



National Transportation Safety Board Aviation Accident Final Report

Location:	BAINBRIDGE, GA	Accident Number:	MIA98LA115
Date & Time:	04/02/1998, 0800 EST	Registration:	N6847Z
Aircraft:	Piper PA-25-235	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	1 Fatal

Flight Conducted Under: Part 91: General Aviation - Instructional

Analysis

According to the certified flight instructor (CFI), witness, the pilot was being trained in agricultural operations, and was in radio communications with the CFI who was supervising the operation. The witnesses said the airplane made a turn at the end of a field, appeared to stall, impacted the ground and burned. The airplane was last seen about 150 to 200 feet above the ground in a turn. The flight had departed with full fuel and 100 gallons of water. The CFI was to observe from the ground, the pilot fly a Piper Pawnee aircraft into a local farmers field, while he practiced simulated spray runs, aerial applicator maneuvers, back and forth across the field. According to the CFI, he had a two-way hand-held radio, and '...we each acknowledged a good radio check.' The CFI said he then told the pilot he should takeoff and fly to the field, and the CFI drove his truck to the field to observe his progress. As the CFI approached the edge of the field he said, the pilot was making his first pass into the field from east to west on the south side of the field, '...he looked steady and at a safe height of about 15-20 feet. He exited to the west end of the field correctly and turned 45 degrees to the left at an altitude of about 150-200 feet above the trees and extended in a southwesterly direction for about 4-5 seconds before initiating a right hand reversal back into the field. While his aircraft was in a right, medium-banked [sic] (30 degrees) level turn, I diverted my attention momentarily from the aircraft to park my truck. After only about 5 seconds, I looked back into the direction where I had last seen the plane, and observed a plume black smoke coming from behind the trees, rising up about 100 feet from ground level.' According to the FAA Inspector's statement, the on site investigation revealed that the hopper was intact and empty of water. The dump handle was found in the dump position. The leakage of water on the ground near the crash site. The elevator trim was found in the nose down position. The elevator, rudder, and aileron continuity was established. The seat belt was found in locked position [attached], on the ground, inside the cockpit, and the body of the pilot showed no evidence of the seat belt or harness being attached. The cockpit frame work, inertial reel gear shift, and shoulder harness attachment cable, were sent to the NTSB Materials Laboratory, Washington, DC, for examination. The examination revealed that the inertial reel retraction cable failed due to wearing of the cable, over an undetermined period of time, after which the remaining wires of the cables failed in tensile overstress. There was no evidence found to show that the cable was tied to the frame tube before or at the of the accident. Nor could it be confirmed that the marks

on the frame tube were caused by the shoulder harness attachment cable. Three nearly equally spaced marks on the tube was suggestive of a series of ties, and not an individual tie for holding the separated cable to the framework. The pilot had first soloed the Pawnee, on April 1, 1998, and had logged 3.2 hours in preparation for the subject flight. There were no records found showing that the pilot had received any additional training in this make/model or category of airplane. In addition, the owner/operator of the airplane, and the provider of the training for this type of operation were the same. The training was conducted under the name of AG-FLIGHT Inc. There is nothing in their circular that says a person applying for training needs any special certificate, a minimum of flight time or special experience. The training program was not certified by the FAA, and it is not required to be certified. The pilot had a total of 165 hours of flight time, and a total of 3.3 hours in this make and model airplane at the time of the accident.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain adequate airspeed, which resulted in a stall. Contributing factors were the pilot's lack experience in this category of aircraft. An additional factor was the inadequate upgrade training provided by the company that owned the airplane and was providing training.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: MANEUVERING - TURN TO REVERSE DIRECTION

Findings

1. (C) AIRSPEED - NOT MAINTAINED - PILOT IN COMMAND
 2. (C) STALL/SPIN - INADVERTENT - PILOT IN COMMAND
 3. (F) LACK OF TOTAL EXPERIENCE IN KIND OF AIRCRAFT - PILOT IN COMMAND
 4. (F) INADEQUATE TRANSITION/UPGRADE TRAINING - COMPANY/OPERATOR MANAGEMENT
 5. (F) INADEQUATE TRANSITION/UPGRADE TRAINING - FLIGHT INSTRUCTOR(ON GROUND)
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Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings

6. TERRAIN CONDITION - GROUND

Factual Information

On April 2, 1998, about 0800 eastern standard time, a Piper PA-25-235 (Agricultural), N6847Z, registered to a private owner, crashed while maneuvering near Bainbridge, Georgia. Visual meteorological conditions prevailed at the time and no flight plan was filed for the Title 14 CFR Part 91, local training flight. The private-rated pilot was fatally injured. The airplane was destroyed. The flight had departed at 0745.

The certified flight instructor (CFI), that witnessed the accident said, "...on April 2, 1998, I was to observe from the ground, [the pilot] fly a Piper Pawnee aircraft into a local farmers field, while he practiced simulated spray runs (aerial applicator maneuvers) back and forth across the field...[the pilot] first soloed the Pawnee on April 1, 1998, and logged 3.2 hours in preparation for the subject flight." The pilot arrived at the airplane about 0715, and the CFI said, "...I went outside and preflighted his airplane...I added one quart of oil to bring the total to 12 quarts...[the pilot] conducted a complete preflight of the aircraft himself...afterwards, I rebriefed him on how we would conduct the flight. I particularly emphasized that...he was not to fly low (4-6') over the field until he was comfortable to do so...that he was to extend his outbound leg and make shallow turns back into the field, and...if [he] sensed any sign of trouble, no matter what, to dump his load."

