Aviation Investigation Final Report

Location:	ATHENS, Texas	**Accident Number:**	FTW00FA201
Date & Time:	July 11, 2000, 09:36 Local	**Registration:**	N2244R
Aircraft:	Cessna T210J	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

Witnesses observed the airplane approximately 80 to 100 feet agl in a 'very steep' nose high angle during the takeoff climb. The airplane then banked to the left and impacted the ground in a nose low, left wing low attitude. The airplane was equipped with a STOL kit modification. No anomalies were found with the engine or airframe that would have prevented normal flight operations. Metallurgical examination of the left seat track revealed evidence indicating that the pilot's seat was engaged in the tracks when the airplane impacted the ground.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's inadvertent stall during initial takeoff climb.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings
1. (C) STALL - INADVERTENT - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings
2. TERRAIN CONDITION - GROUND

Factual Information

HISTORY OF FLIGHT

On July 11, 2000, at 0936 central daylight time, a Cessna T210J single-engine airplane, N2244R, was destroyed following a loss of control during takeoff/initial climb from the Athens Municipal Airport, Athens, Texas. The private pilot, sole occupant of the airplane, received fatal injuries. The airplane was owned and operated by the pilot. Visual meteorological conditions prevailed, and a flight plan was not filed for the 14 Code of Federal Regulations Part 91 personal flight. The flight was originating at the time of the accident, with a planned destination of the Addison Airport, Addison, Texas.

During a telephone interview conducted by an NTSB investigator, a witness reported that prior to the accident, he talked to the pilot for approximately 10 minutes, and the pilot stated "he had to go." The witness observed the pilot enter the aircraft and start the engine without a preflight of the aircraft. After he observed the pilot taxi from the parking ramp, the witness returned to the inside of his hanger. The witness stated he did not hear the pilot perform an engine run-up prior to takeoff. He heard the pilot call, "Athens traffic, 44R taking active 170 degrees for takeoff, Athens." The witness stated he heard the engine "go to full power and sounded like the aircraft was accelerating for takeoff." He heard a "wham" and thought the pilot had run the airplane off the runway.

According to another witness, who was located on the airport at the time of the accident, the airplane departed from runway 17, and the initial climb was observed to be at a "very steep angle." In addition, another witness, who was taxiing an aircraft to runway 17, reported that at approximately 80 to 100 feet agl, the landing gear retracted, and the airplane banked to the left and began to lose altitude. Subsequently, the airplane impacted the ground in a nose low, left wing low attitude. The witnesses stated that the engine was operating at the time of the accident.

PERSONNEL INFORMATION

The pilot received his private pilot certificate on April 10, 1987. He received his multi-engine rating on June 16, 1988, and his instrument rating on May 5, 1989. The pilot was issued a second-class medical certificate on February 2, 2000, with the restriction "MUST WEAR CORRECTIVE LENSES." According to the pilot's most recent medical application, he had accumulated 5,800 civilian flight hours.

Numerous attempts to obtain the pilot's logbooks were unsuccessful.

AIRCRAFT INFORMATION

The 1968-model airplane, serial number T210-0394, was issued a standard airworthiness certificate on March 14, 1969. The airplane was registered to the pilot on November 30, 1994. The original logbooks were not available and airframe total time was not determined.

The most recent annual inspection was completed on April 12, 2000, at a tachometer time of 2,892 hours. The engine, a 285-horsepower Continental TSIO-520-CcH(3) (original TSIO-520-H), serial number 178185-R, had accumulated 1,426.35 hours since it was remanufactured on January 30, 1979. The three-bladed McCauley constant-speed propeller, serial number 777496, had accumulated 947.45 hours since overhaul.

The personnel at the maintenance facility in Addison, Texas, responsible for the airplane's maintenance at the time of the accident, provided the most recent aircraft and engine logbooks to the FAA inspector. The inspector's review of the airframe and engine records did not reveal evidence of any anomalies or uncorrected maintenance defects. The inspector found the airframe to be in compliance with applicable airworthiness directives.

