



Aviation Investigation Final Report

Location:	Checotah, Oklahoma	Accident Number:	CEN12LA307
Date & Time:	May 19, 2012, 16:00 Local	Registration:	N158TX
Aircraft:	DIAL DAVID L TITAN TORNADO II	Aircraft Damage:	Substantial
Defining Event:	Loss of control in flight	Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

After takeoff, the airplane leveled off about 100 ft above ground level; accelerated; made a steep, nearly vertical, nose-up climb; and then sharply banked left. The airplane then suddenly stalled and "nose-dived" into the ground. A witness reported that, in the past, he and his neighbors had frequently seen the pilot perform this type of maneuver. One person reported that, in the past, the pilot seemed to enjoy "showing off" for people when he was flying.

Examination of the wreckage revealed no evidence of preimpact mechanical malfunctions or failures. Federal Aviation Administration records showed that the pilot did not hold a valid pilot certificate and that his previously issued student pilot certificate had expired in 2003. Toxicological testing detected low levels of methamphetamine in the pilot's cavity blood and urine, indicating that the pilot took some form of the drug before the crash. However, insufficient evidence was available to determine whether the drug had been medically prescribed or was being used recreationally. Thus, it could not be determined if the pilot's performance was impaired by either the drug, an underlying medical condition, or withdrawal symptoms at the time of the flight.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The noncertificated pilot's loss of airplane control while maneuvering during initial climb, which resulted in an aerodynamic stall and impact with terrain. Contributing to the accident was the pilot's ostentatious display.

Findings

Aircraft	(general) - Not attained/maintained
Personnel issues	Qualification/certification - Pilot
Personnel issues	Aircraft control - Pilot
Personnel issues	Use of medication/drugs - Pilot
Personnel issues	Decision making/judgment - Pilot
Personnel issues	Confidence/reliance on equip - Pilot

Factual Information

History of Flight

Initial climb	Abrupt maneuver
Initial climb	Loss of control in flight (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

HISTORY OF FLIGHT

On May 19, 2012, about 1600 central daylight time, a David L. Dial, Titan Tornado II, single engine land airplane, N158TX, impacted terrain during initial climb after takeoff from a rural private airport near Checotah, Oklahoma. The pilot was fatally injured and the airplane was substantially damaged. The airplane was registered to and operated by a private individual under the provisions of 14 Code of Federal Regulations Part 91, as a personal flight. Day visual meteorological conditions prevailed and a visual flight rules flight plan was not filed. At the time of the accident the airplane was departing for a local flight.

Several witnesses reported the airplane had passed the departure end of the runway after take-off, when it leveled off about 100 feet above ground level, accelerated, and suddenly made a steep, nearly vertical, nose-up climb. The airplane then banked to the left to turn northbound. While in the left bank the right wing tip came up "very high", the airplane banked and turned even tighter and the airplane suddenly "nose-dived" into the ground.

Several witnesses reported that in the past they had frequently seen the pilot fly by fast at a very low altitude then pull the nose up steeply, do a sharp turn and come back flying back in the opposite direction at high speed and low to the ground. Another person who was not a witness reported that he was not surprised that the pilot had an accident because in the past he seemed to enjoy "showing off" for people when he was flying.

PERSONNEL INFORMATION

The pilot, age 42, did not hold a currently valid pilot certificate. He was first issued a Federal Aviation Administration (FAA) student pilot certificate and medical certificate without restriction in 1996, which expired in 1998. He was issued another student pilot certificate on August 17, 2001, which expired on September 1, 2003.

The pilot's logbook and other flight records were not available for examination. His pilot experience could not be determined.

Although the pilot did not hold a current medical certificate he was flying an airplane that met the definition of light sport aircraft. The FAA's medical certificate requirement for operating light sport aircraft requires only a valid driver's license.

AIRCRAFT INFORMATION

The two-seat, high-wing, fixed-gear, amateur built airplane, serial number (s/n) D95EA81C0HK0158, was manufactured in 1998. It was powered by a Rotax 912UL 80-horsepower engine, s/n 4152685, manufactured in 1994. The rear mounted "pusher" engine drove a Warp Drive, model R 3661, ground-adjustable composite propeller.

