



Aviation Investigation Factual Report

Location:	Winchester, New Hampshire	Accident Number:	ERA17FA241
Date & Time:	July 13, 2017, 11:25 Local	Registration:	N210MX
Aircraft:	EXTRA FLUGZEUGBAU GMBH EA 300/L	Aircraft Damage:	Destroyed
Defining Event:	VFR encounter with IMC	Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

On July 13, 2017, about 1125 eastern daylight time, an Extra Flugzeugbau GMBH EA 300/L, N210MX, was destroyed after it impacted trees and terrain near Winchester, New Hampshire. The private pilot was fatally injured. The airplane was owned by the pilot who operated it under the provisions of Title 14 *Code of Federal Regulations* Part 91. Instrument meteorological conditions prevailed, and no flight plan was filed for the personal flight, which originated about 1030 from Danielson Airport (LZD), Danielson, Connecticut, and was destined for Hartness State Airport (VSF), Springfield, Vermont.

According to the pilot's son, the pilot was flying to VSF to compete in an aerobatic competition being held that weekend. The pilot would typically fly to the competition airport on a Thursday morning in order to practice in the aerobatic box that afternoon. The competition would take place on Friday and Saturday.

A review of radar data provided by the Federal Aviation Administration (FAA) indicated that the airplane was flying on a northerly heading before it made two complete right turns, followed by a larger diameter sweeping right turn, and abrupt and rapid diversions from the en route altitude. The last 3 minutes of data indicated that the airplane climbed from 2,000 ft mean sea level (msl) (about 1,300 ft above ground level) to 6,425 ft msl. The airplane then began to descend, and radar contact was lost at 5,800 ft msl, about 35 miles from the destination airport.

A witness heard the airplane and went into a field to watch it. He described the airplane performing "aerobatics" in a very "low cloud ceiling." Several minutes after he began watching the airplane, it descended "so low" that he and his son began waving at it. Then, about 1125, the airplane "went into a high vertical climb," and climbed to an altitude at which the witness could barely hear it. The witness then heard the airplane descending. He watched it descend through the bottom of the clouds and continue "straight down," then heard the sound of impact. He stated that the time between the airplane's descent out of the clouds and impact was about "2 to 3 seconds." Another witness reported hearing the airplane's engine before the accident and reported that it sounded like "it was racing," and that the "rpms were high."

Pilot Information

Certificate:	Private	Age:	65,Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Rear
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:	Class 3 With waivers/limitations	Last FAA Medical Exam:	October 19, 2016
Occupational Pilot:	No	Last Flight Review or Equivalent:	September 16, 2015
Flight Time:	2810 hours (Total, all aircraft)		

According to FAA records, the pilot held a private pilot certificate with a rating for airplane single-engine land. The pilot was issued a third-class FAA medical certificate on October 19, 2016, with the limitation that he must wear corrective lenses. At that time, he reported 2,810 total hours of flight experience and 108 hours during the previous 6 months. The pilot did not hold an instrument rating.

Aircraft and Owner/Operator Information

Aircraft Make:	EXTRA FLUGZEUGBAU GMBH	Registration:	N210MX
Model/Series:	EA 300/L	Aircraft Category:	Airplane
Year of Manufacture:	2005	Amateur Built:	
Airworthiness Certificate:	Aerobatic; Normal	Serial Number:	1210
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	April 18, 2017 Annual	Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	956.57 Hrs as of last inspection	Engine Manufacturer:	LYCOMING
ELT:	C91A installed, not activated	Engine Model/Series:	AEIO-540-L1B5
Registered Owner:	On file	Rated Power:	300 Horsepower
Operator:	On file	Operating Certificate(s) Held:	None

According to FAA records, the two-place monoplane was manufactured in 2005 and was registered to the pilot in 2006. It was equipped with a Lycoming AEIO-540-L1B5 series, 300-horsepower engine that drove a four-bladed, constant speed, MT-Propeller. According to airplane maintenance records, an annual inspection was completed on April 18, 2017, at 956.57 total aircraft hours.

A placard located in the cockpit stated, "This airplane is certificated for VFR day operation."

