National Transportation Safety Board
Aviation Accident Final Report

Location:	BENTON HARBOR, MI	**Accident Number:**	CHI96LA266
Date & Time:	08/03/1996, 0740 EDT	**Registration:**	N8919G
Aircraft:	CESSNA 404	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 Serious
Flight Conducted Under:	Part 135: Air Taxi & Commuter - Non-scheduled		

Analysis

The pilot said that during the landing approach, the flight visibility was inadequate for landing, and he aborted the landing. Witnesses observed the airplane touch down long and fast, then it entered fog that shrouded the runway. Subsequently, the airplane collided with trees, then impacted on marshland about 70 feet below the runway elevation. No mechanical anomalies were found with the airplane or engines that would prevent flight. On the day before the accident, the pilot's duty day began at 0500. He had a 9-hour rest period (during the day) that did not involve any sleep. The pilot said that after work on the day before the accident, he arrived home about 2300. His wife said he awoke about 0230 on the accident date, then he returned to bed and arose between 0430 and 0500, departing for work about 0530. During his regular duty day rest period, the pilot would drive a total of 4 hours to and from his home each day. The pilot said he would generally get to bed about 2300 to 2330, arising about 0430 each work day. Also, he said he needed between 6 and 8 hours of sleep at night.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's delay in initiating a go-around after not attaining the proper touchdown point during the landing, and his failure to remain clear of obstructions (trees) during the go-around. Factors relating to the accident were the adverse weather condition (fog and low ceiling), pilot fatigue, and the proximity of trees to the runway.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: GO-AROUND (VFR)

Findings
1. (F) WEATHER CONDITION - LOW CEILING
2. (F) WEATHER CONDITION - FOG
3. (C) PROPER TOUCHDOWN POINT - NOT ATTAINED - PILOT IN COMMAND
4. (C) GO-AROUND - DELAYED - PILOT IN COMMAND
5. (F) OBJECT - TREE(S)
6. (C) ALTITUDE/CLEARANCE - NOT ATTAINED - PILOT IN COMMAND
7. (F) FATIGUE - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings
8. TERRAIN CONDITION - SWAMPY

Factual Information

On August 3, 1996, at 0740 eastern daylight time, (edt), a Cessna 404, N8919G, piloted by an airline transport pilot, was destroyed during a collision with trees and marshland during an aborted landing and go-around on runway 36 (dry asphalt, 2,498' X 100') at the Benton Harbor Southwest Michigan Regional Airport, Benton Harbor, Michigan. Instrument meteorological conditions prevailed at the time of the accident. The all cargo 14 CFR Part 135 flight had been operating on an IFR flight plan. The pilot received serious injuries. The flight departed Kalamazoo, Michigan, at 0725 edt.

As N8919G approached Benton Harbor's airport, the pilot contacted the Federal Aviation Administration's (FAA) Air Traffic Control (ATC) approach control. He said he wanted ATC to, "...put [him] over the top of the airport [so he could] take a look at it... ." The ATC controller agreed to his request and cleared N8919G to 2,500 feet above mean sea level. About 3 minutes after this clearance the controller asked the pilot what his forward visibility was. The pilot responded, "Well, forward visibility is about... 8 miles, it's just ground fog around."

As N8919G neared the airport, the controller told the pilot, "...the airport's 12 o'clock and 3 miles." The pilot responded that the airport was not in sight. About a minute later the pilot said he had the airport in sight and, "...[it] looks like we can use runway 36." The controller cleared the flight for a "...visual approach at Benton Harbor." The pilot cancelled his IFR flight plan a few moments later.

According to the pilot's written statement, "...after visually seeing runway 36, [I] cancelled IFR and proceeded VFR to runway 36. During [the] landing approach determined flight visibility would be inadequate to land and initiated go-around. At that time felt left-hand turning tendency. (End of memory)."

During an interview the pilot said he saw the northern half of runway 36 covered by fog. He said he thought he could touch down on the first half of runway 36, but did not and executed a missed approach by adding full power. After adding full power, the pilot said the airplane yawed to the left. He said he could not remember any events following the left yaw.

One witness reported seeing N8919G touch down on runway 36 "...way too late... ." This witness said the airplane "...looked like he started to pull up and at that time he entered the fog." Another witness said he observed N8919G about "...75 feet high [with] gear and flaps down..." near the approach end of runway 36. A third witness said, "I observed the airplane land from the south onto the runway, traveling at a fast speed... ." After the airplane touched down this witness said the airplane "...went out of sight... ."

A commuter airline first officer observed N8919G on runway 36 in a nose high attitude. He said, "The aircraft was airborne off of runway 36, north of runway 27. The aircraft was in a slightly nose high attitude approximately 5 feet above the surface." He said the airplane disappeared into the ground fog.

An FAA Principal Operation Inspector (POI) represented the NTSB on-scene. The POI reported skid marks on runway 36 beginning about 100 feet south of the runway 09-27 and 36-18 intersection. These skid marks were the same distance apart as the distance between N8919G's main landing gear tires. The skid marks were solid for first 100 feet, becoming intermittent as they neared the runway's departure end. The POI reported trees at the departure end of runway 36 had been damaged and cut. The runway skid marks lined up with

the damaged trees. Foliage from these trees was laying on the ground, their cut cross-section was still moist. N8919G collided with marshland located about 70 feet below the runway's elevation about 350 feet from the runway's departure end.

