



National Transportation Safety Board Aviation Accident Final Report

Location:	Scappoose, OR	Accident Number:	SEA04FA006
Date & Time:	10/18/2003, 1413 PDT	Registration:	N340P
Aircraft:	Cessna 340A	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	2 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

Witnesses first observed the aircraft on final approach for landing, with the engine(s) making a backfiring sound. While the aircraft was on short final, another aircraft pulled onto the runway and initiated its takeoff roll. The accident aircraft was observed to initiate a go-around, but did not appear to be gaining altitude and was at what the witnesses thought was a slow airspeed. About mid-field, the accident aircraft made an approximate 45 degree turn from runway heading. Within 1/4 mile from the runway, the aircraft lost altitude. The witness stated that the aircraft was about 80 feet agl when the aircraft stalled, rolled inverted (left wing down) and collided with the flat open terrain in a nose low attitude. A post-crash fire subsequently consumed the wreckage. During the post-crash inspection of the engines, it was found that both engines displayed signs of operating at a lean mixture setting. The left engine pistons and spark plugs displayed a more serious lean condition than the right side and displayed the early signs of detonation on the piston heads. No other mechanical failure or malfunction was noted to either the engines or airframe.

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 airspeed while maneuvering. An inadvertent stall, the pilot's failure to follow engine operation procedures and engine detonation were factors.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT

Phase of Operation: MANEUVERING

Findings

1. (F) MISC,ENGINE PRE-IGNITION AND/OR DETONATION
 2. (C) AIRSPEED - NOT MAINTAINED - PILOT IN COMMAND
 3. STALL - INADVERTENT - PILOT IN COMMAND
 4. (F) PROCEDURES/DIRECTIVES - NOT FOLLOWED - PILOT IN COMMAND
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Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: DESCENT - UNCONTROLLED

Findings

5. TERRAIN CONDITION - OPEN FIELD

Factual Information

HISTORY OF FLIGHT

On October 18, 2003, at 1413 Pacific daylight time, a Cessna 340A, N340P, registered to and operated by the pilot as a 14 CFR Part 91 personal flight, collided with the terrain shortly after initiating a go-around at the Scappoose Industrial Airpark, Scappoose, Oregon. Visual meteorological conditions prevailed at the time and no flight plan was filed. The aircraft was destroyed by impact forces and a post-crash fire. The airline transport pilot and his passenger were fatally injured. The flights last known departure point was from Red Bluff, California, sometime after 1230.

Hotel, car rental and fuel receipts were found among personal effects located in the wreckage. The receipt dates began on October 6, 2003 and ended on October 18, 2003. Family members reported that the purpose of the flight was a vacation to Utah and then for the pilot to attend a class reunion in California. The flight originated in Olympia, Washington, the aircraft's home base.

During a telephone interview and subsequent written statement, a local resident located on the north side of the runway and near the final approach path for runway 15, reported that he was outside his home when he heard "...the plane backfiring from a long way out as it approached the airport before I actually saw the aircraft." The resident stated that the engine(s) were backfiring about every five seconds during the approach and appeared to be coming in with light power. The witness further stated that the approach appeared normal, steady and under control.

One witness located at a business on the Scappoose Airpark reported that the Cessna 340 was on short final to runway 15 when a V-tail Bonanza, pulled out onto the runway and began the takeoff roll. The Cessna initiated a go-around and diverted to the west side of the runway. The Cessna appeared to be slower than the Bonanza and was about 150 feet above ground level at mid-field when the Cessna made a left approximate 45 degree turn from runway heading and continued to the southeast. The aircraft then made a turn to the north and began to lose altitude. The witness stated that the aircraft was about 80 feet above ground level when the aircraft stalled, rolled inverted (left wing down) and collided with the flat open terrain in a nose low attitude.

During a telephone interview with the NTSB Investigator-in-Charge, the pilot of a Piper PA32, N4135R, reported that he had just landed on runway 15 and was taxiing back on the east side taxiway when he noticed that the V-tail Bonanza was taking off with a twin Cessna on final approach. This pilot stated that during his approach for landing and up to the time he turned his radio off when he cleared the runway, he did not hear any position announcements from the twin Cessna, nor did he hear a radio transmission from the Bonanza.

The pilot of Beech K35, N631T, V-tail Bonanza, stated that after he had refueled his aircraft he taxied to the approach end of runway 15 to complete his before takeoff checklist. During this time, he was monitoring 122.8 and did not recall hearing any aircraft report positions for aircraft in the pattern or near the airport. The pilot stated that prior to takeoff he visually checked for aircraft on base and final approach. The pilot did not see any traffic, and announced that he was taking off on runway 15 for a departure to the south.

