Aviation Investigation Final Report

Location:	Oak Harbor, Washington	**Accident Number:**	SEA05FA072
Date & Time:	April 8, 2005, 16:00 Local	**Registration:**	N39482
Aircraft:	Stinson 10-A	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

A pilot and his passenger flying a Cessna 170 reported that they observed a small airplane on approach, to the east, to a small airstrip. The passenger watched the aircraft on final approach to the point where a go-around was initiated. She was not sure if the aircraft actually touched down or not. She watched it as it pulled up over the trees and continued to the east. She momentarily lost sight of the aircraft due to interference with the frame of the door of the aircraft she was in. When she tried to find the aircraft again, she spotted a plume of smoke. Witnesses near the accident site reported that the aircraft was seen traveling in an easterly direction, very low and near the tree line just before the collision with several trees. The witnesses reported that the engine was running, but seemed like it was strained or not at full power. The local area Paramedic who tended to the pilot before he was airlifted to a hospital reported that he asked the pilot if he had a medical condition, which the pilot responded that he did not. The pilot was also able to recall the day and date and further reported to the paramedic that he "overshot his landing," and that either the "winds or wing flipped him over." At the time of the accident, the winds were from the west at ten knots. During the post-accident inspection of the airframe and engine, no evidence of a mechanical failure or malfunction was found.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to adequately plan the approach for landing and maintain clearance from trees during the go-around. A tailwind and trees were factors.

Findings

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

Findings
1. (F) OBJECT - TREE(S)
2. (C) CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND
3. (F) WEATHER CONDITION - TAILWIND
4. (F) PLANNED APPROACH - INADEQUATE - PILOT IN COMMAND

Factual Information

HISTORY OF FLIGHT

On April 8, 2005, about 1600 Pacific daylight time, a Stinson 10-A, N39482, registered to and flown by the pilot as a 14 CFR Part 91 personal flight, collided with trees and subsequently the terrain near Oak Harbor, Washington. Visual meteorological conditions prevailed at the time and no flight plan was filed. The aircraft was destroyed by impact damage and a post-crash fire. The private pilot survived the accident, but succumbed to his injuries the next day. The passenger was fatally injured at the accident site. The aircraft departed from the pilot's private airstrip at an unknown time. A family member reported that a fuel receipt was found indicating that the aircraft took on fuel about 1400 on the day of the accident from Skagit Regional, Mount Vernon, Washington. The airstrip was located within one-quarter of a mile northwest of the accident site.

A pilot and his passenger flying a Cessna 170 reported that they were traveling from Boeing Field, Seattle, Washington, to Friday Harbor, Washington. About 1600, they were flying westbound at 1,800 feet and the pilot was in contact with Whidbey NAS at the time. As they were traveling over Whidbey Island, he stated that his passenger said that she was watching a small airplane on approach, to the east, to a small airstrip. She watched the aircraft on final approach to the point where a go-around was initiated. She was not sure if the aircraft actually touched down or not. She watched it as it pulled up over the trees and continued to the east. She momentarily lost sight of the aircraft due to interference with the frame of the door of the aircraft she was in. When she tried to find the aircraft again, she spotted a plume of smoke. The passenger notified the pilot, who in turn contacted Whidbey NAS to report the accident and circled the area.

Witnesses near the accident site reported that the aircraft was seen traveling in an easterly direction, very low and near the tree line just before the collision. The witnesses reported that the engine was running, but seemed like it was strained or not at full power.

The local area Paramedic who tended to the pilot before he was airlifted to a Seattle area hospital reported that he asked the pilot if he had a medical condition, which the pilot responded that he did not. The pilot was also able to recall the day and date and further reported to the paramedic that he "overshot his landing," and that either the "winds or wing flipped him over." The paramedic stated that this conversation was early in the call when the pilot made these statements, and at this time, his level of consciousness was good and he was oriented. As the call progressed, and in preparation for transport, the pilot's level of consciousness decreased.

PERSONNEL INFORMATION

At the time of the accident, the pilot held a private pilot certificate for single-engine land aircraft which was issued in May 1992. A review of the pilot's flight logbook indicated that the pilot had accumulated approximately 279 hours in all aircraft, with 205 hours as pilot-in-command. The first flight logged in the Stinson was in April 2002. The pilot had accumulated approximately 136 hours in the Stinson, with 125 hours as pilot-in-command at the time of the accident.

