



National Transportation Safety Board Aviation Accident Final Report

Location:	Ocala, Florida	Accident Number:	ERA12FA161
Date & Time:	January 27, 2012, 12:27 Local	Registration:	N340HF
Aircraft:	Cessna 340A	Aircraft Damage:	Substantial
Defining Event:	Aerodynamic stall/spin	Injuries:	1 Fatal, 1 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot entered the left downwind leg of the traffic pattern to land to the north. A surface wind from the west prevailed with gusts to 15 knots. Radar data revealed that the airplane was on final approach, about 1.16 miles from the runway and about 210 feet above the ground. The airplane then crashed in a pasture south of the airport, in a slight left-wing-low attitude, and came to rest upright. The cockpit and cabin were consumed in a postcrash fire. The pilot's wife, who was in the aft cabin and survived the accident, recalled that it was choppy and that they descended quickly. She recalled hearing two distinct warning horns in the cockpit prior to the crash. The airplane was equipped with two aural warning systems in the cockpit: a landing gear warning horn and a stall warning horn. The pilot likely allowed the airspeed to decay while aligning the airplane on final approach and allowed the airplane to descend below a normal glide path. Examination of the wreckage revealed that the landing gear were in transit toward the retracted position at impact, indicating that the pilot was attempting to execute a go-around before the accident. The pilot made no distress calls to air traffic controllers before the crash. The pilot did not possess a current flight review at the time of the accident. Examination of the wreckage, including a test run of both engines, revealed no evidence of a pre-existing mechanical malfunction or failure that would have precluded normal operation of the airplane.

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 and altitude on final approach, resulting in an impact with terrain short of the airport.

Findings

Aircraft	Airspeed - Not attained/maintained
Personnel issues	Lack of action - Pilot

Factual Information

HISTORY OF FLIGHT

On January 27, 2012, about 1227 eastern standard time, a Cessna 340A, N340HF, was substantially damaged following a collision with terrain during approach to Ocala International Airport (OCF), Ocala, Florida. The certificated private pilot was fatally injured and one passenger received serious injuries. The airplane was registered to a corporation and was operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed and an instrument flight rules flight plan was filed. The flight originated from Middle Georgia Regional Airport, Macon, Georgia, about 1117.

An examination of recorded radar data revealed that the pilot entered a left downwind leg on a southerly heading, about 6 miles west of OCF. The airplane was abeam the approach end of runway 36, and about 1,800 feet mean sea level (msl), when a left base turn was initiated. The pilot then initiated a turn to final about 2.5 miles from the runway approach end, at an altitude of about 700 feet msl. The last radar return with an altitude readout other than zero occurred about 1.16 nautical miles south of runway 36, at 1727:27 (HHMM:SS) at an altitude of about 300 feet msl (about 210 feet above the ground).

According to recorded voice transmissions between the accident pilot and Ocala FAA Contract Tower (FCT) personnel, the pilot checked in at 1723:51. The local controller provided the pilot with the current wind information and the pilot reported turning left base at 1724:07. The local controller reported that the airplane was not in sight and issued a landing clearance to the pilot. At 1725:41, the local controller advised the pilot that he had him in sight. At 1727:52, the local controller stated, "zero hotel foxtrot altitude altitude." No response was received from the pilot, and there were no distress calls received from the pilot.

The pilot's wife was seated in the aft cabin and reported the following after the accident. During the descent for landing at OCF, she recalled the "choppy" and "bumpy" conditions, and the "ground was coming up on them quickly." She recalled hearing two distinct warning horns in the cockpit prior to the crash. She also reported that, during the final phase of the flight, the airplane veered left noticeably two times. Prior to the crash, her husband made no comments regarding any mechanical difficulties with the airplane.

PERSONNEL INFORMATION

The pilot held a private pilot certificate with ratings for airplane single-engine land, airplane multiengine land, and instrument airplane. He reported a total flight experience of 1,005 hours on his latest third-class medical certificate application, dated June 10, 2011.

According to the pilot's logbook that was located in the wreckage, as of January 21, 2012, he recorded about 416 hours in single engine airplanes, about 632 hours in multi-engine airplanes, and about 828 hours as pilot-in-command. His first recorded flight in the accident airplane was on December 19, 2011, and he recorded about 14.2 hours total time in the accident

airplane.

The pilot's last recorded Code of Federal Regulations (CFR) part 61.56 flight review occurred on December 28, 2009. The flight included an instrument proficiency check and was conducted in a single-engine Cessna 182. The accident pilot's last flight review in a Cessna 340A occurred on November 3, 2007. The certified flight instructor (CFI) who administered the examinations was interviewed by the NTSB investigator-in-charge following the accident. The CFI reported that he last flew with the accident pilot in 2011. The CFI also owned a Cessna 340A and asked the accident pilot to fly the airplane to Albany, Georgia for him, since the CFI was injured from a recent fall. The CFI reported that the flight from Florida to Albany was uneventful until entering the traffic pattern for landing. The accident pilot lined up on an incorrect runway, and the CFI provided verbal guidance to correct the situation. Once aligned on the correct runway, the accident pilot allowed the airspeed to decay on short final to the point where the CFI responded out loud, "power, power!" The airplane landed hard on the runway, and a hard landing inspection was accomplished after the flight with no damage found.

