of the control tubes. The anti-torque pedals were torn from their mounts and the crossover tube. The actuating linkage was broken. All flight controls, and control linkages within the main fuselage were destroyed and/or damaged. An examination of these components revealed no breaks and continuity was established. All observed fracture surfaces appeared to be overload in nature.


Examination of the main transmission and main rotor revealed that the mast was bent, and then separated below the thickened area that is beneath the upper trunnion splines. The fracture surface appeared overload in nature. Main rotor and rotating controls exhibited no evidence of discrepancies. Bending, and twisting was observed to the main rotor blades. Both main rotor blades exhibited substantial damage. Both pitch links were broken. All observed damage was consistent with rotation. All fractures appeared to be overload. After removal of the mast, the transmission turned freely. The installed K-Flex coupling showed compression and evidence of rotational contact with the adjacent airframe during the impact sequence. The transmission had pressed down into the transmission deck as a result of impact forces. The mast was fractured in a plane roughly parallel to the static stops. The mast-retaining nut was secured to the mast. The aft portion of the engine-to-transmission coupling was engaged to the overrunning clutch assembly. The shaft was fractured at the base, engine end. The material damage revealed evidence of torsion in the drive direction. The flexors were also fractured.

The tailboom was still partially attached to the aft section of main fuselage by the tail rotor control cable. The left-hand horizontal stabilizer was torn from its mounting flange. The tail rotor drive train and Freewheeling Unit revealed that the freewheeling unit, installed in the engine gearbox functioned without any discrepancies. A 4-inch section of the tail rotor driveshaft remained engaged to the power takeoff gear. The tail rotor drive train showed evidence of rotation. No discrepancies were noted in the tail rotor drive train. The 90-degree gearbox turned freely. The tail rotor pitch change mechanism and control linkage were traced and showed no discrepancies.

The 90-degree tail rotor gearbox was torn from its mounting. The gearbox turned free and continuous. Both tail rotor blades remained attached to the yoke and the spherical bearings were intact and rotated freely. One of the tail rotor blades was buckled in two locations.

All hydraulic lines and support brackets were destroyed. One hydraulic actuator and the hydraulic pump were initially recovered with the main wreckage. The other two actuators were subsequently recovered from the impact crater. The actuators and pump were removed and taken to Bell Helicopter for further examination.

External examination of the engine revealed impact damage in the form of crushing of sheet metal, the stainless steel fuel, air, and lubrication lines. The engine was confined within the remains of the engine compartment. The metal mesh portion of the inlet particle separator was found wrapped around the forward portion of the compressor. Several pieces of plastic separator cones were observed in the area. Mechanical linkages to both the fuel control and power turbine governor throttle arms had been broken. The right-hand bipod mounting struts were broken at the upper deck

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: MIA02GA011
	Occurrence Date: 10/22/2001
	Occurrence Type: Accident

Narrative (Continued)

attachment. The left-hand bipod mounting struts remained intact, but were bent. The turbine mount could not be observed due to the compromised condition of the sheet metal in that area of the engine compartment. Prior to removal of the engine from the engine compartment, a visual inspection of the external condition of the engine and accessories was conducted, as well as a visual inspection of the fuel, air, and lubrication lines along with their associated fittings. Rotation of the N1 and N2 shafting systems was attempted, but could not be accomplished because both systems were bound.

The engine was removed from its compartment and washed down with fresh water. A closer examination of the engine condition revealed crushing deformation of the compressor front support at about the 12:00 o'clock position. The compressor front support inlet guide vanes were found damaged. Both compressor air discharge tubes were damaged. The right-hand air discharge tube contained some twist as well as a small tear through the wall. The exhaust collector was found crushed downward from the top. The horizontal fire shield was damaged. The vertical fire shield was damaged. The outer combustion case was buckled in the area of the combustor drain in the direction of the left-hand air discharge tube. The starter/generator was fractured from its mounting. The mounting flange remained attached to the gearbox with all four mounting bolts in place and secure. The starter driveshaft had sheared in the section of the shaft just forward of the gear. The section of gear remained engaged with the starter/generator gearshaft in the accessory gearbox. One of the fan blades was fractured near the base and tip damage was observed to the blades. The power turbine governor drive body was damaged with a section of the drive body broken. This section was still attached to the throttle lever arm that remained connected to the linear actuator assembly. The flyweight assembly and spool bearing were observed intact and remained within the body. The fuel control throttle lever indicated full open (90 degrees); the cam lever was just off the maximum stop. The compressor bleed valve body was fractured 360 degrees through the base of the struts. The air sensing line was deformed.