According to the CFI, the pilot taxied the airplane over to the refueling/loading area, where the CFI said, "...I refueled the aircraft to the full position, loaded the hopper with 100 gallons of water, and cleaned his windshield. I had a two-way hand-held radio, and we each acknowledged a good radio check."

The CFI said he then told the pilot, "...he should takeoff and fly to the 'junkyard' field, a predetermined field approximately one to two miles west of the airport (a field that [the pilot] had flown in previously and was very familiar with), clear the field, and begin the proper maneuvers back and forth across the field. In the meanwhile, I would be driving my truck to the field to observe his progress."

As the CFI approached the edge of the field he said, "...[the pilot] was making his first pass into the field from east to west on the south side of the field: he looked steady and at a safe height of about 15-20 feet. He exited to the west end of the field correctly and turned 45 degrees to the left at an altitude of about 150-200 feet above the trees and extended in a southwesterly direction for about 4-5 seconds before initiating a right hand reversal back into the field. While his aircraft was in a right, medium-banked [sic] (30 degrees) level turn, I diverted my attention momentarily from the aircraft to park my truck. After only about 5 seconds, I looked back into the direction where I had last seen the plane, and observed a plume black smoke coming from behind the trees, rising up about 100 feet from ground level. The CFI drove to the crash site and when he arrived he saw the pilot "laying about 5 feet from the plane on his back...his helmet was laying inches from his head..."

According to the FAA Inspector's statement, during the on site investigation he had determined that "...the aircraft contacted the ground, left wing first, sheering the wing...the propeller and rupturing the fuel tank." In addition, he said he found, "...[the] hopper intact with no water on board. Dump handle in forward (dump) position. [The] ground from initial contact to fire damage area did not show that hopper contents had been dumped in this area...aircraft trim [found] in nose down position (Opposite of what Instructor says [he] taught)...elevator/rudder...aileron cable[s]...continuity [established]...seat belt was [found] in

locked position [attached] on [the] ground inside cockpit...[and] the body of pilot showed no evidence of seat belt or harness [ever] being attached."

According to the CFI, the pilot "first soloed the Pawnee on April 1, 1998, and logged 3.2 hours in preparation for the subject flight." There were no records found showing that the pilot had received any additional training in this make/model or category of airplane. In addition, the owner/operator of the airplane, and the provider of the training for this type of operation were the same. The training was conducted under the name of AG-FLIGHT Inc. There is nothing in their circular that says a person applying for training needs any special certificate, a minimum of flight time or special experience. The training program was not certified by the FAA, and it is not required to be certified. The pilot had a total of 165 hours of flight time, and a total of 3.3 hours in this make and model airplane at the time of the accident.

An autopsy was performed on the pilot, on April 4, 1998, at the Medical Examiner's Office, Bainbridge, Georgia, by Dr. A.J. Clark. According to the autopsy report, the cause of death was, "...smoke and heat inhalation."

Toxicological tests were conducted at the Federal Aviation Administration, Research Laboratory, Oklahoma City, Oklahoma, and revealed, "...no ethanol or drugs...19 percent Carbon Monoxide was detected in Blood."

The cockpit frame work, inertial reel gear shift, and shoulder harness attachment cable, were sent to the NTSB Materials Laboratory, Washington, D.C., for examination. The examination revealed that the inertial reel retraction cable failed due to wearing of the cable, over an undetermined period of time, after which the remaining wires of the cables failed in tensile overstress. The wear was a result of the cable's tendency to straighten from the relatively tight curvature when wrapped around the inertial reel.

A permanent curve was found in the shoulder harness attachment cable that approximately matched the diameter of the tube of the cockpit frame. There was no evidence found to show that the cable was tied to the frame tube before or at the time of the accident. Nor could it be confirmed that the marks on the frame tube were caused by the shoulder harness attachment cable. Three nearly equally spaced marks on the tube was suggestive of a series of ties, and not an individual tie for holding the separated cable to the framework [See NTSB Materials Laboratory Factual report].

Pilot Information

Certificate:	Private	Age:	19, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Center
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 3 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	10/16/1997
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	165 hours (Total, all aircraft), 3 hours (Total, this make and model), 111 hours (Pilot In Command, all aircraft), 81 hours (Last 90 days, all aircraft), 18 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N6847Z
Model/Series:	PA-25-235 PA-25-235	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Restricted	Serial Number:	25-2520
Landing Gear Type:	Tailwheel	Seats:	1
Date/Type of Last Inspection:	03/11/1998, 100 Hour	Certified Max Gross Wt.:	2900 lbs
Time Since Last Inspection:	44 Hours	Engines:	1 Reciprocating
Airframe Total Time:	11056 Hours	Engine Manufacturer:	Lycoming
ELT:	Not installed	Engine Model/Series:	O-540-B2C5
Registered Owner:	WILLIAM F. HOWELL	Rated Power:	235 hp
Operator:	WILLIAM F. HOWELL	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	TLH, 55 ft msl	Distance from Accident Site:	15 Nautical Miles
Observation Time:	0752 EST	Direction from Accident Site:	180°
Lowest Cloud Condition:	Clear / 0 ft agl	Visibility	5 Miles
Lowest Ceiling:	Overcast / 2500 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	3 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	70°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	25° C / 21° C
Precipitation and Obscuration:			
Departure Point:		Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	0745 EST	Type of Airspace:	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	N/A	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	ALAN J YURMAN	Report Date:	02/15/2001
Additional Participating Persons:	ROYCE W LEVAUGHN; ATLANTA, GA		
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 pubinquiry@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).