Two entries in the remarks section of the logbook indicated that landings had been made to the east at the pilot's airstrip. One entry indicated that a takeoff was made with a tailwind.

A flight review was accomplished on April 1, 2004, in the Stinson 10-A.

Federal Aviation Administration medical records division indicated that the most recent medical certificate issued to the pilot was a third class medical certificate dated October 17, 2002. No waivers or limitations were reported at this time.

AIRCRAFT INFORMATION

A review of the maintenance logbooks indicated that the last annual inspection was accomplished on October 3, 2002. At this time, the total airframe time was estimated as 3,034.25 hours. The mechanic made a note in the entry indicating that the tachometer was not recording correctly and stated that all flights were to be logged until the tachometer was fixed. Entries in the pages following the inspection indicate that the pilot had been logging flight times. The entries also indicated that the pilot was accomplishing maintenance on the aircraft to include the landing gear, wheels and brakes. The pilot also indicated an engine oil leak. The entries indicated that he replaced the engine starter and installed flex/exhaust and a new muffler bracket. He also Installed a new carburetor and heat shroud, and worked on the flap return spring and repaired and patched fabric. The pilot is not a Federal Aviation Administration certificated airframe and powerplant mechanic.

The last entry before the accident was on March 30, 2005. At this time the aircraft had accumulated approximately 3,127.6 hours.

METEOROLOGICAL INFORMATION

Whidbey Naval Air Station (NUW), the nearest weather reporting facility located seven nautical miles north of the accident site reported at 1555, few clouds at 3,000 feet. Visibility was 10 miles. The temperature was 11 degrees C, and the Dew Point was 6 degrees C. The wind was from 290 degrees at 10 knots. The altimeter setting was 29.77" Hg.

WRECKAGE AND IMPACT INFORMATION

An on site investigation was accomplished on April 9, 2005, by investigators from the National

Transportation Safety Board and Federal Aviation Administration.

The wreckage was located on flat ground which was covered with tall trees and dense underbrush. The tree height varied to as high as 150 feet. The accident site coordinates were 48 degrees 15.349' North latitude by 122 degrees 42.973' West longitude at a ground elevation of approximately 180 feet mean sea level.

The airstrip that the flight was landing at was located approximately 800 feet northwest of the accident site. The airstrip runs approximately 80/260 degrees and is approximately 1,000 feet in length, grass covered and about 75 feet wide. The airstrip elevation is approximately 190 feet mean sea level.

The fuselage was laying on its left side with the nose pointing to 60 degrees. The left wing remained in position to the fuselage and was laying on top of downed branches and underbrush. Both the flap and aileron control surfaces, although heat distressed, remained attached to their respective hinges. Both front and aft lift struts remained attached at the wing surface. The attach points at the fuselage were heat distressed.

The fuselage frame structure was intact with the covering burned away. The right wing structure was folded over about mid-span and on top of the right side of the fuselage. The covering was burned away. Evidence of the flap and aileron structure was noted. The cockpit area aft to the empennage was destroyed by fire. Minimal damage was noted to the empennage and associated control surfaces. All fixed and movable control surfaces remained attached in their respective positions. The flight control cables and push-pull tubing remained attached to their respective points fore and aft. Part of the elevator control tubing was burned away in-between attach points.

From the main wreckage on a magnetic heading of 280 degrees, evidence of a freshly broken tree trunk was noted about 30 feet away. Several branches appeared to have extended from this trunk and were positioned underneath and on top of the wreckage. Continuing on the same heading of 280 degrees for several hundred feet further beyond the broken tree, evidence of tree top branches were noted to be broken. These trees were at least 100 feet in height.

The engine remained attached to the firewall. One wooden propeller blade remained attached to the propeller hub and was intact. The other propeller blade was broken near the hub. A section of the tip of the propeller blade was located near the base of the broken tree located about 30 feet behind the wreckage. The aft end of the engine was heat distressed. The engine was laying on its left side.

MEDICAL AND PATHOLOGICAL INFORMATION

The pilot survived the accident, but succumbed to his injuries the next day. The King County Medical Examiner reported that the pilot's cause of death was "...thermal burns involving at

least 80% of total body surface area."

ADDITIONAL INFORMATION

An engine inspection and teardown was conducted on April 8, 2005, at AvTech Services, Maple Valley, Washington, by the NTSB IIC.

During the inspection, the propeller was removed from the flange. The rocker box covers were removed as well as the spark plugs. The magnetos were removed from their mounts. The starter and carburetor were removed for further inspection.

