

		NTSB ID: SEA05FA125		Aircraft Registration Number: N4368R	
		Occurrence Date: 06/23/2005		Most Critical Injury: Fatal	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place Yamhill	State OR	Zip Code 97148	Local Time 2030	Time Zone PDT	
Airport Proximity: On Airport/Airstrip		Distance From Landing Facility:			
Aircraft Information Summary					
Aircraft Manufacturer Cessna		Model/Series 172M		Type of Aircraft Airplane	
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>*** Note: NTSB investigators either traveled in support of this investigation or conducted a significant amount of investigative work without any travel, and used data obtained from various sources to prepare this aircraft accident report. ***</p> <p>HISTORY OF FLIGHT</p> <p>On June 23, 2005, about 2030 Pacific daylight time, a Cessna 172M, N4368R, sustained substantial damage when it impacted the ground in an uncontrolled descent following a loss of control during a go-around from the Flying M Airport near Yamhill, Oregon. The flight instructor and the student pilot received fatal injuries, and the passenger received serious injuries. The airplane was registered to and operated by Hillsboro Flying Club of Portland, Oregon. Visual meteorological conditions prevailed and no flight plan was filed for the instructional flight that was conducted under 14 CFR Part 91. The flight departed from the Portland-Hillsboro Airport about 1945.</p> <p>In an interview conducted by the NTSB investigator-in-charge (IIC), the passenger stated that she wanted to go flying with her boyfriend, the student pilot, to see how he was doing. She knew she could only fly with him when he was flying with his flight instructor. The arrangements for the flight were made about a week before it took place. The day of the flight was a beautiful day, so she knew they would be going. When asked what they had planned for the flight, the passenger said "all we were supposed to do is go on a flight so I could see how [the student pilot] was doing." The plan was to land at Twin Oaks Airport, Hillsboro, Oregon. While at Twin Oaks, the flight instructor would sign off the student pilot to make solo flights there in the future. The plan "did not happen."</p> <p>The student pilot was seated in the left front seat, the flight instructor was seated in the right front seat, and she was seated in the left rear seat. She was wearing a headset and could talk and listen to both pilots. She had a lap belt only. She thinks both pilots had shoulder harnesses and lap belts. Once they got airborne, the flight instructor started having the student pilot practice stalls. After three stalls, the passenger asked them to stop as it was making her nervous. Then they flew to an airport that had a grass airstrip and a paved airstrip. She did not recognize the airport. She had been to Twin Oaks before, and this airport did not look like Twin Oaks. They landed a few times on the grass airstrip. The flight instructor told the student pilot that he wanted him to practice landing at a grass airstrip because this would help him to land if he ever had an engine problem. The flight instructor made the first landing and takeoff from the grass airstrip to demonstrate for the student pilot. Then the student pilot made "a couple of takeoffs and landings." The passenger said that this was the pattern the instructor followed when training the student - he landed first, then the student would land. She knew this because the student pilot had told her about it when they talked about his flying.</p> <p>The passenger recalled that a few times during the flight, the flight instructor said "my</p>					
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airplane." This made her mad because she wanted to see her boyfriend fly. The passenger said that the flight "turned into instruction instead of just a flight." She was starting to get drowsy. She usually fell asleep when she went flying. The last thing she remembers about the accident flight is that they were flying away from the airport where they had made the landings. The next thing she remembers is waking up in the hospital.

According to one witness, who was a pilot and resided at the airport, the airplane made a left traffic pattern for landing on runway 25. The airplane was high on final approach, and the pilot slipped first one way and then the other to lose altitude. The slips were "picture perfect" and the pilot then executed a "perfect flare" at a point where about 1,800 feet of the 2,125-foot-long grass airstrip was available for landing. The witness stated that the airplane was in no danger of overshooting the runway and could "have easily landed and stopped on the runway." With the airplane at an altitude of about 10 feet agl, the pilot added power. The witness expected the airplane to climb out straight ahead; however, the airplane turned left until it was "sideways" to the runway, the nose pitched up, and the airplane climbed steeply to about 80 to 100 feet agl before stalling. The airplane pivoted about its left wing, descended in a near vertical attitude and impacted the ground. When asked about engine power, the witness stated that the power was "on full", but the engine was "running rough, like the carburetor heat might have been on."