A friend of the accident pilot, who was also a CFI, provided dual instruction following the pilot's purchase on the accident airplane in December, 2011. The CFI was interviewed by the NTSB investigator-in-charge following the accident. He stated that he did not administer a flight review to the accident pilot. During recent dual instruction, the accident pilot flew precise, smooth approaches and landings. He stated that the accident pilot would have passed a flight review based on how he flew when they were together. The CFI and the accident pilot conversed prior to the flight, and he was aware that the accident pilot needed to be in Ocala by 12 o'clock noon on the day of the accident to meet with a realtor.

The CFR part 61 addresses certification of pilots. The following pertains to flight reviews:

Except as provided in paragraphs (d), (e), and (g) of this section, no person may act as pilot in command of an aircraft unless, since the beginning of the 24th calendar month before the month in which that pilot acts as pilot in command, that person has—

- (1) Accomplished a flight review given in an aircraft for which that pilot is rated by an authorized instructor; and
- (2) A logbook endorsed from an authorized instructor who gave the review certifying that the person has satisfactorily completed the review.

AIRCRAFT INFORMATION

The airplane was a twin-engine, low wing, retractable gear airplane, serial number 340A0624. It was powered by two Continental TSIO-520 engines with RAM conversions rated at 335 horsepower each.

According to the aircraft maintenance records, the last annual inspection on the airframe and engines was performed on April 18, 2011, at a total aircraft time of 5,057.4 hours.

METEOROLOGICAL INFORMATION

The 1227 surface weather observation for OCF reported wind 260 degrees at 9 knots with gusts to 15 knots, visibility 10 miles or better, few clouds at 2,800 feet, ceiling 3,400 feet overcast, temperature 19 degrees C, dew point 14 degrees C, and altimeter setting 30.00 inches of mercury.

At 1224, the Ocala FAA Control Tower local controller provided with following wind information to the accident pilot, "...wind two seven zero at nine and uh gust one four." The pilot acknowledged the transmission.

WRECKAGE AND IMPACT INFORMATION

The accident site was situated on level ground and was an active livestock pasture. The main wreckage was located about 0.65 nautical miles south-southwest of the approach end of runway 36. The airplane fuselage came to rest on a heading of 120 degrees. Small flecks of white paint and a broken portion of the left wing navigation light were found with the first ground scar along the wreckage path. The straight line distance from the initial impact scar to the main wreckage was about 86 feet and was on a heading of 300 degrees.

An initial examination of the wreckage revealed the following. The cockpit and cabin were extensively burned from a post-impact fire. The landing gear handle was found in the retracted position. The position of the landing gear actuator linkage indicated an "in transit" position and was in close proximity to the up/retracted position. The wing flaps were found extended about 15 degrees. All engine controls were found near the full-forward positions.

Control cable continuity was established from the cockpit controls to the rudder and elevators. The left aileron cables were attached to the bell crank with overload separations noted near the wing root. The right aileron cables were continuous from the wing bell crank to the wing root. The pilot and co-pilot control wheels were linked together by the chain.

The left engine remained attached to the airframe via the engine mounts and thermal damage was evident to the accessory section. The engine-driven fuel pump was removed by investigators and the drive coupling was intact. The pump did not rotate freely by hand. The fuel metering unit/mixture control exhibited thermal damage and both control arms moved freely by hand. The crankshaft rotated by hand when the propeller flange was rotated manually with a hand tool. The turbocharger compressor wheel turned freely by hand and was coupled to the turbine wheel.

The right engine remained attached to the airframe by three of the four mount legs and thermal damage was evident to the accessory section. The engine-driven fuel pump was removed by investigators and the drive coupling was intact. The pump did not rotate freely by hand. The fuel metering unit/mixture control exhibited thermal damage and both control arms moved freely by hand. The crankshaft rotated by hand when the propeller flange was rotated manually with a hand tool. The turbocharger compressor wheel turned freely by hand and was coupled to the turbine wheel.

MEDICAL AND PATHOLOGICAL INFORMATION

A postmortem examination of the pilot was performed at the District 5 Medical Examiner's Office, Leesburg, Florida, on January 28, 2012. The autopsy report noted the cause of death as "Acute carbon monoxide poisoning and thermal injuries due to fire due to airplane crash" and the manner of death was "accident."

