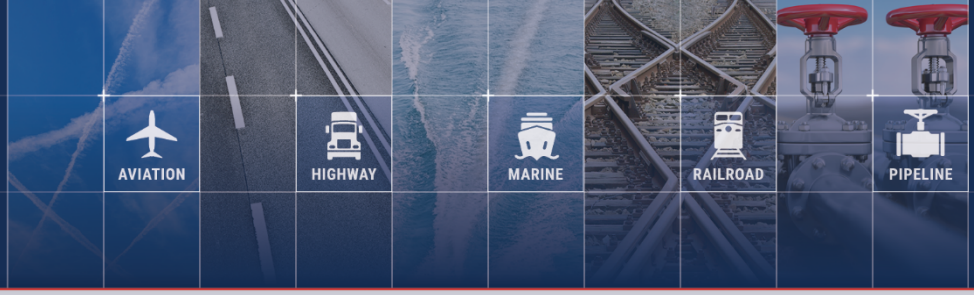

Aviation Investigation Final Report

Location:	PIPE CREEK, Texas	**Accident Number:**	FTW96LA320
Date & Time:	July 27, 1996, 12:15 Local	**Registration:**	N485D
Aircraft:	QUALLINE HATZ CB-1	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

A private pilot and an airline transport pilot (ATP) took off on a flight in a homebuilt airplane that had only about 3 hours of flight time. According to witnesses, the ATP had made the initial test flights of the airplane, but the owner was the pilot-in-command (PIC) on this flight. Witnesses at the airport saw the homebuilt airplane in a landing approach, heard engine power increase, and watched the airplane climb out to the northeast. A witness, who was driving his vehicle on a road about 1 mile north of the airport observed, the airplane impact the road 'nose first' and then it began burning. The investigation did not determine which pilot was flying at the time of the accident. According to a nurse, who cared for the private pilot during a postaccident air ambulance ride, he said 'I was going through 300 feet, and I lost the elevator, and we came straight down.' Postaccident examination of the airplane, revealed continuity to all flight controls. Examination of the engine revealed no preimpact mechanical discrepancy. Comparison of the airplane's estimated weight and balance at the time of the accident to figures provided by an individual who had built several Hatz airplanes indicated the airplane was loaded within 'normal' limits. There was insufficient evidence available to determine the reason for the reported loss of elevator control.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: loss of aircraft control in flight for undetermined reason(s).

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: MANEUVERING

Findings
1. (C) REASON FOR OCCURRENCE UNDETERMINED

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

Factual Information

HISTORY OF FLIGHT

On July 27, 1996, approximately 1215 central daylight time, a homebuilt Oualline Hatz CB-1 airplane, N485D, registered to and operated by a private owner under Title 14 CFR Part 91, was destroyed when it impacted the ground in an uncontrolled descent near Pipe Creek, Texas. Both occupants of the airplane, a private pilot and an airline transport rated pilot, were fatally injured. Visual meteorological conditions prevailed and a flight plan was not filed for the personal flight. The airplane departed Kerrville, Texas, approximately 1145, and the intended destination was Freedom Springs Ranch Airport in Pipe Creek.

Approximately 0845 on the day of the accident, witnesses observed the airplane depart from Freedom Springs Ranch Airport. The witnesses reported that the owner of the airplane, a private pilot, was occupying the rear seat, and an airline transport rated pilot, who owned a similar Hatz homebuilt airplane, was occupying the front seat. According to one of the witnesses, the owner was the "pilot-in-command."

The airplane landed at the Kerrville Municipal Airport in Kerrville, Texas, and was serviced with 7.0 gallons of avgas at 0934. Kerrville line service personnel reported that the airplane then began doing touch and go landings on runway 12. They further reported that while the airplane was in the traffic pattern, they received two phone calls from a "disgruntled" sounding man who stated that there was a white biplane "flying too low over his house."