According to the PCSO, air section chief pilot, it was standard procedure for the fuel tanks to be topped off prior to a mission. Fueling was conducted from above ground storage tanks at the Bartow Regional Airport. About 50 gallons of fuel was drained from the tanks after the helicopter was recovered from the water. An aircraft fuel filter was installed. The filter housing was found damaged and the filter was removed for inspection. The filter bowl contained both fuel and water.

TEST AND RESEARCH

An inboard piece was cut from the left horizontal stabilizer and sent the NTSB Materials Laboratory for examination. The NTSB Materials Laboratory's factual report revealed the stabilizer predominately fractured in the "fore and aft direction along a rib." Optical microscopic examination revealed that the fracture surface displayed characteristics consistent with "overstress fractures in all fracture components." (See the NTSB Materials Laboratory Factual Report, an attachment to this report).

The engine was shipped to Rolls-Royce Corporation's facilities in Indianapolis, Indiana, for further investigation, and the disassembly inspection of the engine was conducted on December 5-6, 2001.

Visual external examination revealed that the outer combustion case had sustained buckling deformation in the area of the combustor drain, on the top and left side. The exhaust collector was found crushed downward from the exhaust ports. Both compressor air discharge tubes had sustained heavy deformation. The right-hand tube also showed a small tear through the wall. The vertical and horizontal fire shields were buckled and deflected aft and down. A portion of the starter/generator mounting flange was broken off; all four mounting studs were still in-place. The "B"-nut for the Pg line at the outlet fitting of the downstream accumulator was finger tight, but not properly torqued. The location of the "B"-nut is adjacent to a point of hard impact to the vertical fire shield. The No.8 bearing oil scavenge line was flattened at a point adjacent to the

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: MIA02GA011
	Occurrence Date: 10/22/2001
	Occurrence Type: Accident

Narrative (Continued)


damage to the vertical fire shield. When removing the accumulators and double-check valve, the check valve separated into two pieces. Closer examination of the fracture showed a substantial amount of corrosion to the fitting in the area of the fracture. The compressor front support exhibited heavy frontal deformation. The support had crushed rearward and inward. The inlet guide vanes exhibited twisting and buckling with damage to the trailing edges of the vanes. The N1 shafting system was bound in-place. The binding was determined to be due to crushing damage of the front support and case halves over the forward section of the axial rotor. The N2 shafting system was bound in place. The binding was determined to be due to hard contact between the 3rd stage Turbine wheel and the 4th stage Turbine nozzle at the blade track and outer rim.

The compressor was removed and disassembled, and the following was revealed: Mud was noted laying throughout the air flow path, located in the air discharge tubes, combustion liner, outer combustion case, gas producer and power turbine rotor. The first stage compressor blades were damaged due to aft crushing, and contact of the compressor front support and radial movement of the forward section of the axial rotor into the top compressor case half. Several 2nd and 3rd stage compressor blades showed tip damage in the direction opposite engine rotation. The compressor impeller blades showed rotational scoring 360 degrees with the heaviest contact in the inducer to knee area. Some material transfer from rub with the compressor shroud was noted. The compressor shroud exhibited a moderate amount of rub 360 degrees in the inducer to knee and exducer areas that corresponded with the rub signatures on the impeller blades. The compressor case halves contained several pieces of honeycomb material. All vanes were intact. Two 3rd stage blades were bent slightly. The top case half exhibited heavy rub in the 1st stage blade track in an area of about 30 to 40 degrees. The forward flange was bent aft.