PERSONNEL INFORMATION

At the time of the accident the pilot held flight certificates for commercial, flight instructor and airline transport pilot. The pilot was rated in single-engine land and sea, multi-engine land and sea, glider, helicopter, and instrument airplane. Instructor ratings included single and multi-engine aircraft and instrument airplane.

The pilot's flight logbook was found in the wreckage and had been partially burned. Total times were readable, however, data entry blocks for dates were burned away. The pilot's total flight time in all aircraft was estimated to be 3,850 hours. Approximately 961 hours were accumulated in multi-engine aircraft.

Endorsement pages for flight currency were partially destroyed by the fire. On March 15, 2001, an endorsement was noted for high altitude operations per FAR 61.31(g). On March 29, 2003, an endorsement for instrument proficiency was noted. A partial endorsement was noted for a flight review, however, the date was not readable.

The pilot held a Class II FAA medical certificate dated March 3, 2003. The certificate indicated a limitation that it was not valid for any class after March 31, 2004. FAA Aeromedical personnel reported that the special issuance authorization was for previous medical treatments for retroperitoneal sarcoma.

AIRCRAFT INFORMATION

Aircraft records indicated that the pilot purchased the 1978 Cessna 340A in September 2000. In November 2000, the Teledyne Continental Motors TSIO-520-NB RAM Aircraft Corporation remanufactured engines were installed with new McCauley propellers. The last Annual Inspection accomplished on the aircraft was on February 3, 2003, at an airframe total time of 4041.0 hours. The left side engine had accumulated a total time of 2950.7 hours and the right engine had accumulated a total time of 2867.0 hours. Both engines had accumulated a total of 176.8 hours since major overhaul.

Maintenance logbooks and records were found in the wreckage and removed for review.

The last airframe logbook entry was on September 4, 2003, at a hobbs time of 1034.9 hours and total airframe time of 4121.4 hours. The entry indicated that a new right side vacuum pump was installed. The entry also indicated that the nose gear strut was serviced.

The last engine logbook entries for both the left and right engines were dated September 11, 2003, at a hobbs time of 1046.4 hours and total airframe time of 4132.9 hours. The entries indicated that both engines had the oil and filters changed. The filters were checked for metal. The engines were then serviced with Aeroshell W100. Engine run-ups and leak checks were accomplished.

Fuel receipts found in the wreckage indicated that on October 6, 2003, the aircraft was serviced with fuel in Twin Falls, Idaho, and Cedar City, Utah. On October 14, 2003, the aircraft was serviced with fuel in Twenty Nine Palms, California. On October 16, 2003, the aircraft was serviced with fuel in Bermuda Dunes, California, City of Los Banos, California, and San Jose, California. No other fuel receipts were found after this date.

Family members reported that the pilot had flown into Scappoose on several occasions as the fuel was less expensive. Records also indicated that the aircraft's interior had been renewed in March 2002, by a company at the Scappoose Airpark.

METEOROLOGICAL INFORMATION

The surface weather from Scappoose Industrial reported at 1353 a wind from 150 degrees at nine knots. The sky was clear with a visibility of ten miles. The temperature was 68 degrees F, and the altimeter setting was 29.90" Hg.

WRECKAGE AND IMPACT INFORMATION

On October 19, 2003, investigators from the National Transportation Safety Board, Federal Aviation Administration, and Cessna Aircraft Company inspected the wreckage. A hand held GPS identified the accident location at 45 degrees 46.120 minutes north latitude, 122 degrees 51.085 minutes west longitude. The site elevation was approximately 60 feet. The terrain was flat, hard open ground and covered with short dry grass. The post-crash fire started a grass fire around the immediate area of the accident site. The Scappoose Airport was located within a quarter of a mile west of the accident site.

A circular ground impact crater was noted as the first indication of significant ground disturbance. Both the left and right side propeller assemblies were located about 6 feet on either side of the crater. The spinners were embedded in the soil exposing the propeller flanges. Preceding both propeller assemblies, a series of parallel lines in the soil were noted within ten feet of the propeller assemblies. Thirteen feet outboard of both propeller assemblies, shallow ground disturbances were noted.

From the initial impact crater to the main wreckage, a magnetic bearing of 30 degrees was measured. Viewing the wreckage distribution path from the impact crater to the main wreckage, the left side propeller assembly (s/n: 993272) was on the right side, and the right side propeller assembly (s/n: 993630) was on the left side. The main wreckage was located 85 feet from the impact crater. The ground between the crater to the main wreckage was littered with small pieces of structure and engine components. Shallow sliding ground disturbances were noted within this path.