According to one line service person, the airplane, "which was using a right hand pattern, while all other traffic at Kerrville were using a left hand pattern, turned final for [runway] 12 blatantly cutting a Cessna 150 off." The passenger in the Cessna 150 reported "seeing N485D flying at an altitude of no more than 200 to 300 feet AGL." He further reported observing the airplane "making what appeared to be a spray run in an area northwest of the airport" at an altitude "low enough that it had to pull up to clear trees at the end of the field. It then made a right turn to final on runway 12."

Following the incident with the Cessna 150, Kerrville line service personnel responded to a radio call reporting that "there was a white airplane on the 30 end of the runway who might need some help." When they arrived at the end of the runway, they found the "younger man" (the airline transport rated pilot) attempting to hand prop the airplane. He told them that the owner (the private pilot) had shut down the engine to check the oil and then could not get it re-started because of a dead battery. The line service personnel reported that while they were towing the airplane back to the ramp, the younger man rode on the tug and conversed with them. He told them that he "owned his own Hatz airplane and had a lot of time in one" and was helping the owner "learn how to better fly the plane." The line service personnel serviced

the airplane with 6 gallons of avgas and used an alternate power source to assist with a re-start. The time listed on the fuel receipt indicated that the refueling was done at 1137.

Witnesses at Freedom Springs Ranch Airport reported that late in the morning, they saw N485D make an approach to runway 05. One witness noted that the airplane's altitude was "a little high over the end of the runway," then he heard "full throttle for a fly by to the east and out of sight." Another witness "heard them coming in to land, and heard them hit, and a burst of power, and again the flat climb out to the north."

A witness driving west on Highway 46 (an east-west road located north of the airport) observed what he called a "stunt plane" about 1 mile ahead of him coming towards him from the west. He reported the airplane was moving "erratically up and then down." The witness looked away, and when he looked back, he observed a plume of smoke coming up from the ground. Another witness driving west on Highway 46 initially observed the airplane on the south side of the highway in a right bank turning towards the east "like it wanted to land on the highway." He lost sight of the airplane behind trees, and then looked in his rear view mirror and saw it impact the highway "nose first" and catch fire.

The owner was air-lifted to a hospital. During the flight, the nurse asked him what had happened and he responded "I lost the elevator." When the nurse asked what altitude this occurred at, he said "I was going through 300 feet, and I lost the elevator, and we came straight down."

PERSONNEL INFORMATION

It was not possible to determine which pilot was flying at the time of the accident. Neither of the pilot's personal logbooks were located during the investigation. According to Federal Aviation Administration (FAA) records, the private pilot reported 900 hours total flight time on February 2, 1996, at the time of his third class medical examination. The airline transport rated pilot's most recent first class medical examination was on July 17, 1995, and at that time, he reported having 20,100 hours total flight time, 450 hours of which were in the last 6 months. He also held an expired flight instructor certificate which was issued on July 2, 1968, and a current ground instructor certificate.

AIRCRAFT INFORMATION

The homebuilt airplane was constructed from a set of plans sold by the Dudley R. Kelly Company, Versailles, Kentucky. An experimental airworthiness certificate was issued by the FAA for the airplane on June 25, 1996. The certificate indicated that the private pilot/owner was the builder of the airplane. According to witnesses, the airline transport rated pilot made the initial test flights of the airplane. One of the witnesses estimated that at the time of the accident, the airplane had accumulated about 3 hours of flight time.

Two witnesses reported that during conversations they had with the airline transport rated

pilot, he stated that the airplane was "nose heavy" and that "he had to use power to flare for landing." On the morning of the accident, the airline transport rated pilot commented to the Kerrville line service personnel that the airplane "had been built by 3 different individuals" and "the tail section was not that of a Hatz aircraft."