Forensic toxicology testing was performed on specimens of the pilot by the Federal Aviation Administration (FAA) Bioaeronautical Sciences Research Laboratory (CAMI), Oklahoma City, Oklahoma. The CAMI toxicology report indicated 31 percent carbon monoxide detected in blood and 1.3 ug/ml of cyanide detected in blood. No ethanol was detected in vitreous fluid. No drugs were detected in the urine.

TESTS AND RESEARCH

The engines were shipped to the Continental Motors, Inc. (CMI) facilities in Mobile, Alabama for further examination. The investigation team reconvened on April 3 through 5 to perform the examinations. After an initial evaluation of overall condition, it was concluded that test runs of the engines would be attempted.

Left Engine

Due to impact and thermal damage, the following items were substituted or repaired prior to the test: fuel manifold valve fittings, the throttle control link rod, the induction system "Y" pipe, and the exhaust system.

The engine was fitted to the test stand and a test club propeller was installed. The engine started normally on the first attempt without hesitation or stumbling in observed RPM. The engine RPM was advanced in steps for warm-up in preparation for full power operation. The engine was advanced to 1,200 RPM, 1,600 RPM, and 2,450 RPM and held for 5 minutes at each RPM setting to stabilize. The engine throttle was then advanced to the full open position and held for an additional 5 minutes to stabilize. Throughout the test phase, the engine accelerated normally without any hesitation, stumbling, or interruption in power and demonstrated the ability to produce rated horsepower. The engine fuel system was not adjusted and was found to be set at a lean condition as compared to CMI specifications.

Right Engine

Due to impact and thermal damage, the following items were substituted or repaired prior to the test: fuel pump fittings, the induction system "Y" pipe, and the engine starter.

The engine was fitted to the test stand and a test club propeller was installed. The engine started normally on the first attempt without hesitation or stumbling in observed RPM. The engine RPM was advanced in steps for warm-up in preparation for full power operation. The engine was advanced to 1,200 RPM, 1,600 RPM, and 2,450 RPM and held for 5 minutes at each RPM setting to stabilize. The engine throttle was then advanced to the full open position and held for an additional 5 minutes to stabilize. Throughout the test phase, the engine accelerated normally without any hesitation, stumbling, or interruption in power and demonstrated the ability to produce rated horsepower.

ADDITIONAL INFORMATION

The airplane was equipped with two aural warning systems, a landing gear warning horn and a stall warning horn.

According to the Cessna 340A Information Manual, the landing gear warning horn was controlled by the throttles and the wing flap position. The horn would sound intermittently if either throttle was retarded below about 15 inches of manifold pressure with the landing gear retracted or if the wing flaps were lowered past the 15 degree position with the landing gear in any position except extended and locked.

The stall warning horn would sound 5 to 10 knots above the stall in all flight configurations.

History of Flight

Approach-VFR pattern base	Aerodynamic stall/spin (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

Pilot Information

Certificate:	Private	Age:	55, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 3 Without waivers/limitations	Last FAA Medical Exam:	June 10, 2011
Occupational Pilot:	No	Last Flight Review or Equivalent:	December 28, 2009
Flight Time:	1048 hours (Total, all aircraft), 829 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N340HF
Model/Series:	340A	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	340A0624
Landing Gear Type:	Retractable - Tricycle	Seats:	5
Date/Type of Last Inspection:	April 18, 2011 Annual	Certified Max Gross Wt.:	5990 lbs
Time Since Last Inspection:		Engines:	2 Reciprocating
Airframe Total Time:	5057 Hrs as of last inspection	Engine Manufacturer:	CONT MOTOR
ELT:	Installed	Engine Model/Series:	TSIO-520-NB
Registered Owner:		Rated Power:	335 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:	OCF, 90 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	12:27 Local	Direction from Accident Site:	10°
Lowest Cloud Condition:	Few / 2800 ft AGL	Visibility	10 miles
Lowest Ceiling:	Overcast / 3400 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	9 knots / 15 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	260°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	19° C / 14° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Macon, GA (MCN)	Type of Flight Plan Filed:	IFR
Destination:	Ocala, FL (OCF)	Type of Clearance:	IFR
Departure Time:	11:17 Local	Type of Airspace:	

Airport Information

Airport:	Ocala International OCF	Runway Surface Type:	Asphalt
Airport Elevation:	90 ft msl	Runway Surface Condition:	Dry
Runway Used:	36	IFR Approach:	Visual
Runway Length/Width:	7467 ft / 150 ft	VFR Approach/Landing:	Full stop

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:	1 Serious	Aircraft Fire:	On-ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal, 1 Serious	Latitude, Longitude:	29.149166, -82.22528

Administrative Information

Investigator In Charge (IIC):	Hicks, Ralph
Additional Participating Persons:	Cheryl King; FAA/FSDO; Orlando, FL Jan Smith; Cessna Aircraft Company; Wichita, KS Chris Lang; Continental Motors, Inc.; Mobile, AL Rick Roper; RAM Aircraft; Waco, TX
Original Publish Date:	January 15, 2013
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=82755

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](#).