		NTSB ID: MIA96LA227		Aircraft Registration Number: N169BH	
		Occurrence Date: 09/06/1996		Most Critical Injury: None	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place FLAMINGO	State FL	Zip Code 33030	Local Time 0413	Time Zone EDT	
Airport Proximity: Off Airport/Airstrip		Distance From Landing Facility:			
Aircraft Information Summary					
Aircraft Manufacturer Agusta		Model/Series A109A II /A109A II		Type of Aircraft Helicopter	
Revenue Sightseeing Flight: No			Air Medical Transport Flight: Medical Emergency		
Narrative					
<p>Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:</p> <p>On September 6, 1996, about 0413 eastern daylight time, an Agusta A109A II, N169BH, registered to and operated by Biscayne Helicopters, Inc., as a Title 14 CFR Part 91 positioning flight, collided with trees while making a precautionary landing following failure of one engine, at Flamingo, Florida. Visual meteorological conditions prevailed at the time and a visual flight rules flight plan was filed. The helicopter received substantial damage and the airline transport-rated pilot and two flight nurses were not injured. The flight originated from Miami, Florida, the same day, about 0350.</p> <p>The pilot stated this was a positioning flight from Miami to Key West, Florida, to pick up a patient for an air ambulance flight. While in cruise flight at 2,500 feet, about 10 miles southwest of Flamingo, Florida, the No. 2 engine turbine out temperature began to rise. Shortly after this the oil pressure for this engine dropped to 0. He shut down the engine and turned toward the Flamingo visitors area of Everglades National Park, for a precautionary landing. The helicopter would not hold altitude. About 2 minutes after shutting down the No. 2 engine, the main transmission chip master caution light illuminated. He attempted to extinguish the light twice by using the chip fuzz burner. The light continued to illuminate.</p> <p>He arrived over the Flamingo Visitors Center parking lot at 1,000 feet altitude. It was extremely dark with very few ground lights. As he approached the parking area from west to east, he was using the helicopter's spot light to illuminate the area. He observed trees in his path and pulled up to fly over them, using all available power. The low rotor speed warning horn sounded and the aircraft began to vibrate. He touched down at between 50 and 60 knots, in the parking area, in a level attitude. While braking to stop, the helicopter encountered an area of wet grass and began to skid. Before he could stop the forward momentum, the helicopter collided with trees on the east side of the parking lot.</p> <p>Postcrash examination of the No. 2 engine showed the engine oil tank was empty and that there was no evidence of a oil leak from the engine. The tailboom, just aft of the No. 2 engine exhaust had a slight oil film on it. Teardown examination of the No. 2 engine showed the engine rotated normally and all rotating wheels were in place. There was a slight puddling of oil inside the gas producer support and the first and second stage gas producer wheels were oil soaked. The No. 8 bearing turned freely and a large piece of carbon was obstructing the No. 8 bearing oil scavenge pump pick up tube. Oil had bypassed through the unworn No. 8 bearing labyrinth seal into the engine gas producer section. See the Allison On Site Investigation Report.</p> <p>Examination of the transmission showed that the transmission chip detector light was still illuminated after the accident. Operation of the fuzz burner one time extinguished the light. Examination of the chip detector plugs showed they had slight metal contamination. Teardown examination of the transmission showed no evidence of mechanical failure or malfunction of the transmission. A slight amount of metal material was found in the bottom of the transmission and the</p>					
FACTUAL REPORT - AVIATION					

National Transportation Safety Board

**FACTUAL REPORT****AVIATION**

NTSB ID: MIA96LA227

Occurrence Date: 09/06/1996


Occurrence Type: Accident


**Narrative** (Continued)


free wheel unit washers were found to be worn. The manufacturer reported this to be from normal wear. See the attached Augusta report.

Metallurgical examination of the metal fuzz from the main transmission chip detector plugs and the metal material found in the bottom of the main transmission was conducted by the NTSB Materials Laboratory, Washington, D.C. The metal on the chip detectors and in the bottom of the transmission case was consistent with metal from the worn free wheel unit washers. See the attached NTSB Materials Laboratory Report.