The turbine was removed, and disassembled; the following was revealed: Upon removal of the outer combustion case and combustion liner, the gas producer tiebolt was noted to be fractured. The location of the fracture was just aft of the nut. The tiebolt had moved aft and contacted, but did not penetrate the No. 8 bearing sump nut. The splines for the turbine splined adapter, which was located on the 2nd stage Turbine Wheel stub shaft, were twisted and sheared. The turbine-to-compressor coupling, pinion-to-turbine coupling and spur adapter gearshaft were visually inspected. The splines were intact with no damage noted. The 3rd stage turbine nozzle outer rim face revealed a 360-degree rub due to contact from an axial shift of the 3rd stage turbine wheel. The 4th stage turbine nozzle exhibited heavy rub near 180 degrees due to contact with the shrouded tips of the 4th stage turbine wheel. In summary there was no evidence of engine or engine accessory discrepancies noted during the engine disassembly.

At the conclusion of the disassembly, the Turbine Tie Bolt and Second Stage Turbine Wheel stub shaft along with other turbine and shafting hardware were submitted to the Rolls-Royce Materials and Processes Laboratory to determine the mode of failure. The Rolls-Royce Materials and Processes Laboratory Report concluded that the Turbine Tie Bolt "failed in overload," and the Second Stage Turbine Wheel stub shaft "failed in overload."

According to the Rolls-Royce Materials and Processes Laboratory report, visual examination of the parts revealed that the stub shaft of the Second Stage Turbine Wheel was twisted and broken. A section of the broken shaft was retained within the splined adapter. The turbine tie bolt was also broken into two pieces. The turbine tie bolt broke in the reduced section adjacent to the nut. The oil sump nut was dimpled in the center as a result of contact with the turbine tie bolt nut during the "failure event." The splines on shafting components were in "good condition, showing no evidence of twisting or cracking." The examination of the turbine tie bolt fracture revealed that the "entire fracture morphology was ductile dimple, indicative of overload." There was "...no evidence of fatigue or material anomalies were observed on the fracture surface." The examination of the Second Stage Turbine Wheel stub shaft, following removal from the splined adapter revealed that the fracture morphology was "interdendritic and ductile dimple, indicative of overload." There was "...no evidence of fatigue or material anomalies [that] were observed on the fracture surface." No metallographic examinations were performed on the hardware. No chemical analyses

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: MIA02GA011
	Occurrence Date: 10/22/2001
	Occurrence Type: Accident

Narrative (Continued)

were performed on the hardware. (See the Rolls-Royce Materials and Processes Laboratory Factual Report, an attachment to this report).

The Rolls-Royce Materials and Processes Laboratory report was sent to the NTSB Materials Laboratory for review and comments. The NTSB Materials Laboratory submitted an "E" mail with the following comments, "...they found nothing in the report to disagree with." The deformation associated with the second stage turbine wheel stub shaft "...is a clear indication of a ductile torsional overstress." The NTSB report revealed; reference the turbine tie bolt, the type of loading is less clear. The Rolls-Royce report stated that ductile dimples were found over the entire bolt fracture; if this is so then it clearly is overstress. Perhaps without any sign of bending deformation it may be tensile. (See the NTSB Materials Laboratory "E" mail, an attachment to this report).

Three servos and the servo pump were taken to Bell Helicopter facilities in Fort Worth, Texas, and were tested under the supervision of Mr. Douglas Wigington, NTSB Air Safety Investigator, South-Central Regional Office, on January 22, 2002. One actuator and the hydraulic pump were successfully functionally tested. Two of the actuators were too severely damaged to be functionally tested. According to Mr. Wigington's notes neither of the servos could be tested due to "impact damage," and "...the pump was found to meet all test parameters per a new pump." (See Bell Helicopter notes, an attachment to this report).


MEDICAL AND PATHOLOGICAL INFORMATION

Dr. Stephen J. Nelson performed an autopsy on the pilot, at the District Ten, Medical Examiner's Office, Bartow, Florida, on October 22, 2001. According to the autopsy report the cause of death was "...Multiple Blunt Forces Traumatic Injuries." No findings, which could be considered causal to the accident, were reported.

