National Transportation Safety Board
Aviation Accident Final Report

Location:	Fort Lauderdale, FL	**Accident Number:**	MIA05LA149
Date & Time:	08/13/2005, 1557 EDT	**Registration:**	N318JL
Aircraft:	Piper PA-31-350	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	4 Minor, 3 None
Flight Conducted Under:	Part 135: Air Taxi & Commuter - Non-scheduled		

Analysis

The pilot provided an emergency briefing to the passengers before departure. The outboard fuel tanks were empty and the inboard fuel tanks were filled before departure. After takeoff, the flight climbed to 8,500 feet msl and proceeded towards the destination airport. During cruise flight while flying at 1,000 feet msl approximately 10 miles from the destination airport , the left engine started losing power, but the airplane did not yaw; the left cowl flap was closed at the time. The pilot reported the left fuel flow light was on, but the fuel pressure was in the green arc (indicating approximately 38 to 42 psi). He switched each fuel selector to its respective outboard fuel tank though the outboard tanks were empty, turned on both emergency fuel pumps, and also attempted crossfeeding fuel to the left engine in an effort to restore engine power but was unsuccessful. The left engine manifold pressure decreased to 18 inHg, and he was maintaining "blue line" airspeed plus a few knots with the right engine at full power. He slowed the airplane to less than blue line airspeed in an attempt to "gain altitude", and approximately 2 to 3 minutes after first noticing the loss of engine power from the left engine with the manifold pressure indication of 15 inHg, and after seeing boats nearby, he moved the left propeller control to the feather position but later reported the propeller did not feather. The left engine rpm was in the upper green arc through the whole event, and he did not see any oil coming out of the left engine cowling. The flight was unable to maintain altitude, and he advised the passengers to don but not inflate their life vests. He maneuvered the airplane into the wind near boats, and ditched with the flaps and landing gear retracted. All occupants exited the airplane and were rescued by one of the nearby boats. Each inboard fuel tank is equipped with a "surge tank" and a flapper valve, and also a sensing probe installed at the outlet of the tank. The airplane POH/AFM indicates that if the fuel flow light illuminates, and there is fuel in the corresponding tank, a malfunction of the flapper valve has occurred. The airplane was not recovered; therefore no determination could be made as to the reason for the reported loss of engine power from the left engine, nor the reason for the failure of the left propeller to feather.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The reported loss of engine power from the left engine, and the failure of the left propeller to feather for undetermined reasons, resulting in the inability to maintain altitude, and subsequent ditching.

Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: CRUISE - NORMAL

Findings
1. (C) REASON FOR OCCURRENCE UNDETERMINED
2. EMERGENCY PROCEDURE - INITIATED - PILOT IN COMMAND
3. TERRAIN CONDITION - WATER

Occurrence #2: PROPELLER FAILURE/MALFUNCTION
Phase of Operation: DESCENT - EMERGENCY

Findings
4. (C) REASON FOR OCCURRENCE UNDETERMINED

Occurrence #3: FORCED LANDING
Phase of Operation: EMERGENCY DESCENT/LANDING

Occurrence #4: DITCHING
Phase of Operation: EMERGENCY DESCENT/LANDING

Factual Information

On August 13, 2005, about 1557 eastern daylight time, a Piper PA-31-350, N318JL, registered to a private individual, operated by Twin Town Leasing Company, Inc., dba Twin Air Calypso, as flight 217, was ditched in the Atlantic Ocean approximately 6 nautical miles east-southeast from Fort Lauderdale/Hollywood International Airport (KFLL), Fort Lauderdale, Florida. Visual meteorological conditions prevailed at the time and a VFR flight plan was filed for the 14 CFR Part 135 non-scheduled, international, passenger flight from North Eleuthera International Airport, Eleuthera, Bahamas, to Fort Lauderdale/Hollywood International Airport. The airplane was not recovered and presumed to be substantially damaged, and the airline transport-rated pilot and 2 passengers were not injured while 4 passengers sustained minor injuries. The flight originated about 1451, from North Eleuthera Airport.