FAA records show that an airworthiness certificate in experimental category (amateur built) was issued on November 4, 1998. The airplane was registered and an FAA registration certificate was issued to the pilot on August 19, 2008. An actual aircraft weight and balance record was provided to the FAA by the original builder on October 18, 1998, showed that the actual empty weight was then 514 pounds. The kit builder's specifications showed the recommended maximum gross weight as 1,000 pounds.

No aircraft logbooks or maintenance records were available for examination and the flight hours of either the airplane or engine could not be determined.

METEOROLOGICAL INFORMATION

The closest official weather observation station was at Muskogee, Oklahoma (MKO), about 15 nautical miles northeast from the accident site. At 1553 the automated weather observing system at MKO reported wind from 160 degrees at 18 knots, gusting to 24 knots, visibility of 10 miles, clear of clouds, temperature 30 degrees Celsius (C), dew point 13 degrees C, with an altimeter setting of 29.91 inches of Mercury.

COMMUNICATIONS AND RADAR

There was no record of any radio communications or radar contact with the accident airplane.

AIRPORT INFORMATION

The unnamed private landing strip was located about 3 miles west of the center of Checotah, Oklahoma, at an estimated elevation of about 640 feet above mean sea level. A single grass runway 18 – 36 was observed. It was estimated to be about 1,200 feet long by about 50 feet wide and appeared to be maintained as an airport and in regular use.

The south end of the runway was located on the immediate north edge of U. S. Highway 266 which was oriented east-west. Single-phase electric power distribution lines about 30 feet above ground level were on the north side and parallel to the highway. The power lines were marked with orange balls where they crossed the extended runway center line.

There were no runway markings at the airport, no evidence of a wind-sock or other wind indicator, and no navigational aids or air traffic control services associated with the airport. FAA records do not show that the operator had ever registered the airport as required by 14 Code of Federal Regulations Part 157.

WRECKAGE AND IMPACT INFORMATION

An examination of the wreckage at the scene showed the airplane had come to rest upright in a flat grassy field about 1,000 feet southeast of the south end of runway 18 of a private landing strip. The nose

of the fuselage was oriented generally to the south and the wings were oriented generally east-west. There was evidence of a substantial fuel spill at the accident scene, but there was no postimpact fire. Emergency responders reported the pilot had been secured by a 4-point seat belt and shoulder harness safety restraint system.

An impact crater about six inches deep corresponded to impact compression damage on the aircraft nose. Ground scars in front of the wings corresponded to the impact damage on the leading edges of the wings. The left main gear leg was bent aft and the cockpit was impact compressed to the rear.

Both wings displayed leading edge compression damage consistent with a terrain impact of about 40 degrees nose down. Both wings had structural deformation. The impact damage on the left wing tip was slightly more severe than the damage to the right wing tip. The empennage tube displayed "scorpion tail" bending at the point where it exited the rear of the lower fuselage. The elevator was bent and displayed evidence of substantial damage. The vertical fin and rudder did not show obvious evidence of damage. Flight control continuity was confirmed for the ailerons, elevator, and rudder.

Except for the outboard half of one propeller blade found about 50 feet to the west, all portions of the airplane were present at the scene. The propeller hub remained attached to the engine output shaft. Both ailerons and flaps remained attached. The tail surfaces including elevator and rudder remained attached. The needle on the airspeed indicator was observed to be impact frozen at 64 miles per hour. Impact damage prevented examination of any other instrument indications.

The engine, mounted on the top rear of the fuselage, was almost completely separated from its mounts. There was evidence of an old dirty oily mist residue in the engine area and on the tail surfaces and the aft section of the wings. Adequate amounts of engine coolant and engine oil were observed. There was no evidence of engine thermal distress or lubrication distress. The aircraft fuel tank was observed to still contain about a half tank of fuel.

The examination of the wreckage found no evidence of preimpact mechanical malfunctions or failures that would have precluded normal operation.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed on the pilot by the Office of the Chief Medical Examiner in Tulsa, Oklahoma. The autopsy report attributed the pilot's death to "internal injuries due to blunt force trauma," and stated the manner of death to be an "accident".

