National Transportation Safety Board
Aviation Accident Final Report

Location:	Bird Cay, Bahamas	**Accident Number:**	MIA07LA073
Date & Time:	04/10/2007, 1703 AST	**Registration:**	N444JH
Aircraft:	Piper PA-46-310P	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General Aviation - Business		

Analysis

The pilot obtained two data user access terminal service (DUATS) preflight weather briefings for the intended flight from the U.S. to Nassau, Bahamas; the briefings included information that thunderstorms were forecasted. The pilot did not request a weather briefing with DUATS or Lockheed Martin flight service station before departure on the return accident flight. Although there was no way to tell whether he received a preflight weather briefing with Nassau Flight Service Station before departure on the accident flight, thunderstorms with associated severe turbulence were forecasted for the accident area well in advance of the aircraft's departure, and would have been available had the pilot requested/obtained a preflight weather briefing. After takeoff, and while in contact with Nassau terminal radar approach control, which had inoperative primary radar, the flight climbed to approximately 8,000 feet mean sea level and proceeded on a northwesterly heading with little deviation. The airplane, which was equipped with color weather radar and a stormscope, penetrated level 6 radar returns with numerous lightning strikes in the area, and began a steep descent. Prior to that there was no request by the pilot to air traffic control for weather avoidance assistance or weather deviation. Radar and radio communications were lost, and the wreckage and occupants were not recovered.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's poor in-flight weather evaluation, which resulted in flight into a level 6 thunderstorm.

Findings

Occurrence #1: IN FLIGHT ENCOUNTER WITH WEATHER
Phase of Operation: CRUISE - NORMAL

Findings
1. RADAR,WEATHER (ATC/GROUND FACILITY) - INOPERATIVE
2. IN FLIGHT WEATHER AVOIDANCE ASSISTANCE - NOT POSSIBLE - ATC PERSONNEL(DEP/APCH)
3. WEATHER CONDITION - THUNDERSTORM
4. (C) WEATHER EVALUATION - POOR - PILOT IN COMMAND

Occurrence #2: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: CRUISE - NORMAL

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings
5. TERRAIN CONDITION - WATER

Factual Information

HISTORY OF FLIGHT

On April 10, 2007, about 1703 Atlantic standard time, a Piper PA-46-310P, N444JH, registered to Happy Skies, Inc., was lost from radar and presumed to have crashed into the Atlantic Ocean, near Bird Cay, Berry Islands, Bahamas. Daylight instrument meteorological conditions prevailed in the area at the time and an instrument flight rules flight plan was filed for the 14 Code of Federal Regulations (CFR) Part 91 business flight from Nassau International Airport (MYNN), Nassau, Bahamas, to Fort Lauderdale/Hollywood International Airport (FLL), Fort Lauderdale, Florida. The airplane has not been located and is presumed to be destroyed. The certificated commercial pilot and pilot-rated passenger were not recovered and are presumed to be fatally injured. The flight originated from MYNN about 1650.

On the day of the accident at 1528, the Nassau terminal radar approach control (TRACON) airport surveillance radar (ASR) primary radar became inoperative. With this type of radar outage, the Nassau radar controller could not receive any information regarding precipitation in the area.

After takeoff, the pilot established contact with Nassau TRACON, and advised the Nassau radar departure controller that the aircraft was climbing through 600 feet mean sea level (msl) flying runway heading. About 6 seconds later, the controller advised the pilot that the airplane was radar identified, instructed him to climb and maintain 12,000 feet msl, and to fly a heading of 050 degrees; the pilot acknowledged the instructions.

At 1653:45, the controller instructed the pilot to climb and maintain 8,000 feet msl, and to turn left heading 320 degrees, which the pilot acknowledged. Recorded radar data indicated that between 1653:51, and 1700:15, the airplane climbed to 8,000 feet msl, and remained at that altitude until 1701:39. The airplane then climbed to 8,100 feet msl, and remained at that altitude for three successive radar returns. At 1701:58, the controller instructed the pilot to turn left and intercept the Bahamas Route (BR) 57V and for him to resume his own navigation, which he also acknowledged. Recorded radar data further indicated that at 1702:02, and 1702:08, the airplane was 8,200 feet msl. Between 1702:08, and 1702:39 (last discrete transponder return), the airplane descended from 8,200 to 6,300 feet msl. The last discrete radar beacon target was located at 25 degrees 21 minutes 46.069 seconds North latitude, and 077 degrees 37 minutes 33.484 seconds West longitude, or about 10 nautical miles east-southeast of Bird Cay, Berry Islands, Bahamas. The radar data further indicated there was little deviation while flying on the northwesterly heading.

The pilot did not request with air traffic control (ATC) weather avoidance assistance nor did he request to deviate due to adverse weather.