Another witness, who was not a pilot, but had observed many airplanes land at the airport, reported that he first saw the airplane when it was on final approach. The motion of the airplane seemed odd to him as it slipped to the right and then to the left. The airplane then "swung into a normal descent," and it looked to the witness to be in the correct position to touch down about a third of the way from the runway threshold, at the "normal" touchdown location. When the airplane was at an altitude of 6 to 8 feet agl, he heard the engine throttle up. The airplane's nose started to come up and it rolled to the left. The airplane ascended in a nose high attitude, and at the top of its climb, it "whipped over," pivoting around the left wing to a nose down vertical attitude. The airplane descended and hit the ground right wing first. When asked about engine power, the witness stated that the airplane's engine was running at "full throttle" until it hit the ground.

## PERSONNEL INFORMATION

The flight instructor held a commercial pilot certificate with airplane single engine land and instrument airplane ratings and a flight instructor certificate with an airplane single engine land rating. His most recent second class medical certificate was issued on October 10, 2003, with the limitation, must wear corrective lenses.

Review of the flight instructor's FAA airman records indicated that he received his private pilot certificate on October 5, 1985, by completion of the required test. He received his commercial pilot certificate on February 10, 1993, on the basis of military competence obtained in the United States Air Force. On November 18, 2003, he received his flight instructor certificate by completion of the required test.

On May 29, 2004, the flight instructor was involved in an accident while providing flight instruction to a student in a Cessna 172M at Vernonia Municipal Airport, Vernonia, Oregon. According to the NTSB Factual Report on the accident, the flight instructor was performing a simulated engine out forced landing as a demonstration for his student. During the landing on the 2,940-foot-long grass runway, the airplane touched down long, overran the runway end, and struck a fence. The flight instructor and the student were not injured, and the airplane sustained substantial damage. The NTSB determined that the probable cause of the accident was "the instructor pilot's misjudgment of speed and distance and his failure to execute a go-around resulting in an overrun of the runway." The flight instructor's FAA airman records indicated that on July 9, 2004, he completed a reexamination given by an FAA inspector.

A pilot logbook belonging to the flight instructor was found in the airplane. The entries in this

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logbook began on October 13, 2003, and continued to an entry on June 22, 2005. The entries totaled 624.8 hours flight time, all in single engine land airplanes, of which 565.4 hours were acting as a flight instructor. The logbook showed total time carried forward of 4,000 hours of which 2,000 hours were in single engine land airplanes and 2,000 hours were in multiengine land airplanes.

There were no entries found in the flight instructor's logbook showing a flight into the Flying M Airport. However, another flight instructor submitted a written statement indicating he had flown into the Flying M Airport with the accident flight instructor on March 10, 2005. He stated that they "performed two approaches, two full-stop landings, and two takeoffs" in a Cessna 182. He further stated that the accident flight instructor "was advised of the special considerations necessary for flight operations at the Flying-M Ranch" and "performed the second approach, landing, and takeoff as pilot in command."

The student pilot was issued a third class medical certificate on June 6, 2005, with the limitation, must wear corrective lenses. Review of the student pilot's flight logbook, which was found in the airplane, revealed that as of June 20, 2005, he had accumulated a total of 12.1 hours flight time of which 10.2 hours were dual flight instruction and 1.9 hours were solo. The logbook indicated the student received all of the flight instruction from the flight instructor, and the flight instructor endorsed the logbook for solo flight on June 10, 2005.

## AIRCRAFT INFORMATION

Examination of the airplane's maintenance records indicated that the 1974 model Cessna Skyhawk received its most recent annual inspection on February 17, 2005, at a total time of 7,542.1 hours. As of that date, the engine, a Lycoming O-320-E2D, S/N RL-49952-27A, had accumulated 1,190.2 hours since factory remanufacture. Review of the maintenance records revealed no evidence of any uncorrected maintenance discrepancies.

