



National Transportation Safety Board Aviation Accident Final Report

Location:	Lake Point, UT	Accident Number:	DEN01FA041
Date & Time:	01/14/2001, 1729 MST	Registration:	N616F
Aircraft:	Beech 65-A90	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	9 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The pilot and eight parachutists were returning from a skydive meet. The pilot had obtained a weather briefing, which advised of instrument meteorological conditions at the destination, and filed a VFR flight plan, but it was never activated. Witnesses heard, but could not see, a twin engine turboprop pass over the airport, heading north out over the Great Salt Lake. They described the weather conditions as being a low ceiling with 1/4-mile visibility, light snow, haze, and fog. They said it was almost dark. The airplane impacted the water approximately 1/2-mile off shore. It had been stripped of all avionics except for one transceiver and a hand-held GPS receiver. One member of the skydive club, who had flown with the pilot, said he had previously encountered poor weather conditions and descended over the Great Salt Lake until he could see the ground, then proceeded to the airport. Another member related a similar experience, but said they descended over the Great Salt Lake in the vicinity of the accident site. The pilot was able to navigate in deteriorating weather conditions to Tooele Airport, using various landmarks. Examination of the airframe, engines, and propellers did not reveal evidence of any anomalies that would have precluded normal operation.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's exercise of poor judgment and his failure to maintain a safe altitude/clearance above the water. Contributing factors were the weather conditions that included low ceiling and visibility obscured by snow and mist, an inadequately equipped airplane for flying in instrument meteorological conditions, and the pilot's overconfidence in his personal ability in that he had reportedly done this on two previous occasions.

Findings

Occurrence #1: IN FLIGHT ENCOUNTER WITH WEATHER

Phase of Operation: CRUISE

Findings

1. (F) FLIGHT INTO KNOWN ADVERSE WEATHER - INTENTIONAL - PILOT IN COMMAND
2. (F) WEATHER CONDITION - LOW CEILING
3. (F) WEATHER CONDITION - OBSCURATION
4. (F) WEATHER CONDITION - SNOW
5. (F) WEATHER CONDITION - DRIZZLE/MIST

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: DESCENT

Findings

6. (C) JUDGMENT - POOR - PILOT IN COMMAND
7. (F) FLIGHT/NAVIGATION INSTRUMENT(S) - INADEQUATE
8. (F) OVERCONFIDENCE IN PERSONAL ABILITY - PILOT IN COMMAND
9. (C) ALTITUDE/CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND
10. TERRAIN CONDITION - WATER

Factual Information

HISTORY OF FLIGHT

On January 14, 2001, at 1729 mountain standard time, a Beech 65-A90, N616F, owned by Flanagan Enterprises (Nevada), Inc., and operated by a private individual doing business as Skydive Salt Lake, was destroyed when it collided with water while descending over the Great Salt Lake near Lake Point, Utah. The airline transport certificated pilot and eight passengers were fatally injured. Instrument meteorological conditions prevailed, and a VFR (visual flight rules) flight plan had been filed but was never activated. The personal flight was being conducted under 14 CFR (Code of Federal Regulations) Part 91, and originated at Mesquite, Nevada, approximately 1615.

According to Skydive Salt Lake employees, the pilot and passengers had flown to Mesquite on January 12 to sky dive, and were returning to Tooele, Utah, when the accident occurred.

The pilot telephoned the Reno, Nevada, Flight Service Station (FSS) at 1526 and filed a VFR flight plan. The route of flight was from Mesquite direct to the Mormon Mesa VORTAC (Very high frequency Omnidirectional Radio range TACTical air navigation), then via V (Victor airway) 21 to the Fairfield VORTAC, then direct to the Tooele Airport. Using a true airspeed of 214 knots at 13,500 feet msl (mean sea level), the pilot estimated the time en route would be 1 hour, 23 minutes, and indicated there was 5 hours of fuel on board. He then requested and was given a standard weather briefing and was advised of an AIRMET (Airman's Meteorological Information) in effect from about Milford, Utah, north "for (occasional) moderate rime or mixed icing in the clouds and in (the) precipitation below one six thousand feet for some mountain obscurement in that area." The briefer also advised him of an AIRMET "for IFR (instrument flight rules) conditions...goes from the south edge of the Great Salt Lake due westward over to Lovelock, Nevada, and then north of that line, (so there) could be some IFR conditions in there right now." The briefer then asked, "You can make an IFR (instrument flight rules) approach, I presume?" The pilot answered, "Yes, sir." The briefer then added, "You need to," and gave the current Salt Lake City weather observation, which was below VFR minimums. The briefing terminated at 1533.