The accident occurred during the fourth flight of the day; the previous 3 flights were uneventful. The pilot stated that the fuel in the outboard fuel tanks was consumed during the first flight of the day, and they were not fueled at any time during the accident date. After landing following the 3rd flight, he ordered that the inboard fuel tanks be filled. He watched the airplane being fueled from a short distance away, but after fueling he did not visually inspect the fuel tanks. Also, he did not see any fuel stains on the upper surface of the wings, nor did he see any fuel on the ground beneath the wings. Fuel records later provided by the operator revealed that 69.5 gallons of 100 low lead (100LL) fuel were added. The fueler reported he filled both inboard fuel tanks.

The pilot further reported that before engine start of the accident flight, both inboard fuel tanks indicated full. He briefed the passengers before starting either engine, which is his typical procedure. During the briefing, a passenger who was traveling with an infant questioned him about the emergency equipment. He experienced no problem starting either engine, and after takeoff climbed to 8,500 feet mean sea level (msl), where he leaned the fuel-to-air ratio. Due to a slight tailwind, the flight duration was estimated to be 1 hour 1 minute from takeoff to landing. The flight continued, and he started a gradual descent of between 300 to 500 feet-per-minute when the flight was approximately 60 nautical miles (nm) from the destination. While descending he gradually enrichened the fuel-to-air ratio, but kept the power setting the same as it was in cruise. He established contact with the KFLL air traffic control tower (ATCT) when the flight was approximately 15 nautical miles from there, and continued descending.

When the flight was approximately 10 nm from KFLL, while in cruise flight at 1000 feet msl, the pilot reported that the left engine started losing power. The loss of power was evidenced by a change in engine sound, though the airplane did not yaw to the left. At the time of the loss of engine power from the left engine, each left and right inboard fuel tank had approximately 35 gallons of fuel, and the left cowl flap was closed. The left fuel flow light was on, but the left fuel pressure was in the green arc (approximately 38 to 42 psi). The flight became "hectic", and in an effort to restore engine power, he switched each fuel selector to its respective outboard tank, though each outboard fuel tank was empty. He switched each fuel selector back to the inboard fuel tank position, turned on both emergency fuel pumps, and noted that the left manifold pressure was indicating 22 inHg. He also attempted to cross feed fuel to the left engine from the right fuel tank but this did not restore engine power. Based on the manifold pressure indication (22 inHg), he thought there was a problem with the turbocharger. The left engine rpm was in the upper green arc through the whole event, and he did not see any oil coming out

of the left engine cowling.

The flight continued and the left engine manifold pressure decreased to 18 inHg. He was maintaining "blue line" airspeed plus a few knots, and the right engine was at full power in an effort to maintain altitude. He slowed the airplane to less than blue line airspeed in an attempt to "gain altitude." Approximately 2 to 3 minutes after first noticing the loss of engine power from the left engine, with the manifold pressure indication of 15 inHg, and after seeing boats nearby, he moved the left propeller control to the feather position. He did not initially advise any problem associated with feathering the left propeller, but later advised the NTSB that the left propeller continued to windmill. The flight continued and he was unable to maintain altitude. He performed a 120-degree turn around the boats, and turned into the wind for ditching. While flying at 250 feet, he advised the passengers to prepare for ditching and to don their life vests but warned them not to inflate them until they were out of the airplane. The last thing he did before ditching was declare an emergency with KFLL ATCT. He heard the stall warning horn beep twice before ditching the airplane, and contacted the water with the flaps and landing gear retracted.

The pilot further stated that after the ditching, he exited the airplane out of the crew door, but he did not get his life vest. The passenger seated in the right front seat exited the airplane from the crew door, while all remaining passengers exited from the emergency exit on the right side of the airplane. All passengers with the exception of the baby were wearing life vests while in the water. The airplane remained floating for 3-4 minutes, and he estimated the passengers were in the water less than 10 minutes before being rescued by a boat. He noticed a Chalks airplane flying and saw boats on the way. The U.S. Coast Guard arrived on-scene, put personnel on the boat they were on, then made way to a Coast Guard station at Port Everglades. While in the boat, one passenger complained of chest pain.

According to a transcription of communications from the KFLL air traffic control tower (ATCT), at 1552:28, the pilot established contact with the facility and advised that he was southeast of the airport. A discrete transponder code was provided to the pilot. The flight was radar identified and the controller advised the pilot that the flight was 13 miles southeast of the airport at 1,100 feet. The controller also advised the pilot to cross the shoreline at 1,000 feet, and provided the runway, wind, and altimeter setting. At 1554:42, the controller then advised the pilot of a windshear alert associated with the destination runway. The next communication from the pilot occurred at 1556:46, in which the pilot advised, "mayday, mayday, mayday." The controller asked who was calling and the pilot responded with the call sign of the airplane, followed by repeating "mayday" 3 times. At 1556:58, the controller asked the pilot to provide the number of souls and fuel on-board, there was no reply.