A "Cry Log" found in the airplane listed no uncorrected cries or discrepancies. The most recent cry stated "stall warning horn very light at 70 mph, not grounding." This cry was written up by the student pilot. The resolution to the problem stated that the stall warning system was inspected from the wing to the horn and no visible signs of a problem were found. Additionally, the resolution stated that the airplane was test flown and no defects in the stall warning system were noted. The test flight was made on June 14, 2005.

## METEOROLOGICAL INFORMATION

At 2053, the reported weather conditions at McMinnville Municipal Airport, McMinnville, Oregon, located approximately 14 nautical miles southeast of the accident site, were wind from 020 degrees at 8 knots, visibility 10 statute miles, sky clear, temperature 21 degrees C, dew point 10 degrees C, and altimeter 29.99 inches Hg.

## AIRPORT INFORMATION

According to information on the website, airnav.com, the Flying M Airport is privately owned and has a single turf/gravel runway, oriented 7/25 degrees, which is 2,125 feet long and 40 feet wide. Landings are made to the west (runway 25) and takeoffs are made to the east (runway 7). The obstructions listed for runway 7 are "70 ft. trees mtn, 55 ft. from runway, MOUNTAIN TO SOUTHWEST, TREES SURROUND PRIMARY AND APCH SFC." The obstructions listed for runway 25 are "45 ft. trees, 250 ft. from runway, 90 ft. right of centerline, 5:1 slope to clear, 100' TREES 150R AND 50' TREES ON CNTRLN AT 1000'. ABRUPT 5' RISE IN TERRAIN TO THRS: 30' TREES 50' R AT 400' BYD THR."

## WRECKAGE AND IMPACT INFORMATION

Examination of the accident site by NTSB and FAA representatives revealed that the airplane

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impacted the ground about 128 feet south of the runway centerline and 267 feet east of the fence at the end of runway 25. The airplane remained substantially intact and came to rest upright on a measured magnetic heading of 320 degrees with the rear of the fuselage resting on a split rail fence and the nose and outboard section of the right wing resting on the gravel road running parallel to the south side of the runway. The airplane was resting below a power line that ran alongside the road, and the power line was not damaged during the accident. The leading edge of the right wing outboard of the lift strut attach point was crushed aft to the forward spar. The leading edge of the left wing was undamaged. The outboard rear section of the left wing was bent upward and displayed transfers of brown woody material that matched the color and texture of the power pole located a few feet behind the wreckage. The empennage was undamaged. The forward section of the cabin was crushed aft, the firewall was pushed aft about 1 foot, and the nose of the propeller spinner was crushed flat against the propeller.

The wreckage was recovered from the accident site on June 24, 2005, and examined on August 2, 2005, at the facilities of Specialty Aircraft in Redmond, Oregon, by the NTSB IIC and representatives of Cessna Aircraft Company, Textron Lycoming and the FAA. All flight controls were accounted for and remained attached to their respective surfaces. Flight control cable continuity was confirmed from the tailcone to the aft baggage area and from the wing roots to the flaps and ailerons. The flaps were determined to be retracted, and the elevator trim tab was found to be set approximately 3 degrees up.

The left front seat base was broken and its seat rails were bent. A gouge was noted on the ninth hole aft on the outboard left front seat rail. The left front outboard lap belt had been cut. The buckle was latched and the inboard lap belt remained intact. The right front seat was out of the aircraft and its base was deformed to the right. The right seat rails were bent, separated from the floor and curled upwards at the forward ends. The outboard right seat rail's first hole aft was broken. The left front seat lap belts were unlatched and intact. Both the left and right shoulder harnesses had been cut. The left rear lap belt had been cut. The rear bench seat base was buckled downward in the middle, but remained attached to the floor. The rear bench seat back remained intact.

The engine remained attached to the airframe by the engine mount. The propeller remained attached to the engine crankshaft flange. The propeller blades displayed leading edge gouging, tip damage and chord wise scratching. One of the blades exhibited torsional twisting and "S" bending. The propeller, top spark plugs and the vacuum pump were removed. Using a drive tool, the crankshaft was rotated by hand through the vacuum pump drive pad and engine continuity was confirmed. "Thumb" compression was obtained on all four cylinders. The cylinder combustion chambers were examined through the spark plug holes using a lighted bore scope. There was no visible evidence of foreign object ingestion or detonation, and the valves appeared to be intact and undamaged. Both magnetos produced spark at all four leads during hand rotation. No evidence of pre-impact mechanical malfunctions was observed during examination of the engine.