The main wreckage came to rest inverted with the nose of the airplane facing approximately 290 degrees. The cabin area back to the aft baggage area was completely destroyed by impact damage and fire. Both the right and left wings remained in place, however, the right wing was extensively damaged from the fire.

The right wing inboard section out to the engine retained its form. The engine remained in place and displayed severe heat distress. The wing structure outboard of the engine was completely destroyed by the fire and was reduced to ash. A section of the right wing tip tank with the green lens cap was noted at the tip area of the wing. Flight control cable continuity was established from mid-span inboard to the cabin area. Fragments of the aileron and flap, to include the hinges were noted.

The left wing remained intact and attached to the fuselage. The wing was heat distressed, but retained its structure. The flap remained attached to the hinge and was partially extended. The flap was not locked into place and could be moved by hand. The aileron remained attached to the inboard hinges. The outboard hinge was separated from the aileron. The aileron trim tab remained attached at the hinge. The tip tank separated from the attach point and was within five feet of the wingtip. The left engine separated from the engine mounts and was located 80 feet from the main wreckage on a magnetic bearing of 50 degrees.

The aft fuselage was in place to the forward structure and positioned inverted. The horizontal stabilizers with the elevators attached at the hinges remained in place. The vertical stabilizer with the rudder attached remained in place. All trim tabs remained attached to their respective

hinges. All flight control cables remained attached to their respective flight control surfaces at the aft attach points. The cables were traced forward to about mid-cabin. Forward of that location was burned away and consisted of melted materials.

MEDICAL AND PATHOLOGICAL INFORMATION

A post-mortem performed on the pilot by Karen Gunson, M.D., State Medical Examiner, Portland, Oregon, reported that the pilot's cause of death was "Blunt force trauma of chest and head."

Toxicological samples were sent to the Federal Aviation Administration Civil Aeromedical Institute, Oklahoma City, Oklahoma, for analysis. The results of the analysis indicated 530 (mg/dl) glucose was detected in Urine. The Clinical Report indicated, "Postmortem vitreous glucose levels above 125 mg/dL are considered abnormal and postmortem urine levels above 100 mg/dL are considered abnormal."

The Clinical Report further stated for the diagnostic information for elevated glucose levels stated:

"Elevated postmortem vitreous glucose levels reported by the Forensic Toxicology and Accident Research Laboratory are considered hyperglycemic conditions which may or may not have been a factor in the accident. An abnormally high postmortem vitreous glucose level could have been caused by diabetes mellitus or several other medical conditions. Elevated glucose levels can also be caused by emergency medical treatment, strenuous exercise, strong emotions, shock and burns. Elevated postmortem urine glucose levels could be caused by diabetes mellitus or several other medical conditions, which may or may not have been a factor in the accident. It is impossible at the present time to identify hypoglycemic conditions in postmortem specimens."

ADDITIONAL DATA/INFORMATION

The wreckage was removed from the accident site on October 19, 2003, by personnel from HLM Air Services, and transported to a secured facility in Independence, Oregon. On November 5, 2003, investigators from the National Transportation Safety Board, Federal Aviation Administration, Teledyne Continental Motors, and Cessna Aircraft Company further inspected the airframe and engines.

The right engine, s/n: R-244896.R, displayed impact damage and heat distress, as it remained attached in the nacelle during the crash sequence and post crash fire. The accessory section was damaged from impact and heat. The oil pan was partially melted and displayed impact damage. Some melted debris was noted in the sump.

The right side propeller assembly had separated from the crankshaft flange. A section of the flange was broken away.

The top spark plugs were removed. The electrodes for numbers 2 and 4 were silver/ white colored with no deposits on the electrodes. Numbers 1 and 6 were oil soaked. The electrodes indicated normal wear signatures. The electrodes for numbers 3 and 5 were damaged/destroyed.

The crankshaft rotated easily by hand. Compression was developed in all six cylinders. Accessory gear and valve train continuity was established. Both magnetos had separated from their mounts. The magnetos were destroyed during the crash sequence.

All six piston heads were silver/white colored with no deposits on the piston heads.

The engine driven fuel pump was removed. The drive shaft was intact and the shaft rotated easily by hand. The unit was disassembled and the rotor and vanes were found intact. No contaminants were noted.

Inspection of the right side propeller assembly, hub s/n: 993630, noted that all three propeller blades remained attached to the hub and were in the low pitch position. The pitch links were damaged and each blade was movable by hand.

Blades R-A and R-B displayed slight "S" bending. Minor leading edge gouges and chordwise scratches were noted at the tips. Blade R-C displayed "S" bending the length of the blade. Heavy leading edge gouges were noted the length of the blade. Chordwise scratching was noted to the outboard three feet of the blade.