One passenger verbally reported to the NTSB that after boarding the airplane, the pilot advised to put on their seatbelts, and he gave a briefing, but she couldn't hear it because an engine(s) was/were running. She also reported she was wearing earphones connected to an IPOD while the pilot was giving his briefing, but the IPOD was not on at the time. The flight departed and approximately 1 hour into the flight, she noticed they were flying close to the water and she heard a clicking noise from the left side, though at the time she was wearing an IPOD. The pilot advised them that they had plenty of fuel but were having a problem with the fuel pump. The clicking noise continued for a few minutes, and the pilot advised them they were not going to make it, and to don their life vests. She found hers right away, and put it on. Upon contact with the water, her seat came loose and she hit the seat in front of her. With water at her waist,

she exited the airplane through the right side door, and while leaving the airplane, she was handed an infant by a passenger. She further reported that she pulled 1 of the chords of the life vest to inflate it, but only 1 chamber inflated.

Another passenger reported that she could not find her life vest and, "someone (maybe the pilot, I'm not sure) passed me one as I was on my way out of the opened door to the right seat in front of me." She recalled one passenger who was seated behind the pilot reporting shortly after hearing sounds from the engine(s), that, "'...we have gas but it's not getting through to the engines' or words to that effect."

The passenger who was seated behind the pilot at the time of the ditching reported that the left engine took a long time to start, but once started, it operated "OK." He reported the pilot briefed them on the location of the life vests, the emergency exit location, but did not brief them how to use the emergency exit. Also, he did not see a seat card, but the pilot mentioned it. He further reported that during the flight, the left and right turbine inlet temperature (TIT) gauge readings were different. He recalled the right indicating 1,146 degrees Celsius, but didn't recall the reading for the left. He also noted during the flight, the fuel flow readings were each 45 (about 2 and 10 o'clock positions). About 1/2 way into the flight he moved into the seat behind the pilot, and while descending, "something odd happened." He heard a noise from beneath the floor, and noticed the pilot changed the fuel selectors. He also noted that the airplane crabbed a little bit at that time, and the GPS indicated the flight was 11 minutes away from the destination. He heard the engines change pitch, and the pilot was moving the throttles and toggled "white" switches. The left and right fuel gauges indicated 1/2 and 3/4 respectively, the left TIT reading was 300, the left fuel pressure was 0, and he was not sure if the propeller was feathered. While flying at 500 feet, the airplane dipped to the left but the pilot recovered. He was preoccupied with getting his son, and did not fasten his seatbelt nor put on his life vest. Just before the ditching, the pilot broadcast "mayday" two times. The airplane contacted the water tail low, and while in the water he opened the right emergency exit. He exited the airplane and while in the water spotted a life vest but was unable to don it. He inflated it and held onto it for support.

The passenger who was seated in the co-pilot's seat confirmed the pilot briefed them on the emergency exits and life jackets. He didn't recall being briefed about a passenger briefing card or about shoulder harnesses. The first indication of a problem was a shudder or vibration, which lasted 3-5 minutes. The pilot reacted immediately to that, and tried to pump fuel or transfer, or make sure both tanks had fuel in them. The pilot checked the mixture controls, and both fuel gauges indicated 1/2 capacity. He heard a thumping sound from behind him which wasn't loud. The airplane descended, and veered to the right and back to the left. Approximately 35 seconds to 1 minute before the ditching the pilot advised them to don their life vests. He donned his and reported no problem doing so. While in the water he inflated his life vests and reported no discrepancy with it. He estimated they were in the water for 20-30 minutes before being rescued by a boat. He further reported he never saw a stopped propeller, and estimated the pilot was troubleshooting for 1 to 1 minute 30 seconds.