## MEDICAL AND PATHOLOGICAL INFORMATION

Autopsies of the flight instructor and the student pilot were conducted by the Medical Examiner Division of the Oregon State Police in Clackamas, Oregon. Toxicology tests on both individuals were conducted by the FAA's Toxicology and Accident Research Laboratory. The student pilot's test results were negative for carbon monoxide, cyanide, ethanol and drugs. The flight instructor's test results were negative for carbon monoxide, cyanide, and ethanol. The flight instructor's test results were positive for 71.24 ug/ml acetaminophen in urine, 2.228 ug/ml fluoxetine in urine, 54.374 ug/ml fluoxetine in liver, 2.691 ug/ml norfluoxetine in urine, and 79.836 ug/ml norfluoxetine in liver.

The NTSB Medical Officer reviewed the flight instructor's FAA medical records. These records indicated that the flight instructor's most recent application for a 2nd Class Airman Medical

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Certificate was on October 10, 2003. The application indicated "no" for "Do you currently use any medication" and "yes" for "Mental disorders of any sort," "Military medical discharge," "Admission to hospital" and "Other illness, disability, or surgery." Under "Explanations" is noted "Depression" and "Injury from Class A Mishap (Ejection)." Under "Visits to Health Professional Within Last 3 Years" is noted only a "General Check Up" in 2002. Under "Comments on History and Findings" is noted "Ejected from F16 in 1992. Discharged from Air Force 1997 with continued pain. Took depression meds 1997-2000. No meds for 2 years now." The record of application indicated that the pilot "has been issued" a medical certificate. There is no indication that any additional records were requested or received by the FAA in regard to this application. Electronic records do not indicate any other applications for an FAA Airman Medical Certificate more recently than 1989.

Additionally, the NTSB Medical Officer reviewed the flight instructor's U.S. Air Force medical records and Veteran's Affairs (VA) medical records, and prepared a report that is included in the docket for this accident. These records indicated that the flight instructor had developed increasingly severe symptoms of obsessive-compulsive disorder (OCD) and post-traumatic stress disorder (PTSD) following his crash of an F-16 in 1992, in which he sustained a significant head injury. He was unable to continue functioning as a military pilot and was hospitalized for his symptoms following an attempt to cross-train into a cargo aircraft. In spite of improvement on medications and psychotherapy, the flight instructor had persistent OCD symptoms including checking behaviors, particularly with regard to driving, dressing, and carrying his wallet; and PTSD symptoms including anxiety, insomnia, and panic attacks, exacerbated by flying and by images of combat. The VA medical records noted panic attacks and checking behaviors as recently as August 2004. There is no notation in the medical records that the pilot began flying again in 2003.

The medical records reviewed indicated the flight instructor was continuously prescribed medications from 1997, forward to control his OCD and PTSD symptoms. As of February 2005, he was noted to have been on: fluoxetine, an antidepressant also indicated for OCD and used for PTSD; clonazepam, indicated for panic disorder and used for anxiety and insomnia; and buspirone, an anti-anxiety medication. The flight instructor had been noted to be using the medications somewhat irregularly.

## ADDITIONAL INFORMATION

The wreckage was released to a representative of the owner on August 2, 2005.