Left side engine, s/n: L-514289, separated from the wing at the engine mounts during the crash sequence and was outside of the burn area.

The propeller assembly had separated from the crankshaft flange. A section of the flange was broken away.

All six top spark plugs were removed. All six electrodes were silver/white colored with no deposits on the electrodes. All six electrodes displayed normal wear signatures. All six bottom spark plug electrodes were also silver/white colored with no deposits.

The left side magneto was partially separated from the mount. After the magneto was removed, the crankshaft rotated by hand. Compression was developed in all six cylinders. Accessory gear and valve train continuity was established. Spark was produced from all six leads from the right side magneto. All six leads produced a spark from the left side magneto.

The engine driven fuel pump was removed and the drive shaft was intact. The unit was disassembled and the rotor and vanes were found intact. No contaminants were noted.

A bore scope was used to view all six piston heads. All six piston heads were silver/white colored with no deposits on the heads and displayed the early signs of detonation.

The fuel manifold and fuel injector lines were intact. The manifold valve was removed and disassembled. The diaphragm was intact and pliable. A small amount of fuel was present in the chamber. The screen was clear of contaminants.

Inspection of the left side propeller assembly, hub s/n: 993272, noted that all three propeller blades remained attached to the hub and in the low pitch position. The pitch links were damaged and the blades were movable by hand.

Blade L-A was straight. No gouging was noted along the leading edge. Blade L-B was bent aft near the hub attachment. Minor leading edge gouging was noted at the blade tip. Blade L-C was bent aft near the hub attachment. Minor leading edge gouging and chordwise scoring was noted at the blade tip.

The engine control column was located in the cockpit. The column displayed severe heat distress. The throttle controls indicated that the left side control was 1 inch aft of open and the right side was 2 inches aft of open. The propeller controls indicated that both the left and right side were about 2 inches aft of increase. The mixture controls noted that both the left and right sides were at about position #4 (slightly leaner than mid-range).

The right side throttle valve was found open. The mixture control lever was 2/5 on the lean side (not quite half way) of the stop. The left side mixture control lever was about 3/5 from the stop, closer to the rich side.

The right side fuel valve was in the off position and the left side fuel valve was on main. Both levers were in the detent.

Documentation of the flight control trim settings indicated that the aileron trim was 15 degrees down. Rudder trim was 3 degrees left tab and elevator trim was 10 degrees down tab.

The wreckage was released to the President of HLM Air Services, Independence, Oregon, on November 5, 2003.

Pilot Information

Certificate:	Airline Transport; Flight Instructor; Commercial	Age:	72, Male
Airplane Rating(s):	Multi-engine Land; Multi-engine Sea; Single-engine Land; Single-engine Sea	Seat Occupied:	Left
Other Aircraft Rating(s):	Glider; Helicopter	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane	Toxicology Performed:	Yes
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim.	Last FAA Medical Exam:	03/03/2003
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	3850 hours (Total, all aircraft), 3503 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N340P
Model/Series:	340A	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	340A-0507
Landing Gear Type:	Retractable - Tricycle	Seats:	6
Date/Type of Last Inspection:	02/03/2003, Annual	Certified Max Gross Wt.:	6390 lbs
Time Since Last Inspection:		Engines:	2 Reciprocating
Airframe Total Time:	4041 Hours as of last inspection	Engine Manufacturer:	Continental
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	TSIO-520-NB
Registered Owner:	James T. Gillespie	Rated Power:	310 hp
Operator:	James T. Gillespie	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	SPB, 58 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	1353 PDT	Direction from Accident Site:	290°
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	9 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	150°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.9 inches Hg	Temperature/Dew Point:	20° C / 12° C
Precipitation and Obscuration:			
Departure Point:	Red Bluff, CA (RBL)	Type of Flight Plan Filed:	None
Destination:	(SPB)	Type of Clearance:	None
Departure Time:		Type of Airspace:	Class E

Airport Information

Airport:	Scappoose Industrial (SPB)	Runway Surface Type:	
Airport Elevation:	58 ft	Runway Surface Condition:	
Runway Used:	NA	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Traffic Pattern

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	1 Fatal	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Fatal	Latitude, Longitude:	45.776389, -122.850000

Administrative Information

Investigator In Charge (IIC):	Debra J Eckrote	Report Date:	06/02/2004
Additional Participating Persons:	Robert D Martinez; FAA-FSDO; Hillsboro, OR Todd Sigler; Cessna Aircraft Co.; Wichita, KS Michael Grimes; Teledyne Continental Motors; Lancaster, CA		
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.nts.gov/pubdms/ .		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

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](#).