Forensic toxicology was performed on specimens from the pilot by the FAA, Aeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma.

The toxicology report stated: NO CYANIDE detected in Blood (Cavity); NO ETHANOL detected in Urine.

The following additional findings were noted:

0.059 (ug/ml, ug/g) Amphetamine detected in Urine
0.121 (ug/ml, ug/g) Methamphetamine detected in Urine
0.007 (ug/ml, ug/g) Methamphetamine detected in Blood

The National Transportation Safety Board (NTSB) Chief Medical Officer reviewed the report narrative, the autopsy report, the toxicology results, the pilot's FAA airman medical certification file, and other documents.

The pilot was first issued an FAA student pilot certificate and medical certificate without restriction in 1996. In 2001 he again applied for an FAA student pilot certificate and medical certificate and was initially deferred for a concern about his visual field of view. His vision was subsequently evaluated by an ophthalmologist and found to be essentially normal. The pilot's FAA student certificate and third class medical certificate was then issued without restriction. In 2001, at the time of his medical certificate application the pilot did not report any total flight hours.

According to the autopsy, the cause of death was internal injuries due to blunt force trauma; the manner of death was accident. No significant natural disease was identified by the pathologist.

Toxicology testing by the medical examiner did not identify any drugs or alcohol. Toxicology testing by the FAA's Civil Aeromedical Institute identified 0.007ug/ml of methamphetamine in cavity blood and 0.121ug/ml in urine as well as 0.059ug/ml of its primary metabolite, amphetamine, in urine. No ethanol was detected.

Methamphetamine is a Schedule II controlled substance and is sometimes used medically to treat ADHD, ADD and narcolepsy. It is unknown whether the pilot was being medically treated for any of those conditions because the investigator-in-charge was not able to contact any of the pilot's medical providers or to examine the pilot's medical records.

Pilot Information

Certificate:	None	Age:	42
Airplane Rating(s):	None	Seat Occupied:	Front
Other Aircraft Rating(s):	None	Restraint Used:	4-point
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Sport pilot None	Last FAA Medical Exam:	August 17, 2001
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	(Estimated)		

Aircraft and Owner/Operator Information

Aircraft Make:	DIAL DAVID L	Registration:	N158TX
Model/Series:	TITAN TORNADO II	Aircraft Category:	Airplane
Year of Manufacture:	1998	Amateur Built:	Yes
Airworthiness Certificate:	Experimental (Special)	Serial Number:	D95EA81C0HK0158
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	Unknown	Certified Max Gross Wt.:	1000 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	Rotax
ELT:		Engine Model/Series:	912
Registered Owner:	On file	Rated Power:	80 Horsepower
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KMKO,611 ft msl	Distance from Accident Site:	15 Nautical Miles
Observation Time:	15:53 Local	Direction from Accident Site:	41°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:		Visibility (RVR):	
Wind Speed/Gusts:	18 knots / 24 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	160°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.9 inches Hg	Temperature/Dew Point:	30°C / 13°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Checotah, OK (NONE)	Type of Flight Plan Filed:	None
Destination:	Checotah, OK (NONE)	Type of Clearance:	None
Departure Time:	16:00 Local	Type of Airspace:	Class G

Airport Information

Airport:	Private Airstrip NONE	Runway Surface Type:	Grass/turf
Airport Elevation:	640 ft msl	Runway Surface Condition:	Dry
Runway Used:	18	IFR Approach:	None
Runway Length/Width:	1200 ft / 50 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	35.472499,-95.573333(est)

Administrative Information

Investigator In Charge (IIC):	Latson, Thomas
Additional Participating Persons:	Troy Fields; FAA Oklahoma City FSDO; Oklahoma City, OK Todd A Evans; FAA Oklahoma City FSDO; Oklahoma City, OK Bernhard Kobylík; Austrian Civil Aviation Safety Investigation Autho; Vienna Jordan Paskevich; ROTAX - Rotech Flight Safety, Inc; Vernon
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Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=83690

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