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<b>Landing Facility/Approach Information</b>					
Airport Name Flying M	Airport ID: OR05	Airport Elevation 448 Ft. MSL	Runway Used 25	Runway Length 2125	Runway Width 40
Runway Surface Type: Grass/turf; Gravel					
Runway Surface Condition: Dry					
Approach/Arrival Flown: NONE					
VFR Approach/Landing: Go Around; Traffic Pattern					
<b>Aircraft Information</b>					
Aircraft Manufacturer Cessna		Model/Series 172M		Serial Number 17263119	
Airworthiness Certificate(s): Normal					
Landing Gear Type: Tricycle					
Amateur Built Acft? No	Number of Seats: 4	Certified Max Gross Wt. 2300 LBS	Number of Engines: 1		
Engine Type: Reciprocating	Engine Manufacturer: Textron Lycoming	Model/Series: O-320-E2D	Rated Power: 150 HP		
- Aircraft Inspection Information					
Type of Last Inspection Annual	Date of Last Inspection 02/2005	Time Since Last Inspection 109 Hours	Airframe Total Time 7651 Hours		
- Emergency Locator Transmitter (ELT) Information					
ELT Installed?/Type Yes /	ELT Operated? Yes	ELT Aided in Locating Accident Site? No			
<b>Owner/Operator Information</b>					
Registered Aircraft Owner Hillsboro Flying Club		Street Address 4609 SW Pendleton St.			
		City Portland	State OR	Zip Code 97221	
Operator of Aircraft Hillsboro Flying Club		Street Address 4609 SW Pendleton St.			
		City Portland	State OR	Zip Code 97221	
Operator Does Business As:			Operator Designator Code:		
- Type of U.S. Certificate(s) Held: None					
Air Carrier Operating Certificate(s):					
Operating Certificate:			Operator Certificate:		
Regulation Flight Conducted Under: Part 91: General Aviation					
Type of Flight Operation Conducted: Instructional					

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**First Pilot Information**

Name On File	City On File	State On File	Date of Birth On File	Age 39
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Sex: M	Seat Occupied: Right	Occupational Pilot?	Certificate Number: On File
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Certificate(s): Flight Instructor; Commercial

Airplane Rating(s): Single-engine Land

Rotorcraft/Glider/LTA: None

Instrument Rating(s): Airplane

Instructor Rating(s): Airplane Single-engine

Current Biennial Flight Review? 11/2003

Medical Cert.: Class 2	Medical Cert. Status: With Waivers/Limitations	Date of Last Medical Exam: 10/2003
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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	4625		2625	2000	1585	1015	507			
Pilot In Command(PIC)	4096									
Instructor	565		565							
Instruction Received										
Last 90 Days	53	31	53							
Last 30 Days	31	27	31							
Last 24 Hours										

Seatbelt Used? Yes	Shoulder Harness Used? Yes	Toxicology Performed? Yes	Second Pilot? Yes
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**Flight Plan/Itinerary**

Type of Flight Plan Filed: None

Departure Point Hillsboro	State OR	Airport Identifier HIO	Departure Time 1945	Time Zone PDT
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Destination Same as Accident/Incident Location	State	Airport Identifier OR05	
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Type of Clearance: None

Type of Airspace:

**Weather Information**

Source of Wx Information:

Unknown

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**Weather Information**

WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
MMV	2053	PDT	163 Ft. MSL	14 NM	135 Deg. Mag.
Sky/Lowest Cloud Condition: Clear			Ft. AGL	Condition of Light: Day	
Lowest Ceiling:		Ft. AGL	Visibility: 10	SM	Altimeter: 29.99 "Hg
Temperature: 21 °C	Dew Point: 10 °C	Weather Conditions at Accident Site: Visual Conditions			
Wind Direction: 20	Wind Speed: 8	Wind Gusts:			
Visibility (RVR): Ft.	Visibility (RVV): SM				
Precip and/or Obscuration: No Obscuration; No Precipitation					

**Accident Information**

Aircraft Damage: Substantial	Aircraft Fire: None	Aircraft Explosion: None
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- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL
First Pilot					
Second Pilot					
Student Pilot		1			1
Flight Instructor		1			1
Check Pilot					
Flight Engineer					
Cabin Attendants					
Other Crew					
Passengers			1		1
- TOTAL ABOARD -	2	1			3
Other Ground					
- GRAND TOTAL -	2	1			3

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Administrative Information

Investigator-In-Charge (IIC)

Georgia R. Struhsaker

Additional Persons Participating in This Accident/Incident Investigation:

John L Judge  
Federal Aviation Administration  
Portland, OR

Mark Platt  
Textron Lycoming  
Williamsport, PA

Tom Moody  
Cessna Aircraft Company  
Wichita, KS