The airplane was modified on February 24, 1969, with the installation of a Robertson Short Takeoff and Landing (STOL) kit that included drooped ailerons, contoured wing leading edges, wing stall fences, and aileron centering springs. At the time of the accident, the aircraft displayed evidence of all components aforementioned being installed.

Additionally, the airplane was equipped with an autopilot S-Tec System 40 that was manufactured by S-Tec Corporation. When engaged, the System 40 controls the ailerons only, maneuvering the airplane in the roll axis.

Weight and balance calculations were made using figures from the Cessna T210J Centurion owner's manual and FAA medical information. The airplane was calculated to be within weight and balance limits at the time of the accident.

According to a witness at Dyson Aviation, Athens, Texas, he fueled the airplane with 60.8 gallons of 100LL aviation grade fuel on the morning of the accident. The total usable fuel for the airplane is 89 gallons. A fuel sample from Dyson Aviation, Athens, Texas, was taken, and no anomalies were noted with the 100LL fuel.

METEOROLOGICAL INFORMATION

A witness reported the winds were from the south-southeast at 10-15 knots, sky broken with clouds at 4,000 feet agl, and temperature 80 degrees Fahrenheit.

At 0953, the recorded weather at Tyler Pounds Field, near Tyler, Texas, located approximately 25 nautical miles northwest of the accident site, reported scattered clouds at 1,600 feet agl with a visibility of 10 statute miles, wind from 210 degrees at 12 knots, gusting to 17 knots, a temperature of 80 degrees Fahrenheit, a dew point of 72 degrees Fahrenheit, and an altimeter

setting of 30.06 inches of Mercury. The NTSB investigator calculated the density altitude at 1,834 feet.

AERODROME INFORMATION

The Athens Municipal Airport (F44) is a public airport located approximately 3 miles southeast of Athens, Texas. The non-towered airport has two fixed-based operators with fuel available. The airport features a single 3,988-foot long, by 60-feet wide asphalt runway. Runway 17 has a 5-foot high fence located 200 feet from the threshold, and no additional obstructions. Runway 35 has a 5-foot high fence located 200 feet from the threshold, and no additional obstructions. The airport is not equipped with fire fighting and rescue equipment. The common traffic advisory frequency (CTAF) is 123.0 megahertz.

WRECKAGE DISTRIBUTION

The airplane wreckage was distributed along a measured 32-foot wreckage path, and on a magnetic heading of 040 degrees. The final resting site was located approximately 400 feet east of the runway 17/35 centerline in an open field at latitude North 32 degrees 09.78 minutes; longitude West 095 degrees 49.62 minutes. The initial ground scar contained portions of the left wing tip red navigational light, and the length of the ground scar was consistent with the length of the left wing. The left wing ground scar connected to a crater. The crater was approximately 2 feet in depth, 4 feet 8 inches in width, and 8 feet in length. The crater's size and shape were consistent with the compromised engine cowling and fuselage underside. The 3-blade propeller separated from the crankshaft and was embedded in the dirt adjacent to the crater, and in line with the distribution path. The main wreckage, which consisted of the engine, wings, and cabin came to rest inverted, along the distribution path, approximately 20 feet from the propeller assembly.

The engine remained attached to the airframe. The engine was intact, and the oil sump, intake pipes, and exhaust pipes were crushed. Both crankcase halves were shattered on the lower front exposing the camshaft gear. The gascolator was damaged and the fuel screen was clear of any contaminants.

The propeller blades remained attached to the propeller hub assembly. Propeller blade (S/N K79915YS) was found loose in the hub and was bent toward the cambered side. Rub marks were observed on the non-chamber side of the blade. Propeller blade (S/N K79935YS) was loose in the hub and displayed "S" bending. The blade was bent toward the cambered side. Propeller blade (S/N K80143YS) displayed nicks and gouges on the leading edge of the blade. The blade was bent toward the non-cambered side at the tip.

