		NTSB ID: MIA02LA133		Aircraft Registration Number: N91281	
		Occurrence Date: 07/16/2002		Most Critical Injury: Serious	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place Lorida		State FL	Zip Code 33857	Local Time 0930	Time Zone EDT
Airport Proximity: Off Airport/Airstrip		Distance From Landing Facility:			
Aircraft Information Summary					
Aircraft Manufacturer Bell		Model/Series UH-1B		Type of Aircraft Helicopter	
Revenue Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
<p>Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:</p> <p>On July 16, 2002, about 0930 eastern daylight time, a Bell UH-1B, N91281, registered to Colony Helicopters, Inc., operating as a Title 14 CFR Part 137 aerial application flight, crashed in the vicinity of Lorida, Florida. Visual meteorological conditions prevailed and no flight plan was filed. The aircraft received substantial damage, and the commercial-rated pilot, the sole occupant, received serious injuries. The flight departed a field near the spray grove about 5 minutes before the accident.</p> <p>The pilot stated he was spraying an orange grove and was heading south. He started to make a turn to the west and his airspeed was 22 mph. He was making a spray turn at the end, slow, and when he started to initiate the turn and pull a little power, he heard a noise, not a real loud boom, just a noise. The helicopter yawed a little bit and lost all lift. It just fell straight down. He didn't have time to look at instruments or anything, it just came straight down like a rock.</p> <p>The ground crew for the spray operation stated they had just refueled the helicopter and put chemical in the tank prior to the pilot departing. A short time later, they heard the pilot call on the radio that he had crashed. They went searching and found the helicopter and pilot at the south end of the grove. As they approached the helicopter, the main rotor was still turning and the engine was still running. The pilot was still in the cockpit. They attempted to shut down the engine with the cockpit controls but they were jammed. They then went to the engine compartment and shut the engine off with the fuel control lever. About 7-12 minutes passed from the time they arrived on the scene to the time the engine was shut down. The pilot reported to them that he was attempting to come out of a turn and the engine lost power and the helicopter went down. One of the ground crewmembers reported that the pilot stated during the previous servicing stop that the engine was running hot and losing power. The ground crewmember reported this to a company mechanic and the mechanic wanted the pilot to call him. Before the pilot could be told to call the mechanic the helicopter had already crashed.</p> <p>A postaccident test run of the engine was attempted at an engine overhaul facility in September 2003. The engine rotated normally and ignition occurred. The engine stopped accelerating after reaching 30 percent speed. Fuel flow was observed to increase during the start attempt to 250 lb/hr and then drop to 125 lb/hr. Three attempts to start the engine were made with the same results. The engine was then removed from the test cell and the fuel control was removed for testing and disassembly inspection.</p> <p>The fuel control was placed on test bench at the engine overhaul facility and a functional test was attempted. The fuel control would produce no more than 90 lb/hr fuel flow regardless of the test position. The fuel control was then removed from the test bench for disassembly examination. Disassembly showed the pump drive clutch assembly was fractured into two pieces. According to the technician performing the disassembly this resulted in disengagement from the N1 flyweight assembly. The N1 flyweight assembly drives the N1 servo system during normal fuel control</p>					
FACTUAL REPORT - AVIATION					
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National Transportation Safety Board

## FACTUAL REPORT

AVIATION

NTSB ID: MIA02LA133

Occurrence Date: 07/16/2002


Occurrence Type: Accident


## Narrative (Continued)

operation. The N1 servo assembly determines the amount of fuel supplied to the engine based on the speed at which it is driven. With the N1 servo system effectively disengaged from the fuel control, the system would remain in the start position and the amount of fuel supplied would not be enough to sustain normal engine operation resulting in the hang starts experienced during the post accident engine test attempts.

The technician further stated the pump drive clutch, the mating surface on the flyweight assembly and the bearing located below the drive clutch exhibit excessive wear. The failure of the pump drive clutch can be attributed to this wear. This type of wear occurs over an extended period of operation and is not usually caused by one incident or a sudden impact.

Maintenance records showed the engine assembly, which included the fuel control, was installed on the helicopter on June 29, 2002, about 40 flight hours before the accident. The helicopter operator had purchased the engine assembly from another company. No records concerning the history of the fuel control were located after the accident.