The cowling around the engine was removed. During the removal, it was noted that the lower left side cowling was crushed up and aft. Wood fibers were found among the metal folds. Further removal of the cowling found a one foot in length by about two inch in diameter section of wood inside the cowling.

The crankshaft rotated easily by hand. Accessory gear and valve train continuity was established. Compression was developed in each cylinder. The number 1 cylinder was weak and subsequently removed. The piston and piston rings were intact. The intake and exhaust valves were seated. The push rods were undamaged and the rocker arms were intact.

Both magnetos were heat distressed and would not produce a spark. Their drives were intact and would rotate.

All Spark plugs displayed normal operating signatures.

The Marvel/Schebler carburetor displayed heat distress to the air box. The throttle, mixture and carburetor heat controls were attached. The float bowl was removed. The floats were intact, however, one float separated from the arm at the solder point. The fuel finger screen was removed and displayed heat distress on the screen. The venturi material was melted.

The starter drive shaft was intact and would freely rotate.

Further inspection of the fuselage found that the flap handle was found frozen in place by melted metal material around the ratchet plate. The melted material was removed and the flap handle position was found between the 20 degree and 30 degree latches. The handle was moved and found that the latching mechanism was functional and would lock into the latches.

Further inspection of the left wing noted that the left wing fuel tank displayed a circular indention at the leading edge. The tank, which is positioned at the wing root, had an indentation which started about five inches outboard of the wing root and measured 15 inches across. The metal material was crushed aft 13 inches. Another indention was noted to the wing leading edge beginning four feet outboard of the wing root and was eight inches across. The material was crushed aft four inches. The third indentation was found ten feet, 10 inches

outboard of the wing root and along the outboard section of the wing slat. The indentation measured six inches across. The material was crushed aft six inches. The flap and aileron were confirmed attached at their respective hinges. The surfaces displayed heat distress.

Radar data from Whidbey NAS was provided to the National Transportation Safety Board for review. The NTSB Transportation Safety Specialist analyzed the data and identified all traffic in the area except for a short tracking of a flight which the specialist believed to be the accident aircraft. The radar return indicated a target traveling southwest bound over the water between Skagit Bay and Saratoga Passage at 1,300 to 1,200 feet at 1554. The target then turned west bound toward land when radar contact was lost. No in-flight communications were sent or received by the accident aircraft.

The wreckage was recovered from the accident site by AvTech Services, Kent, Washington, and transported and stored in Maple Valley, Washington.

Aircraft documents and the pilot's flight logbook were returned to a family representative on April 12, 2005. The wreckage was released to the family representative on April 22, 2005.

Pilot Information

Certificate:	Private	**Age:**	48,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Expired	**Last FAA Medical Exam:**	October 17, 2002
Occupational Pilot:		**Last Flight Review or Equivalent:**	April 1, 2004
Flight Time:	279 hours (Total, all aircraft), 136 hours (Total, this make and model), 205 hours (Pilot In Command, all aircraft), 2 hours (Last 90 days, all aircraft), 1 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Stinson	**Registration:**	N39482
Model/Series:	10-A	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	8182
Landing Gear Type:	Tailwheel	**Seats:**	3
Date/Type of Last Inspection:	October 3, 2002 Annual	**Certified Max Gross Wt.:**	1680 lbs
Time Since Last Inspection:	93 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	3128 Hrs at time of accident	**Engine Manufacturer:**	Franklin
ELT:	Installed, not activated	**Engine Model/Series:**	4AC-199E3
Registered Owner:	Ted W. Mathews	**Rated Power:**	90 Horsepower
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	NUW,47 ft msl	**Distance from Accident Site:**	7 Nautical Miles
Observation Time:	15:55 Local	**Direction from Accident Site:**	360°
Lowest Cloud Condition:	Few / 3000 ft AGL	**Visibility**	10 miles
Lowest Ceiling:		**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	290°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.77 inches Hg	**Temperature/Dew Point:**	11°C / 6°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Oak Harbor, WA	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:		**Type of Airspace:**	Class E

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	48.259445,-122.699996

Administrative Information

Investigator In Charge (IIC):	Eckrote, Debra
Additional Participating Persons:	David Lehman; FAA/FSDO; Renton, WA John M Gilbert; FAA/FSDO; Renton, WA
Original Publish Date:	September 13, 2005
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=61295