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	Condition of Light:	Day
Observation Facility, Elevation:	ORE, 555 ft msl	Distance from Accident Site:	11 Nautical Miles
Observation Time:	10:52 Local	Direction from Accident Site:	160°
Lowest Cloud Condition:	Thin Overcast / 800 ft AGL	Visibility	10 miles
Lowest Ceiling:	Overcast / 800 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	7 knots / None	Turbulence Type Forecast/Actual:	/
Wind Direction:	40°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	19°C / 18°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Danielson, CT (LZD)	Type of Flight Plan Filed:	None
Destination:	SPRINGFIELD, VT (VSF)	Type of Clearance:	None
Departure Time:	10:30 Local	Type of Airspace:	

At 1052, the recorded weather observation at Orange Municipal Airport (ORE), Orange, Massachusetts, about 11 miles south of the accident site, included wind from 040° at 7 knots, visibility 10 miles, overcast clouds 800 ft above ground level (agl), temperature 19°C, dew point 18°C; and an altimeter setting of 30.00 inches of mercury.

At 1056, the recorded weather observation at Dillant-Hopkins Airport (EEN), Keene, New Hampshire, about 11 miles northeast of the accident location, included wind from 010° at 4 knots, 10 miles visibility, an overcast ceiling at 1,200 ft agl, temperature 16°C, dew point 14°C, and altimeter setting of 30.02 inches of mercury.

According to a NTSB Senior Meteorologist, the observations from ORE and EEN surrounding the accident time indicated instrument flight rules (IFR) to marginal visual flight rules (MVFR) ceiling conditions. With a northeast surface wind east of the Appalachian Mountains and a surface high pressure center in place over the northeastern United States, cold air damming (CAD) conditions were likely. The self-reinforcing CAD allowed for continued IFR ceilings north of the warm front at the accident site at the accident time.

In addition, a review of visible and infrared data from the Geostationary Operational Environmental Satellite number 13 (GOES-13) indicated abundant cloud cover above the accident site at the accident time. The cloud cover increased dramatically along the airplane's northerly route of flight. Infrared imagery indicated higher cloud tops located northeast through west of the accident site, with the highest cloud tops over New York. Based on the brightness temperatures above the accident site and the vertical temperature profile provided by the upper air data sounding, the approximate cloud-top heights over the accident site were 22,000 ft at 1115.

A search of official weather briefing sources revealed that the pilot did not contact Leidos or Direct User Access Terminal Service (DUATS) for weather information. An archive search of ForeFlight data

revealed that the pilot did not gather weather information from ForeFlight before or during the accident flight. It is unknown if the pilot checked or received additional weather information before or during the accident flight.

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:	42.739444,-72.386108

Examination of the accident site revealed a strong odor of fuel. All major components of the airplane were accounted for at the scene. The main wreckage came to rest oriented on a 025° heading in a heavily wooded area at an elevation of 680 ft msl. Impact damage was observed on a 100-ft-tall tree that was consistent with the airplane impacting the tree before impacting the ground about 25 ft beyond the tree strike. There were a few branches between the tree strike and the main wreckage location that exhibited 45° cuts. In addition, chips of white paint were lodged in the wood. The main wreckage came to rest about 15 ft beyond the initial impact crater against two trees. The initial impact crater was about 4 ft deep and about 6 ft in diameter. Linear ground scars consistent with the length and dimension of the leading edge of each wing were visible on either side of the impact crater.

The cockpit was destroyed and fragmented by impact forces. The cockpit instrument panel was destroyed, and the flight and performance instruments were separated. No useful information was obtained from the instruments. The attitude indicator was not located and the turn coordinator face was destroyed. Flight control continuity was obtained from all flight control surfaces to the cockpit through breaks and fractures consistent with overload. The right wing was impact-separated and fractured. A majority of the pieces were located forward of the impact crater. The left wing was impact-separated and fractured. Several sections of the left wing and aileron were located aft of the initial impact crater.