 <b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b>		NTSB ID: MIA02LA133			
		Occurrence Date: 07/16/2002			
		Occurrence Type: Accident			
<b>Landing Facility/Approach Information</b>					
Airport Name	Airport ID:	Airport Elevation Ft. MSL	Runway Used NA	Runway Length	Runway Width
Runway Surface Type: Unknown					
Runway Surface Condition: Unknown					
Approach/Arrival Flown: NONE					
VFR Approach/Landing: Forced Landing					
<b>Aircraft Information</b>					
Aircraft Manufacturer Bell		Model/Series UH-1B		Serial Number 63-8535	
Airworthiness Certificate(s): Restricted (Special)					
Landing Gear Type: Skid					
Amateur Built Acft? No	Number of Seats: 2	Certified Max Gross Wt. 8500 LBS	Number of Engines: 1		
Engine Type: Turbo Shaft	Engine Manufacturer: Lycoming	Model/Series: T53-L-11D	Rated Power: 1100 HP		
- Aircraft Inspection Information					
Type of Last Inspection 100 Hour	Date of Last Inspection 07/2002	Time Since Last Inspection 6 Hours	Airframe Total Time 3025 Hours		
- Emergency Locator Transmitter (ELT) Information					
ELT Installed?/Type No	ELT Operated? No	ELT Aided in Locating Accident Site? No			
<b>Owner/Operator Information</b>					
Registered Aircraft Owner Colony Services, Inc.		Street Address P. O. Box 1589			
		City LaBelle	State FL	Zip Code 33975	
Operator of Aircraft Colony Services, Inc.		Street Address P. O. Box 1589			
		City LaBelle	State FL	Zip Code 33975	
Operator Does Business As: Colony Helicopters			Operator Designator Code: COOG		
- Type of U.S. Certificate(s) Held:					
Air Carrier Operating Certificate(s):					
Operating Certificate:			Operator Certificate: Agricultural Operator		
Regulation Flight Conducted Under: Part 137: Agricultural					
Type of Flight Operation Conducted: Aerial Application					
FACTUAL REPORT - AVIATION					

 <p><b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b></p>	NTSB ID: MIA02LA133
	Occurrence Date: 07/16/2002
	Occurrence Type: Accident

**First Pilot Information**

Name On File	City On File	State On File	Date of Birth On File	Age 58
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Sex: M	Seat Occupied: Right	Occupational Pilot? Civilian Pilot	Certificate Number: On File
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Certificate(s): Commercial

Airplane Rating(s): Multi-engine Land; Single-engine Land

Rotorcraft/Glider/LTA: Helicopter

Instrument Rating(s): None

Instructor Rating(s): None

Current Biennial Flight Review? 02/2001

Medical Cert.: Class 2	Medical Cert. Status: Valid Medical--w/ waivers/lim.	Date of Last Medical Exam: 04/2002
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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		8000								
Pilot In Command(PIC)										
Instructor										
Instruction Received										
Last 90 Days		42								
Last 30 Days		30								
Last 24 Hours		2								

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

Type of Flight Plan Filed: None

Departure Point Same as Accident/Incident Location	State	Airport Identifier	Departure Time 0925	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 G

**Weather Information**

Source of Wx Information:

No record of briefing

 <p><b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b></p>	NTSB ID: MIA02LA133
	Occurrence Date: 07/16/2002
	Occurrence Type: Accident

<b>Weather Information</b>					
WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
VRB	0953	EDT	25 Ft. MSL	40 NM	60 Deg. Mag.
Sky/Lowest Cloud Condition: Clear			Ft. AGL	Condition of Light: Day	
Lowest Ceiling: None		Ft. AGL	Visibility: 10	SM	Altimeter: 30.12 "Hg
Temperature: 29 °C	Dew Point: 25 °C	Weather Conditions at Accident Site: Visual Conditions			
Wind Direction: 250		Wind Speed: 6	Wind Gusts:		
Visibility (RVR):	Ft.	Visibility (RVV)	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					
Passengers					
- TOTAL ABOARD -		1			1
Other Ground					
- GRAND TOTAL -		1			1

National Transportation Safety Board

**FACTUAL REPORT**

**AVIATION**



NTSB ID: MIA02LA133

Occurrence Date: 07/16/2002

Occurrence Type: Accident

Administrative Information

Investigator-In-Charge (IIC)

Jeffrey L. Kennedy

Additional Persons Participating in This Accident/Incident Investigation:

Mark L Laughridge  
FAA FSDO  
Orlando, FL

Harald Reichel  
Honeywell  
Phoenix, AZ