The airplane's gross weight at the time of the accident was calculated at 1,453 pounds with a center of gravity of 69.5 inches. The calculation was performed by the NTSB investigator-in-charge using measurements found on a weighing record for the airplane dated February 7, 1996. The record indicated that the maximum gross weight of the airplane was 1,500 pounds; no center of gravity range was listed. The weight and balance information provided by the Dudley R. Kelly Company with the plans did not contain a center of gravity range; however, it did indicate that the center of lift for the prototype airplane was 73.75 inches. An individual who had built several Hatz airplanes told the investigator-in-charge that he considered 65 to 72 inches to be a "normal" center of gravity range.

WRECKAGE AND IMPACT INFORMATION

An on scene examination was performed by an FAA inspector on July 27, 1996. The inspector reported that the airplane impacted on the south edge of the center line of Highway 46, slid approximately 26 feet east, and came to rest in a ditch. The propeller separated from the engine crankshaft flange and came to rest approximately 31 feet to the west of the airplane. Three propeller strike signatures spaced approximately 15" apart were observed in the asphalt road at the initial impact point. The propeller spinner was crushed aft and exhibited rotational scoring. Both propeller blades displayed chordwise scratches and leading edge damage.

According to the FAA inspector, "except for major portions of the fuselage tubular frame, remnants of a battery and instrument housings," the airframe was consumed by a post-impact fire. The inspector further reported that "the flight controls were examined for cable run continuity up to the pedals and control stick, at both forward and aft seat locations. The ailerons, rudder and elevator control bellcrank, horn and other pivotal control points showed no evidence of damage, impingement, or structural detachment."

On August 12, 1996, the engine was examined by the FAA inspector and a representative from the engine manufacturer. The manufacturer's representative reported that the magnetos, wiring harness, carburetor, and engine driven fuel pump were destroyed by fire, and the spark plugs were "unremarkable." After the wreckage was released by the NTSB, a representative of the owner removed the cylinders from the crankcase and "found valves in place, pistons and rings in perfect condition. Connecting rods connected and piston pins in place and free."

MEDICAL INFORMATION

Autopsies and toxicological testing of both pilots were ordered and performed. The toxicology reports for both pilots were negative. The autopsy of the airline transport rated pilot was performed by Elizabeth Peacock, M.D., Deputy Medical Examiner, at the Travis County Morgue,

Austin, Texas. The autopsy of the private pilot was performed by the U.S. Army Institute of Surgical Research, Brooke Army Medical Center, at Fort Sam Houston, Texas.

ADDITIONAL INFORMATION

The wreckage was released to the owner's representative on August 12, 1996, and the airframe data plate was returned to the owner's representative on September 9, 1996.

Pilot Information

Certificate:	Private	**Age:**	62,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Rear
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	February 2, 1996
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	900 hours (Total, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	QUALLINE	**Registration:**	N485D
Model/Series:	HATZ CB-1 HATZ CB-1	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	485
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	Unknown	**Certified Max Gross Wt.:**	1500 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	3 Hrs	**Engine Manufacturer:**	Lycoming
ELT:		**Engine Model/Series:**	O-320-E2D
Registered Owner:	JACK E OUALLINE	**Rated Power:**	150 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:	SAT ,809 ft msl	**Distance from Accident Site:**	23 Nautical Miles
Observation Time:	12:48 Local	**Direction from Accident Site:**	110°
Lowest Cloud Condition:	Scattered / 4300 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	110°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	31°C / 19°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	KERRVILLE , TX (ERV)	**Type of Flight Plan Filed:**	None
Destination:	(TA66)	**Type of Clearance:**	None
Departure Time:	11:45 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	FREEDOM SPRINGS RANCH TA66	**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	2 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	29.70948,-98.93003(est)

Administrative Information

Investigator In Charge (IIC):	Snyder, Georgia
Additional Participating Persons:	RALPH H RODRIGUEZ; SAN ANTONIO , TX GERALD R JAMES; WILLIAMSPORT , PA
Original Publish Date:	April 29, 1997
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=19923