The cockpit was destroyed with crushing and component separation. The tachometer displayed 1,500 rpm, and a time of 2,927.45 hours; the airspeed indicator displayed 220 knots; and the altimeter displayed 1,200 feet msl. The magneto switch was found in the BOTH position. The throttle and mixture controls were found separated. The fuel selector was

observed to be in the right fuel tank position.

The airplane was equipped with oxygen, and the oxygen tank was found 25 feet from the airplane along the distribution path. The left and right wings were found attached to the fuselage with substantial damage along the leading edges. The 4-foot outboard section of the left wing was crushed aft at a measured 15-degree angle. The wing flap actuator measured 1 1/4", which according to the airframe manufacturer representative, equated to approximately 21-degree flap extension. The integrity of both fuel tanks was compromised; the fuel caps for the left and right wings were found intact and secure. The empennage and tail section were found attached to the fuselage and resting upright on the right wing. Flight control continuity was confirmed. The stall-warning device was removed and tested to be operational. The landing gear was found in the retracted position.

The left seat frame brackets were fractured from the seat frame, and the left seat frame and tracks were retained for further examination. The left seat belt was observed to be latched and cut away from the attach points by emergency response personnel. The airplane did not have shoulder harnesses installed.

MEDICAL AND PATHOLOGICAL INFORMATION

The autopsy was performed by the Office of the Medical Examiner in the County of Dallas, Texas, on July 12, 2000. Toxicological tests performed by the FAA's Civil Aeromedical Institute (CAMI) were negative.

TEST AND RESEARCH

The engine was examined under the supervision of the NTSB investigator-in-charge on July 13, 2000, at the facilities of Air Salvage of Dallas, in Lancaster, Texas. The inspection and disassembly of the engine and related components did not reveal any discrepancies that would have precluded normal operation prior to the accident.

The left (pilot's) seat base, forward left leg from the right seat base, seat tracks for the left seat, and seat tracks for the right seat were examined at the NTSB's Materials Laboratory on March 2, 2001. The seat tracks and legs were fractured at numerous locations and severely deformed. No evidence of crack arrest marks or corrosion was found in any of the fractures. A gouge mark on the left side track for the left seat was observed between the 4th hole and a position approximately 0.3 inches forward of the 4th hole. The location and shape of this gouge mark matched the bottom end of the pin in the forward left seat leg.

The autopilot system was removed from the accident airplane and tested by NTSB investigators and S-Tec personnel on September 8, 2000. It was determined that the system was not engaged at the time of the accident, and was operating in the "READY", or "STANDBY" mode. Additionally, the examination revealed no anomalies with the system.

ADDITIONAL DATA

The wreckage was released to the owner's representative upon completion of the investigation.

Pilot Information

Certificate:	Private	**Age:**	47,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	February 16, 2000
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	5800 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N2244R
Model/Series:	T210J T210J	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	T210-0394
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	April 12, 2000 Annual	**Certified Max Gross Wt.:**	3400 lbs
Time Since Last Inspection:	35 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Continental
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	TSIO-520-C(3)
Registered Owner:	JOHN J. COFFMAN	**Rated Power:**	285 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	TYR ,544 ft msl	**Distance from Accident Site:**	24 Nautical Miles
Observation Time:	09:53 Local	**Direction from Accident Site:**	60°
Lowest Cloud Condition:	Scattered / 1600 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	12 knots / 17 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	210°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	80°C / 72°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(F44)	**Type of Flight Plan Filed:**	None
Destination:	ADDISON (ADS)	**Type of Clearance:**	VFR
Departure Time:	09:36 Local	**Type of Airspace:**	Class E

Airport Information

Airport:	ATHENS MUNICPAL F44	**Runway Surface Type:**	Asphalt
Airport Elevation:	444 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	17	**IFR Approach:**	None
Runway Length/Width:	3988 ft / 60 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	32.199207,-95.850845(est)

Administrative Information

Investigator In Charge (IIC):	Roach, Joyce
Additional Participating Persons:	OSCAR F THOMAS`; DALLAS , TX WILLIAM B WELCH; WICHITA , KS JOHN KENT; SEAGOVILLE , TX
Original Publish Date:	July 26, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=49661