According to the fixed base operator (FBO) at Mesquite, the airplane took off about 1615. There were no radio communications with the flight, and the pilot never activated the flight plan with FSS. Radar data retrieved from the Salt Lake City Air Route Traffic Control Center (ARTCC) indicates the airplane did not follow the filed route of flight, but flew direct from Mesquite to Tooele. According to the sheriff's department, the Tooele Valley Airport's weekend manager and the husband of one of the passengers were standing outside the airport office and heard an airplane pass overhead. From the sounds of the engines, they said it was a twin engine turboprop and they assumed it was N616F. They said the engine noise diminished as the airplane flew north and never returned. Radar data indicates a VFR target passed over the airport at 1727:35 at an altitude of 7,700 feet msl (above mean sea level), or approximately 3,400 feet above the ground. It was tracked to a point about 5 miles north of the airport, where it began a descending left turn. Between 1728:42 and 1729:42 (the last altitude return), the airplane lost 2,000 feet. The last radar contact was at 1729:47. An ALNOT (alert notice) was issued at 1919, the Tooele County Sheriff's Office was notified, and a search was initiated. The first body was located at 0045 the following morning. Debris and additional bodies were soon found washed ashore.

The accident occurred during the hours of dusk at a location of 40 degrees, 40.798' (40.33') north latitude, and 112 degrees, 21.149 (23') minutes west longitude. According to the Park Service, water temperature at the time of the accident was 20 degrees F. High salinity precluded the water from freezing.

CREW INFORMATION

The pilot held an airline transport pilot certificate with airplane multiengine land rating and a Swearingen SA-227 type rating, and commercial privileges in airplanes single-engine land, dated August 8, 1985. He also held a first class airman medical certificate, dated July 31, 2000, with no restrictions or limitations.

His most recent logbook washed ashore and was recovered by rescuers. The logbook contained entries from September 15, 1996, to December 23, 2000. The following flight times were recorded by aircraft make/model:

Cessna 210 - 5.7 hours

DeHaviland DHC-6 - 30.3 hours

Beech 18 - 337.2 hours

Beech 90 - 321.1 hours

Beech 99 - 38.5 hours

Boeing 737 (simulator) - 15.0 hours

As of the last logbook entry, the following flight time totals were noted:

Total time - 5,149.2 hours

Pilot in command - 4,386.5 hours

Second in Command - 747.7 hours

Airplane Single Engine Land - 1,901.3 hours

Airplane Multiengine Land - 3,232.9 hours

Turbine - 2,251.9 hours

Cross-Country - 2,275.7 hours

Night - 838.8 hours

Actual Instruments - 366.6 hours

An entry was made in the pilot's logbook, dated January 10, 1999, indicating he had received a biennial flight review (BFR) in a Boeing 737 simulator. According to the Federal Aviation Administration (FAA), the pilot was not rated in the Boeing 737, therefore the BFR was not valid under 14 CFR 61.56(i)(3). Further review of the logbook indicated the pilot had logged 1.2 hours of night flying time in the previous 90 days, but did not indicate the number of landings he had made. FAA could not determine whether he satisfied the requirements of 14 CFR 61.57(b). In addition, the pilot had not logged any instrument flying time in the previous 6 calendar months. According to FAA, he was not qualified to serve as pilot in command of a civil aircraft carrying passengers in instrument meteorological conditions [14 CFR 61.57(c)].

AIRCRAFT INFORMATION

N616F, a model 65-A90 (s/n LJ-165), was manufactured by the Beech Aircraft Corporation in 1966. It was equipped with two Pratt & Whitney PT6A-20 engines (s/n PCE20514, left; PCE 21398, right), each rated at 750 shaft horsepower, and two Hartzell 3-blade, all-metal, controllable pitch, reversible, and full-feathering propellers (m/n HC-B3TN-3B). According to the maintenance records, the airplane's wing spar had been modified with a failsafe strap modification. The owner said the airplane had been stripped for parachute jumping activities and was equipped for VFR flight only. The only avionics on board were a transceiver and a hand-held GPS (Global Positioning System) receiver .

METEOROLOGICAL INFORMATION

One witness, an instrument rated private pilot, was about 3 miles northeast of the Tooele Airport when he heard an "unusually loud sound...of a turboprop [that] passed overhead...[flying] from south to north." He estimated the airplane was 1/2-mile west of his position, "at pattern altitude or lower...500 feet agl on the runway centerline course." He said there was "no Doppler shift. Instead, as the sound passed, the pitch of the prop continued to rise. It sounded as if they were in a dive." He described the weather conditions as an indefinite ceiling, 1/4-mile visibility in haze/fog. It was "almost dark" and snowing. These observations were approximately the same as those given the Tooele County Sheriff's Department by the airport manager and the passenger's husband.