Toxicological tests were conducted at the Federal Aviation Administration, Research Laboratory, Oklahoma City, Oklahoma, and revealed, "No ethanol detected...No drugs detected. "

ADDITIONAL INFORMATION

According to the PCSO it was customary for the pilot of N911DB to be flying the helicopter under NVG (night vision goggles). Most of the deputies that flew with the pilot of N911DB said he always flew at night with the goggles, and would land the helicopter using NVG. Heavily damaged remains of two pairs of Litton M949 goggles were found in the wreckage. The goggles were found separated from the victims, and in the "OFF" position. However, the type of goggles being used by the crew would automatically shut down if separated from the helmet and at 1 "G" of force. The individual in-charge of the PCSO's in-house training program, in the use of Night Vision Goggles (NVG), describe their use and restrictions during Instrument Meteorological Conditions (IMC). According to his statement in the use of NVGs, the NVGs simply enhance an aviator's ability to safely navigate and avoid obstacles while performing flight at lower altitudes than those normally flown at night. NVGs specifically, enhance visibility for law enforcement missions. The NVGs are worn directly in front of the aviator's eyes and by movement of the head can very quickly and readily be moved wherever the wearer chooses. NVGs are not intended for use while conducting IMC operations. Every crewmember that is trained under any "responsible" NVG training program understands and respects this. Crewmembers are taught various techniques for recognizing when meteorological conditions are deteriorating to the point that VMC flight, even with NVGs, is no longer advisable. Instruction is also given as to procedures for inadvertently entering into IMC. One of the most advantageous aspects of the newer generation of NVGs, which were in use at the time of the accident, is "Look Under" capability. When properly worn the NVGs permit pilots a full view of the cockpit instrument panel simply by shifting their eyes to look underneath the NVGs. It also allows for a "FULL" transition to instrument flying techniques if needed. There is no need to remove the goggles for this transition. The pilot simply transitions to "instrument" flying. To further


 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: MIA02GA011
	Occurrence Date: 10/22/2001
	Occurrence Type: Accident


Narrative (Continued)

bolster this premise, "...U.S. Army aircrews are taught NOT to 'flip up' or remove their goggles until established in cruise flight." Thereby preventing an attempt to fly the aircraft and remove the NVGs simultaneously. According to the PCSO's NVG training officer, "...this could lead to a very dangerous situation."

The report concluded that, "...NVGs are not intended for IMC conditions. NVG operations are intended for VMC operations to enhance...safety while flying at night. Due to 'look under' capability, transition to the instrument panel is very easily attained without hindering the ability to fly on the instruments however; this is not to imply that missions should be launched into IMC conditions. Intentional NVG flight into IMC conditions is not advisable and serves no operational goal." (See Detective Noad's PCSO report Page 9 of 15, an attachment to this report).

The helicopter was released to Detective Vernon Noad, on behalf of the Polk County Sheriffs Department, on October 24, 2001, and the engine was released on December 6, 2001. The servos were released to Detective Vernon Noad, on January 22, 2002.

 National Transportation Safety Board FACTUAL REPORT AVIATION		NTSB ID: MIA02GA011			
		Occurrence Date: 10/22/2001			
		Occurrence Type: Accident			
Landing Facility/Approach Information					
Airport Name	Airport ID:	Airport Elevation	Runway Used	Runway Length	Runway Width
BARTOW MUNI	BOW	128 Ft. MSL	9L	5001	150
Runway Surface Type: Asphalt					
Runway Surface Condition: Dry					
Approach/Arrival Flown: NONE					
VFR Approach/Landing: Unknown					
Aircraft Information					
Aircraft Manufacturer		Model/Series		Serial Number	
Bell		OH-58A		72-21189	
Airworthiness Certificate(s): Normal					
Landing Gear Type: Skid					
Amateur Built Acft? No	Number of Seats: 4	Certified Max Gross Wt.	3350 LBS	Number of Engines: 1	
Engine Type:	Engine Manufacturer:	Model/Series:	Rated Power:		
Turbo Shaft	Allison	T63-A720	420 HP		
- Aircraft Inspection Information					
Type of Last Inspection	Date of Last Inspection	Time Since Last Inspection	Airframe Total Time		
100 Hour	10/2001	134.2 Hours	4848.5 Hours		
- Emergency Locator Transmitter (ELT) Information					
ELT Installed?/Type Yes /	ELT Operated? No	ELT Aided in Locating Accident Site? No			
Owner/Operator Information					
Registered Aircraft Owner		Street Address			
Polk County Sheriff's Dept.		455 North Broadway Ave.			
		City	State	Zip Code	
		Bartow	FL	33830	
Operator of Aircraft		Street Address			
Polk County Sheriff's Dept.		455 North Broadway Ave.			
		City	State	Zip Code	
		Bartow	FL	33830	
Operator Does Business As:			Operator Designator Code:		
- Type of U.S. Certificate(s) Held: None					
Air Carrier Operating Certificate(s):					
Operating Certificate:			Operator Certificate:		
Regulation Flight Conducted Under: Part 91: General Aviation					
Type of Flight Operation Conducted: Public Use					