The pilot reported he was unable to maintain altitude after shutting down the No. 2 engine and that he could only maintain 95-96% of main rotor rpm. Examination of the No.1 engine showed the bleed line from the engine scroll to the heater valve was found to not have a sealing "O" ring installed. Manufacturer representatives reviewed the last engine power check documentation and found it had been plotted incorrectly. Re-plotting of the power check using the recorded numbers showed the engine was producing 3 % below minimum required power. They attributed this to the bleed air leak and improper engine rigging, which they stated was the cause for failure to maintain 100 % main rotor rpm. See the attached Augusta report.

 <b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b>		NTSB ID: MIA96LA227			
		Occurrence Date: 09/06/1996			
		Occurrence Type: Accident			
<b>Landing Facility/Approach Information</b>					
Airport Name	Airport ID:	Airport Elevation Ft. MSL	Runway Used 0	Runway Length	Runway Width
Runway Surface Type:					
Runway Surface Condition: Wet					
Approach/Arrival Flown:					
VFR Approach/Landing: Precautionary Landing					
<b>Aircraft Information</b>					
Aircraft Manufacturer Agusta		Model/Series A109A II /A109A II		Serial Number 7290	
Airworthiness Certificate(s): Normal					
Landing Gear Type: Retractable - Tricycle					
Amateur Built Acft? No	Number of Seats: 7	Certified Max Gross Wt. 5730 LBS		Number of Engines: 2	
Engine Type: Turbo Shaft	Engine Manufacturer: Allison	Model/Series: 250-C20B		Rated Power: 420 HP	
<b>- Aircraft Inspection Information</b>					
Type of Last Inspection 100 Hour	Date of Last Inspection 08/1996	Time Since Last Inspection 4 Hours		Airframe Total Time 1761 Hours	
<b>- Emergency Locator Transmitter (ELT) Information</b>					
ELT Installed?/Type Yes /		ELT Operated? No	ELT Aided in Locating Accident Site?		
<b>Owner/Operator Information</b>					
Registered Aircraft Owner  BISCAYNE HELICOPTERS, INC.		Street Address 12760 SW 137TH AVE			
		City MIAMI	State FL	Zip Code 33186	
Operator of Aircraft  BISCAYNE HELICOPTERS, INC.		Street Address 12760 SW 137TH AVE			
		City MIAMI	State FL	Zip Code 33186	
Operator Does Business As:			Operator Designator Code: KUVA		
<b>- Type of U.S. Certificate(s) Held:</b>					
Air Carrier Operating Certificate(s): On-demand Air Taxi					
Operating Certificate:			Operator Certificate:		
Regulation Flight Conducted Under: Part 91: General Aviation					
Type of Flight Operation Conducted: Positioning					
<div>FACTUAL REPORT - AVIATION</div> <div>Page 2</div>					