NTSB review of a radar plot and data from the Miami International Airport (KMIA) Air Traffic Control Tower (ATCT) that contained radar targets from 1553:01, to 1557:01, revealed that between 1553:01, and 1556:41, the airplane descended from 1,100 to 200 feet, while on a westerly heading. Between 1556:41, and the last radar target at 1557:01, the airplane turned to a southerly heading, and descended to 100 feet. The last radar target was located at 26 degrees

02.383 minutes North latitude and 080 degrees 03.219 minutes West longitude, or 5.7 nautical miles and 116 degrees from the center of KFLL.

The NTSB did not receive the NTSB "Pilot/Operator Aircraft Accident Report" form. The president of the operator reported that on August 19th, or 6 days after the accident, the NTSB form was provided to the pilot. Numerous attempts were made with the airplane operator by the NTSB to obtain the report. According to 49 CFR Part 830.15, the operator is required to file a NTSB "Pilot/Operator Aircraft Accident Report" form within 10 days after an accident.

According to the airplane Pilot's Operating Handbook and FAA Approved Airplane Flight Manual (POH/AFM), the inboard fuel tanks of the airplane (only tanks that contained fuel during the accident flight) each have a surge tank, and associated flapper valve; the inboard fuel tank capacity is 56 gallons. Fuel is normally provided to each engine by a fuel boost pump which is continuously on when the master switch is on and does not have a switch, and by a mechanical fuel pump mounted on each engine. The airplane is equipped with pilot controlled emergency fuel pumps which are activated in the event of a mechanical fuel pump failure, and also for takeoff and landing, and when necessary to prime the engines. Fuel flow warning lights illuminate to warn the pilot of an impending fuel flow interruption. The lights are activated by a sensing probe mounted near each inboard fuel tank outlet. The POH/AFM has a warning in the fuel system description indicating that if either fuel flow warning light illuminates and the fuel gauge indicates fuel remaining in the corresponding inboard tank, "...this will indicate a malfunction of the flapper door in the inboard tank. Immediately select the outboard tank or select crossfeed to avoid fuel flow interruption."

The airplane was not recovered and was not examined.

Pilot Information

Certificate:	Airline Transport; Commercial	**Age:**	56, Male
Airplane Rating(s):	Multi-engine Land; Multi-engine Sea; Single-engine Land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 1 Without Waivers/Limitations	**Last FAA Medical Exam:**	10/01/2004
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:	14500 hours (Total, all aircraft), 6550 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N318JL
Model/Series:	PA-31-350	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	31-8152033
Landing Gear Type:	Retractable - Tricycle	**Seats:**	8
Date/Type of Last Inspection:	Unknown	**Certified Max Gross Wt.:**	7200 lbs
Time Since Last Inspection:		**Engines:**	2 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Lycoming
ELT:	Installed	**Engine Model/Series:**	TIO-540-J2BD
Registered Owner:	Robin V. & Clayton I. Gamber	**Rated Power:**	350 hp
Operator:	TWIN TOWN LEASING CO INC	**Operating Certificate(s) Held:**	On-demand Air Taxi (135)
Operator Does Business As:	Twin Air Calypso	**Operator Designator Code:**	EYLA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	KFLL, 9 ft msl	**Distance from Accident Site:**	6 Nautical Miles
Observation Time:	1607 EDT	**Direction from Accident Site:**	116°
Lowest Cloud Condition:	Few / 3500 ft agl	**Visibility**	10 Miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	80°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.99 inches Hg	**Temperature/Dew Point:**	32°C / 23°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	North Eleuthera (MYEH)	**Type of Flight Plan Filed:**	VFR
Destination:	Fort Lauderdale, FL (KFLL)	**Type of Clearance:**	None
Departure Time:	1451 AST	**Type of Airspace:**	

Airport Information

Airport:	Fort Lauderdale/Hollywood Intl (KFLL)	**Runway Surface Type:**	Unknown
Airport Elevation:		**Runway Surface Condition:**	Unknown
Runway Used:		**IFR Approach:**	Unknown
Runway Length/Width:		**VFR Approach/Landing:**	Forced Landing

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	4 Minor, 2 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	4 Minor, 3 None	**Latitude, Longitude:**	26.043889, -80.056111

Administrative Information

Investigator In Charge (IIC):	Timothy W Monville	**Report Date:**	03/26/2007
Additional Participating Persons:	Thomas W Hanson; FAA Flight Standards District Office; Fort Lauderdale, FL		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov, or at 800-877-6799. Dockets released after this date are available at http://dms.ntsb.gov/pubdms/.		