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: MIA02GA011
	Occurrence Date: 10/22/2001
	Occurrence Type: Accident

First Pilot Information

Name On File	City On File	State On File	Date of Birth On File	Age 33
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Sex: M	Seat Occupied: Right	Occupational Pilot? Police	Certificate Number: On File
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Certificate(s): Commercial; Private

Airplane Rating(s): Single-engine Land

Rotorcraft/Glider/LTA: Helicopter

Instrument Rating(s): Airplane

Instructor Rating(s): None

Current Biennial Flight Review? 02/2001

Medical Cert.: Class 2	Medical Cert. Status: Valid Medical--no waivers/lim.	Date of Last Medical Exam: 08/2000
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- Flight Time Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Multi-Engine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air
						Actual	Simulated			
Total Time	1031	226	477		232	13	49	534		
Pilot In Command(PIC)		208			156					
Instructor										
Instruction Received										
Last 90 Days	90	90			81			90		
Last 30 Days	67	67			26			67		
Last 24 Hours	3	3			3			1		

Seatbelt Used? Yes	Shoulder Harness Used? Yes	Toxicology Performed? Yes	Second Pilot? No
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Flight Plan/Itinerary

Type of Flight Plan Filed: Company VFR

Departure Point Same as Accident/Incident Location	State	Airport Identifier BOW	Departure Time 0030	Time Zone EDT
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Destination Local Flight	State	Airport Identifier	
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Type of Clearance: None

Type of Airspace: Class D

Weather Information

Source of Wx Information:


No record of briefing

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: MIA02GA011
	Occurrence Date: 10/22/2001
	Occurrence Type: Accident

Weather Information					
WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
BOW	0100	EDT	128 Ft. MSL	1 NM	64 Deg. Mag.
Sky/Lowest Cloud Condition: Clear			Ft. AGL	Condition of Light: Night/Dark	
Lowest Ceiling: Broken		400 Ft. AGL		Visibility: 0.25 SM	Altimeter: 30.05 "Hg
Temperature: 16 °C	Dew Point: 16 °C	Weather Conditions at Accident Site: Instrument Conditions			
Wind Direction: 60		Wind Speed: 6		Wind Gusts:	
Visibility (RVR): Ft.		Visibility (RVV) SM			
Precip and/or Obscuration:					

Accident Information		
Aircraft Damage: Destroyed	Aircraft Fire: None	Aircraft Explosion: None

- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL
First Pilot	1				1
Second Pilot					
Student Pilot					
Flight Instructor					
Check Pilot					
Flight Engineer					
Cabin Attendants					
Other Crew	1				1
Passengers					
- TOTAL ABOARD -	2				2
Other Ground					
- GRAND TOTAL -	2				2

 National Transportation Safety Board FACTUAL REPORT AVIATION	NTSB ID: MIA02GA011	
	Occurrence Date: 10/22/2001	
	Occurrence Type: Accident	

Administrative Information

Investigator-In-Charge (IIC)

Alan J. Yurman

Additional Persons Participating in This Accident/Incident Investigation:

Scott Strickland
FAA
Orlando, FL

David C Dosker
Bell Helicopter
Fort Worth, TX

Jeff Edwards
Rolls-Royce
Indianapolis, IN

Vern Noad
PCSO
Bartow, FL