 <b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b>		NTSB ID: MIA96LA227																																																																																														
		Occurrence Date: 09/06/1996																																																																																														
		Occurrence Type: Accident																																																																																														
<b>First Pilot Information</b>																																																																																																
Name		City		State	Date of Birth	Age																																																																																										
On File		On File		On File	On File	35																																																																																										
Sex: M	Seat Occupied: Right	Occupational Pilot? Civilian Pilot		Certificate Number: On File																																																																																												
Certificate(s): Airline Transport; Flight Instructor																																																																																																
Airplane Rating(s): Multi-engine Land; Single-engine Land																																																																																																
Rotorcraft/Glider/LTA: Helicopter																																																																																																
Instrument Rating(s): Airplane; Helicopter																																																																																																
Instructor Rating(s): Airplane Multi-engine; Helicopter																																																																																																
Current Biennial Flight Review?																																																																																																
Medical Cert.: Class 2		Medical Cert. Status: Valid Medical--no waivers/lim.			Date of Last Medical Exam: 12/1995																																																																																											
<table border="1"> <thead> <tr> <th rowspan="2">- Flight Time Matrix</th> <th rowspan="2">All A/C</th> <th rowspan="2">This Make and Model</th> <th rowspan="2">Airplane Single Engine</th> <th rowspan="2">Airplane Multi-Engine</th> <th rowspan="2">Night</th> <th colspan="2">Instrument</th> <th rowspan="2">Rotorcraft</th> <th rowspan="2">Glider</th> <th rowspan="2">Lighter Than Air</th> </tr> <tr> <th>Actual</th> <th>Simulated</th> </tr> </thead> <tbody> <tr> <td>Total Time</td> <td>6800</td> <td>100</td> <td>950</td> <td>3050</td> <td>2600</td> <td>760</td> <td>300</td> <td>2700</td> <td></td> <td></td> </tr> <tr> <td>Pilot In Command(PIC)</td> <td>6250</td> <td>100</td> <td>950</td> <td>2500</td> <td>2050</td> <td>710</td> <td>280</td> <td>2680</td> <td></td> <td></td> </tr> <tr> <td>Instructor</td> <td>150</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>150</td> <td></td> <td></td> </tr> <tr> <td>Instruction Received</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Last 90 Days</td> <td>70</td> <td>8</td> <td></td> <td></td> <td>5</td> <td></td> <td></td> <td>70</td> <td></td> <td></td> </tr> <tr> <td>Last 30 Days</td> <td>24</td> <td>4</td> <td></td> <td></td> <td>4</td> <td></td> <td></td> <td>24</td> <td></td> <td></td> </tr> <tr> <td>Last 24 Hours</td> <td>1</td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1</td> <td></td> <td></td> </tr> </tbody> </table>							- 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	6800	100	950	3050	2600	760	300	2700			Pilot In Command(PIC)	6250	100	950	2500	2050	710	280	2680			Instructor	150							150			Instruction Received											Last 90 Days	70	8			5			70			Last 30 Days	24	4			4			24			Last 24 Hours	1	1						1		
- 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	6800	100	950	3050	2600	760	300	2700																																																																																								
Pilot In Command(PIC)	6250	100	950	2500	2050	710	280	2680																																																																																								
Instructor	150							150																																																																																								
Instruction Received																																																																																																
Last 90 Days	70	8			5			70																																																																																								
Last 30 Days	24	4			4			24																																																																																								
Last 24 Hours	1	1						1																																																																																								
Seatbelt Used? Yes		Shoulder Harness Used? Yes		Toxicology Performed? No		Second Pilot? No																																																																																										
<b>Flight Plan/Itinerary</b>																																																																																																
Type of Flight Plan Filed: VFR																																																																																																
Departure Point		State	Airport Identifier	Departure Time		Time Zone																																																																																										
MIAMI		FL	TMB	0350		EDT																																																																																										
Destination		State	Airport Identifier																																																																																													
KEY WEST		FL	EYW																																																																																													
Type of Clearance: None																																																																																																
Type of Airspace: Class G																																																																																																
<b>Weather Information</b>																																																																																																
Source of Wx Information:																																																																																																
Company																																																																																																

 <b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b>			NTSB ID: MIA96LA227		
			Occurrence Date: 09/06/1996		
			Occurrence Type: Accident		

<b>Weather Information</b>					
WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
HST	0355	EDT	7 Ft. MSL	37 NM	50 Deg. Mag.
Sky/Lowest Cloud Condition: Clear				0 Ft. AGL	Condition of Light: Night/Dark
Lowest Ceiling: None			0 Ft. AGL	Visibility: 7 SM	Altimeter: 29.00 "Hg
Temperature: 24 °C		Dew Point: 23 °C		Weather Conditions at Accident Site: Visual Conditions	
Wind Direction: Variable		Wind Speed: Calm		Wind Gusts:	
Visibility (RVR): 0 Ft.		Visibility (RVV) 0 SM			
Precip and/or Obscuration:					

<b>Accident Information</b>		
Aircraft Damage: Substantial	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				2	2	
Passengers						
- TOTAL ABOARD -				3	3	
Other Ground	0	0	0		0	
- GRAND TOTAL -	0	0	0	3	3	

 National Transportation Safety Board <b>FACTUAL REPORT</b> <b>AVIATION</b>	NTSB ID: MIA96LA227	
	Occurrence Date: 09/06/1996	
	Occurrence Type: Accident	
Administrative Information		
Investigator-In-Charge (IIC) JEFFREY L. KENNEDY		
Additional Persons Participating in This Accident/Incident Investigation:  BILL FRANKLIN MIAMI, FL  JOHN J SWIFT INDIANAPOLIS, IN  PAOLO FERRERI PHILADELPHIA, PA  DARYL R MARTIN MIAMI, FL		
FACTUAL REPORT - AVIATION		