At 1705:43, the controller instructed the pilot to climb and maintain 12,000 feet, and to contact the Miami (ZMA) air route traffic control center (ARTCC) on frequency 125.7. The pilot did not acknowledge this transmission nor did he contact ZMA ARTCC. Over the course of 4 minutes, the Nassau TRACON controller attempted to communicate with the pilot several times but there was no response. At 1706:26, the ZMA Nassau low controller asked the Nassau radar data controller, "Could you tell me where november four juliet hotel is? I've lost radar contact with him." About 10 seconds later, the Nassau radar data controller stated, "I have no idea where that aircraft is." At 1727, ZMA ARTCC advised Nassau TRACON that about 1705, the U.S.

military tracked and observed an aircraft in a rapid descent from 8,000 feet to sea level.

The U.S. Coast Guard (Coast Guard), Bahamas Air Sea Rescue Association (BASRA), and Royal Bahamas Defense Force (RBDF) were notified of the possible downed aircraft. The Coast Guard launched multiple air assets from several locations in Florida, sea assets, and also an air asset from Andros Island, Bahamas. The first Coast Guard air asset arrived in the area at 1803, and an oil sheen was noted at 1913. The bodies were first spotted at 1940; however, their condition precluded recovery. A subsequent search for the occupants and wreckage yielded negative results.

PERSONNEL INFORMATION

The pilot, age 75, held a commercial pilot certificate with airplane single engine land, and instrument airplane ratings, issued May 21, 2004, and a second-class medical certificate issued June 1, 2006, with a limitation to wear corrective lenses for near and distant vision. He indicated having 9,819 hours total time on the application for his last medical certificate. The pilot's last flight review in accordance with (IAW) 14 CFR Part 61.56, and instrument proficiency check IAW 14 CFR Part 61.57 occurred on September 22, 2006. Personnel of the facility that provided the instruction reported the September instruction was the last they had given the pilot, and the combined ground and flight instruction would have occurred in a 6 to 8 hour period during the course of 1 day. The pilot would have been provided stickers to place in his pilot logbook, which documented the flights; they did not keep a copy of the stickers for their records. The pilot logbook was not located; therefore, no determination could be made whether he met the instrument experience requirements specified in 14 CFR Part 61.57.

The passenger, age 55, held a private pilot certificate with airplane single engine land rating issued on May 25, 2001, and a third-class medical certificate issued October 11, 2005, with a limitation to wear corrective lenses. He indicated having 2,530 hours on the application for his last medical certificate.

AIRCRAFT INFORMATION

The airplane was manufactured in 1985, by Piper Aircraft, Inc., as model PA-46-310P, and was designated serial number 46-8608014. It was powered by a 310-horsepower Teledyne Continental Motors (TCM) TSIO-520-BE engine and equipped with a constant speed propeller. The airplane was also equipped with color weather radar installed at the time of manufacture. In addition, the pilot's son reported the airplane was equipped with a stormscope, and XM weather downlink, though records on file with the Federal Aviation Administration (FAA) located in Oklahoma City, Oklahoma, did not depict installation of the stormscope or equipment associated with XM weather.

Federal Aviation Administration (FAA) records indicated the pilot owned the airplane since 1995.

National Transportation Safety Board review of the copies of the maintenance records provided by the insurance adjuster revealed the airplane was last inspected in accordance with a 100-hour inspection on April 9, 2007. The airplane total time and the engine time since major overhaul at that time were 6,912.5 hours and 2,006.9 hours, respectively.

METEOROLOGICAL INFORMATION

The pilot obtained two standard route weather briefings using Data Transformation Corporation (DTC) direct user access terminal service (DUATS), for a route from Page Field

Airport (FMY), Fort Myers, Florida, to MYNN. The first briefing occurred on April 9, 2007, at 2054, and the second briefing occurred on the day of the accident at 0730. Both briefings utilized the Miami Area Forecast (which was not valid for the accident site area), and both contained a caution that information should be secured at the first available opportunity from the country in whose airspace the flight will be conducted. During the last briefing, the synopsis for southern Florida indicated that after 1100, isolated light rain showers, isolated thunderstorm with light rain, and cumulonimbus cloud tops to flight level (FL) 370. The synopsis for the southern Florida area of the Atlantic coastal waters indicated tops layered to FL240. The pilot did not request, nor was he provided the offshore area forecast (FACA20), which indicated isolated moderate thunderstorms and rain. In addition, during the last briefing, the pilot was provided the synopsis which indicated that for the "Atlantic Coastal Waters" broken 5/9 - 7/8 coverage, overcast at 3,000 feet, tops layered to FL240 over southern Florida. He was also provided numerous U.S. charts including the 12 and 24-hour surface prognosis charts, high level significant weather prognosis charts, severe weather 24-hour outlook chart, and visible satellite and Florida (north and south) radar mosaics.

Personnel of DTC DUATS reported to the Safety Board that a pilot has to be knowledgeable about the information and has to make a specific location request to get the FACA20 data as part of a weather briefing.