The empennage remained attached to the fuselage. The left horizontal stabilizer and elevator remained attached to the empennage. The rudder remained attached to the vertical stabilizer and displayed impact damage along about 8 inches of its upper section. The right horizontal stabilizer was impact-separated but remained attached to the empennage by control cables. The right elevator was impact-separated and was located just aft of the right horizontal stabilizer. The elevator trim tab was impact-separated but remained attached to the right elevator through cables.

All four wooden propeller blades were impact-separated and fragmented. Several pieces of the propeller blades were located in the initial impact crater and a few pieces were located about 25 ft from the initial impact crater. The propeller hub remained attached to the crankshaft flange.

The engine came to rest upright, facing opposite the direction of travel. Three of the four engine mounts were impact-separated from the crankcase. Impact fractures were noted throughout the crankcase and

sections were missing on the Nos. 1, 3, and 5-cylinder side. Cylinder No. 1 was impact-separated from the engine. Cylinder Nos. 3 and 5 were impact-separated from the crankcase but remained attached through the piston and connecting rods. The No. 2 cylinder head was impact-separated, and the Nos. 4 and 6 cylinders remained intact and attached to the crankcase. All cylinders exhibited impact damage on the cooling fins. The Nos. 3, 5, and 2 pistons were visible, and carbon deposits were noted on the piston faces. The crankshaft would not rotate; however, no fractures or thermal discoloration were noted. The camshaft remained intact and no anomalies were noted with the visible camshaft lobes. No thermal discoloration or damage was noted inside the engine crankcase.

A JPI EDM 700 engine monitor was retained and sent to the NTSB Recorders Laboratory for data download. The data indicated that the engine was operating throughout the flight without anomaly.

Medical and Pathological Information

The State of New Hampshire Office of the Chief Medical Examiner, Concord, New Hampshire performed the autopsy on the pilot. The autopsy report indicated that the pilot died as a result of multiple blunt impact injuries.

The FAA's Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma, performed toxicological testing of the pilot. Fluid and tissue specimens from the pilot tested negative for carbon monoxide. The test indicated 105 mg/dL of ethanol in the liver, but no ethanol in the kidney, which was consistent with postmortem production. The testing identified 0.2965 ug/ml of tetrahydrocannabinol (THC) in the lung and 0.366 ug/ml of THC in the kidney. In addition, 0.4511 ug/ml of 11-carboxytetrahydrocannabinol (THC-COOH) was detected in the kidney and 0.0766 ug/ml THC-OOH was detected in the lung.

THC is the primary psychoactive compound in marijuana and THC-COOH is the primary non-active metabolite of THC in liver tissue.

Additional Information

FAA Advisory Circular (AC) 60-4A, "Pilot's Spatial Disorientation," states, in part:

The attitude of an aircraft is generally determined by reference to the natural horizon or other visual references with the surface. If neither horizon nor surface references exist, the attitude of an aircraft must be determined by artificial means from the flight instruments. Sight, supported by other senses, allows the pilot to maintain orientation. However, during periods of low visibility, the supporting senses sometimes conflict with what is seen. When this happens, a pilot is particularly vulnerable to disorientation. The degree of disorientation may vary considerably with individual pilots. Spatial

disorientation to a pilot means simply the inability to tell which way is "up."

The AC notes that a disoriented pilot may place an aircraft in a dangerous attitude, and recommends that pilots, "not attempt visual flight rules flight when there is a possibility of getting trapped in deteriorating weather."

Get-There-Itis

According to FAA Advisory Circular AC 60-22, Aeronautical Decision Making, "pilots, particularly those with considerable experience, as a rule always try to complete a flight as planned, please passengers, meet schedules, and generally demonstrate that they have 'the right stuff.'"

One of the common behavioral traps identified was "Get-There-Itis." According to the AC, "common among pilots, [get-there-itis] clouds the vision and impairs judgment by causing a fixation on the original goal or destination combined with a total disregard for any alternative course of action."

Get-There-Itis is also known as hurry syndrome, plan continuation, or goal fixation.

Administrative Information

Investigator In Charge (IIC):	Kemner, Heidi
Additional Participating Persons:	Daniel Kelman; FAA/FSDO; Portland, ME
Report Date:	October 29, 2018
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=95567

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).