The nearest official weather observation station was Salt Lake City International Airport (SLC), located 35 miles northeast of the accident site. The following observation was recorded one minute after the accident: Wind, 330 degrees at 6 knots; visibility, 0.5 miles, light snow, mist; ceiling, 500 feet broken, 900 feet overcast; temperature, -1 degree C; dew point, -1 degree C; altimeter setting, 30.13 inches of mercury; remarks: surface visibility 1mile.

WRECKAGE AND IMPACT INFORMATION

The wreckage was located about 1/2-mile off shore and about 2-1/2 miles north of the Tooele Airport, on the extended runway centerline, in 5-foot deep water. A barge, equipped with a crane and sonar, and several divers were employed to retrieve the wreckage. Approximately 85 per cent of the wreckage was recovered. Retrieval operations began 3 days after the accident and were completed 3 days later. The debris field was approximately 175 feet in length and 200 feet wide, and was oriented on a magnetic heading of 171 degrees. Water depth was 5 to 7 feet, and the bottom was hard and sandy. As wreckage was brought aboard the barge, it was washed with fresh water to reduce the corrosive effects of the salt water and given an initial examination. When the wreckage was finally brought ashore, it was given a more thorough washing and laid out for a more detailed examination.

The upper structure of the fuselage was peeled back where the sidewall joined the main cabin floor. Only a small portion of the cabin floor was recovered. Since the cabin seats had been removed, passengers sat on vinyl covered cushions with the seatbelts mounted to the seat tracks. None of the seatbelts, including the pilot's, were found fastened. The main cabin door had been removed and replaced by a sliding jump door. Above the doorframe were two mounting fixtures for an exterior handhold. The handhold was not recovered. The cockpit area, including the pilot's seat and most of the instrument panel, was recovered.

The left wing was fragmented. The upper and lower wing attach bolts and fittings remained attached to the wing center section. The center section extended from left wing station (W.S.) 68 to right W.S. 28.975, and included a portion of the main cabin floor. The left main landing

gear was partially separated from the nacelle; the actuator was in the retracted position. The left aileron trim tab measured 1.1 inches, and the left inboard and outboard flap actuators measured 2.2 and 1.9 inches, respectively. According to the Raytheon Aircraft Corporation, these measurements equate to 7.5 degrees tab up, and 1.5 degrees and 3.5 degrees flaps down, respectively. The left engine, with portions of the nacelle still attached, had separated from the wing. The reduction gearbox had broken off at the "A" flange. The propeller separated from the engine. The blades exhibited "S" bending, and were loose in their respective blade clamps.

A portion of the wing center section, between right W.S. 28.975 and 99.61, was recovered with the intact right wing. The right main landing gear was retracted. Both inboard and outboard flaps were retracted. Left and right aileron control continuity was established from the wings to the aileron quadrant assembly in the wing center section. The right engine, with propeller still attached, separated from the wing. The blades exhibited "S" bending and were bent aft.

Both horizontal stabilizers, with attached elevators and counterweights, remained attached to the empennage. The vertical stabilizer (with counterweight) also remained attached to the empennage, but the rudder had separated. The entire tail assembly sustained relatively little damage. Elevator control continuity was established to the cockpit area. Both elevator trim actuators measured 0.3 inches, and the clevises were against the actuator housings. The rudder trim measured 9.1 inches. According to the Raytheon Aircraft Corporation, this equates to an over-travel tab down setting and about 7.5 degrees left tab deflection, respectively.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed on the pilot (R200100065) by the Utah State Medical Examiner's Office. In addition, a toxicology screen (#200100010001) was performed by FAA's Civil Aeromedical Institute (CAMI), and disclosed the presence of ephedrine, pseudoephedrine, and phenylpropanolamine in the pilot's blood and liver. Quantification was not given. According to toxicologists, pseudoephedrine (Sudafed) is an over-the-counter decongestant, and ephedrine (Primatene) is an over-the-counter asthma medication. Both ephedrine and pseudoephedrine are often found in the herbal supplement, "Ma Huang" (ephedra), an "energy booster." Phenylpropanolamine, a metabolite of ephedrine and pseudoephedrine, is also an over-the-counter decongestant. Ephedrine, pseudoephedrine, and phenylpropanolamine are often utilized specifically for their stimulant effects, and are not known to cause impairment.