On the day of the accident at 1200 hours local, the Bahamas Meteorology Department issued the MYNN terminal area forecast (TAF), which was valid from 1400 hours local that day (approximately 2 hours 50 minutes before the accident flight departed), until 1400 hours the following day. The forecast estimated temporary conditions consisting of rain showers, broken clouds at 1,500 feet, and towering cumulous. Also at 1400 hours local, the Bahamas Area Forecast indicated for northwest Bahamas scattered rain showers, and thunderstorms with rain showers mainly over extreme northwest Bahamas. The remarks section of a surface observation weather report (METAR) taken at MYNN, at 1600, or approximately 50 minutes before the accident flight departed, indicated towering cumulus clouds northwest through north. The Bahamas Department of Civil Aviation reported that a controller is required to ask a pilot if he/she has the latest automated terminal information service (ATIS) report when contacting ATC for clearance.

Except for the DUAT briefing at 0730, the pilot did not obtain a weather briefing before departure with DTC DUATS or Lockheed Martin flight service station. Personnel from Bahamas Department of Civil Aviation reported there is no way to confirm whether or not a preflight weather briefing with Nassau Flight Service Station was obtained or even requested by the pilot before departure.

The Miami weather surveillance radar was the closest U.S. Doppler weather radar to the accident site, and was located 276 degrees and 152 nautical miles from the last discrete transponder return of the accident aircraft. The radar track of the accident flight overlaid onto weather radar images revealed that at 1701:22, the maximum recorded reflectivity noted slightly east of the flight track was noted to be 58.5 dBZ, or video integrated processor (VIP) level 6 radar returns. The VIP level 6 radar reflectivity is defined as extreme, with possible rainfall of 12 inches per hour.

Cloud to ground lightning strike data within 10 miles of the last discrete radar return indicated the first lightning strike in the area occurred at 1554:50, or approximately 55 minutes before the accident flight departed. In addition, 78 strikes occurred within the 10-mile search area

between the time of takeoff (1650), and 1704.

COMMUNICATIONS

At the time of the accident, the pilot was in two-way communications with Nassau TRACON. There were no reported communication difficulties.

AIRPORT INFORMATION

The MYNN Airport is located on island of New Providence, in the Bahamas, and has two runways designated 9/27, and 14/32. The airport field elevation is 16 feet MSL.

Located at MYNN, the Nassau TRACON provides approach and departure services to 11 airports in the Bahamas. The radar data for this area is provided by the Nassau QJS ASR-8 radar system located on the MYNN airport, and as previously reported, the primary radar went out of service on the day of the accident at 1528, or approximately 1 hour 22 minutes before the accident flight departed. At the time of the accident, the Nassau radar controller was providing ATC services using secondary radar only to the pilot of N444JH.

WRECKAGE AND IMPACT INFORMATION

No wreckage was recovered.

MEDICAL AND PATHOLOGICAL INFORMATION

The pilot and passenger were not recovered.

ADDITIONAL DATA/INFORMATION

The accident occurred in the territorial waters of the Bahamas. The Bahamian Civil Aviation Authorities delegated the investigation of this accident to the United States Safety Board, in accordance ICAO Annex 13, but assigned an accredited representative. The Safety Board accepted delegation of the accident investigation.

Pilot Information

Certificate:	Commercial	**Age:**	75, Male
Airplane Rating(s):	Single-engine Land	**Seat Occupied:**	Unknown
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 With Waivers/Limitations	**Last FAA Medical Exam:**	06/01/2006
Occupational Pilot:		**Last Flight Review or Equivalent:**	09/01/2006
Flight Time:	9818 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N444JH
Model/Series:	PA-46-310P	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	46-8608014
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	04/01/2007, 100 Hour	**Certified Max Gross Wt.:**	4100 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	6912.5 Hours as of last inspection	**Engine Manufacturer:**	Continental
ELT:	Installed	**Engine Model/Series:**	TSIO-520-BE
Registered Owner:	Happy Skies, Inc.	**Rated Power:**	310 hp
Operator:	Ernest M. Kollmann	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	MYNN, 16 ft msl	**Distance from Accident Site:**	
Observation Time:	1700 AST	**Direction from Accident Site:**	
Lowest Cloud Condition:		**Visibility**	9.21 Miles
Lowest Ceiling:	Broken / 1800 ft agl	**Visibility (RVR):**	
Wind Speed/Gusts:	15 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	160°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.89 inches Hg	**Temperature/Dew Point:**	29°C / 24°C
Precipitation and Obscuration:	Heavy - Rain		
Departure Point:	Nassau (MYNN)	**Type of Flight Plan Filed:**	IFR
Destination:	Fort Lauderdale, FL (KFLL)	**Type of Clearance:**	IFR
Departure Time:	1650 AST	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	
Ground Injuries:	N/A	**Aircraft Explosion:**	
Total Injuries:	2 Fatal	**Latitude, Longitude:**	25.362778, -77.625833

Administrative Information

Investigator In Charge (IIC):	Timothy W Monville	**Report Date:**	08/28/2008
Additional Participating Persons:	Jack Corbitt; FAA/IFO; Miami, FL Michael McClure; Piper Aircraft, Inc.; Vero Beach, FL John Kent; Teledyne Continental Motors; Mobile, AL		
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/.		