An FAA Principal Maintenance Inspector (PMI) said flight control continuity on N8919G was established. The PMI reported the runup of the engines revealed no mechanical anomalies that would prevent the production of power. The POI and PMI report's are appended to this report.

N8919G's operator said the accident pilot had been hired as a Benton Harbor-based pilot. The pilot's flight schedule was to depart from Lansing, Michigan, about 0700 edt and arrive at Benton Harbor about 0800 to 0830 edt. It was at this time the pilot would have an interuption in his duty day. The POI said the pilot's required 10 hours of rest was to take place after his arrival at Benton Harbor. At the end of the 10-hour period, the pilot would resume his duty day about 1900 edt. His flight would normally depart Benton Harbor shortly after 1900 edt.

According to the chief pilot and the pilot's wife, the pilot's routine was to drive home from Benton Harbor at the beginning of his scheduled 10-hour rest period. The drive was about 90 miles, requiring between 2 and 2-1/2 hours to complete. The pilot's wife said he usually left home to return to Benton Harbor between 1700 and 1730 edt. The pilot was asked why he went home each day after landing at Benton Harbor. He said he did this because it was the only time he could be with his children. He said the commute to his home was quite stressful due to the traffic. The pilot said he did not sleep during this time. A review of the pilot's schedule for the previous 5 duty days showed his schedule coincided with what the chief pilot had stated.

The pilot's wife stated he began his duty day on August 2, 1996, at 0500 edt. She said his departure from Lansing was fog delayed until about 1215 edt. She said he had flown about 1-1/2 to 2 hours during that duty day and did not return home until 2250 edt. After arriving home that evening, the pilot's wife said he expressed concern about his duty day. She said he had awakened about 0230 edt on day of the accident because he had thought it was time to prepare for work. She said the pilot returned to bed and arose between 0430 and 0500 edt and departed for work about 0530 edt. The drive between the pilot's home and Lansing airport takes about 30 minutes, according to the pilot's wife.

An investigation of the pilot's sleep/rest habit patterns was conducted. It was revealed that the pilot's normal workday wakeup time was about 0430 edt. He said he usually retired for the evening between 2300 and 2330 edt. During an interview the pilot said he needs between 6 and 8 hours of sleep. On weekends, when he isn't flying, he sleeps between 6 and 8 hours. When he's on vacation, he said he rarely sleeps more than 8 hours a night.

Pilot Information

Certificate:	Airline Transport; Commercial	**Age:**	35, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane	**Toxicology Performed:**	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	01/29/1996
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:	3250 hours (Total, all aircraft), 53 hours (Total, this make and model), 3100 hours (Pilot In Command, all aircraft), 135 hours (Last 90 days, all aircraft), 41 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	CESSNA	**Registration:**	N8919G
Model/Series:	404 404	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	4040098
Landing Gear Type:	Retractable - Tricycle	**Seats:**	10
Date/Type of Last Inspection:	08/01/1996, AAIP	**Certified Max Gross Wt.:**	8400 lbs
Time Since Last Inspection:	2 Hours	**Engines:**	2 Reciprocating
Airframe Total Time:	10624 Hours	**Engine Manufacturer:**	CONTINENTAL
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	GTSIO-520-M
Registered Owner:	SUPERIOR AVIATION, INC.	**Rated Power:**	435 hp
Operator:	SUPERIOR AVIATION, INC.	**Operating Certificate(s) Held:**	On-demand Air Taxi (135)
Operator Does Business As:		**Operator Designator Code:**	EATA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	BEH, 643 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	0753 EDT	**Direction from Accident Site:**	360°
Lowest Cloud Condition:	Unknown / 0 ft agl	**Visibility**	2.5 Miles
Lowest Ceiling:	Broken / 100 ft agl	**Visibility (RVR):**	0 ft
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	16°C / 16°C
Precipitation and Obscuration:			
Departure Point:	KALAMAZOO, MI (AZO)	**Type of Flight Plan Filed:**	IFR
Destination:		**Type of Clearance:**	VFR
Departure Time:	0725 EDT	**Type of Airspace:**	Class G

Airport Information

Airport:	BENTON HARBOR/ROSS FIELD (BEH)	**Runway Surface Type:**	Asphalt
Airport Elevation:	643 ft	**Runway Surface Condition:**	Dry
Runway Used:	36	**IFR Approach:**	Visual
Runway Length/Width:	2498 ft / 100 ft	**VFR Approach/Landing:**	Full Stop

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Destroyed
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious	**Latitude, Longitude:**	

Administrative Information

Investigator In Charge (IIC):	FRANK S GATTOLN	**Report Date:**	08/29/1997
Additional Participating Persons:	WILLIAM RENKEN; SOUTH BEND, IN STEPHEN WILSON; WICHITA, KS GEORGE M HOLLINGSWORH; 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/.		