Gross examinations were performed on the remaining decedents. All deaths were attributed to "blunt force injuries and perimortem cold water immersion." Five passengers (R200100067, 200100070, 200100071, 200100072, 200100073) had fluid in their lungs. Three passengers tested positive for ethyl alcohol: R200100068 had 0.07 g/dl in heart blood and 0.06 g/dl in vitreous; R200100069 had 0.03 g/dl in chest fluid; R200100073 had 0.05 g/dl in blood and 0.06 g/dl in vitreous. Passenger R200100067 tested positive for ibuprofen.

TESTS AND RESEARCH

Radar data indicates the airplane did not fly the filed route, but rather flew directly to Tooele at altitudes between 4,800 and 15,400 feet. The airplane passed over the Tooele Airport and flew outbound over the Great Salt Lake, aligned with the NDB (nondirectional beacon) or GPS runway 16 published outbound course, then entered a descending left turn. Radar contact was lost at 4,800 feet msl. The Great Salt Lake is 4,200 feet above sea level.

Both engines were disassembled and inspected under the supervision of Transport Canada on March 20-21 at Pratt & Whitney in Montreal, Canada. Pratt & Whitney's report stated, "Both

the left and right engines displayed contact signatures to their internal components characteristic of the engines operating in a middle to low power range at the time of impact. The engines displayed no indications of pre-impact anomalies that would have precluded normal operation prior to impact." The propellers were disassembled and inspected at Hartzell in Piqua, Ohio, on April 17-18. Both propellers bore indications of rotation at low power. No discrepancies were noted.

ADDITIONAL INFORMATION

One Skydive Salt Lake member related an experience he had when he flew with the pilot on a previous trip. They were returning from a skydive meet and encountered poor weather in the Salt Lake area. The pilot descended over the Salt Lake City VORTAC until he could see the ground, then proceeded to Tooele and landed. Another member related a similar experience, but said they descended over the Great Salt Lake in the vicinity of the accident site. The pilot was able to navigate in deteriorating weather conditions to Tooele Airport, using various landmarks.

The wreckage was released to the owner on January 20, 2001. At the completion of the disassembly and inspection, the engines and propellers were destroyed at the owner's request.

In addition to the Federal Aviation Administration, parties to the investigation included the Raytheon Aircraft Corporation.

Pilot Information

Certificate:	Airline Transport; Commercial	Age:	41, Male
Airplane Rating(s):	Multi-engine Land; Single-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 1 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	07/31/2000
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	5149 hours (Total, all aircraft), 321 hours (Total, this make and model), 4387 hours (Pilot In Command, all aircraft), 44 hours (Last 90 days, all aircraft), 4 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	Registration:	N616F
Model/Series:	65-A90	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	LJ-165
Landing Gear Type:	Retractable - Tricycle	Seats:	1
Date/Type of Last Inspection:	07/20/2000, AAIP	Certified Max Gross Wt.:	9300 lbs
Time Since Last Inspection:	136 Hours	Engines:	2 Turbo Prop
Airframe Total Time:	9725 Hours at time of accident	Engine Manufacturer:	P&W
ELT:	Installed, not activated	Engine Model/Series:	PT6A-20
Registered Owner:	Flanagan Enterprises (Nevada), Inc.	Rated Power:	550 hp
Operator:	William C. Dause	Operating Certificate(s) Held:	None
Operator Does Business As:	Skydive Salt Lake	Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	Condition of Light:	Night
Observation Facility, Elevation:	SLC, 4227 ft msl	Distance from Accident Site:	35 Nautical Miles
Observation Time:	1730 MST	Direction from Accident Site:	45°
Lowest Cloud Condition:		Visibility	0.5 Miles
Lowest Ceiling:	Broken / 500 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	6 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	330°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.13 inches Hg	Temperature/Dew Point:	-1°C / -1°C
Precipitation and Obscuration:			
Departure Point:	Mesquite, NV (67L)	Type of Flight Plan Filed:	VFR
Destination:	Tooele, UT (TVY)	Type of Clearance:	None
Departure Time:	1615 MST	Type of Airspace:	Class G

Airport Information

Airport:	Bolinder Field-Tooele Valley (TVY)	Runway Surface Type:	Unknown
Airport Elevation:	4316 ft	Runway Surface Condition:	Unknown
Runway Used:		IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	8 Fatal	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	9 Fatal	Latitude, Longitude:	40.683333, -112.350000

Administrative Information

Investigator In Charge (IIC):	Arnold W Scott	Report Date:	10/23/2001
Additional Participating Persons:	Jeff L Smith; Federal Aviation Administration; Salt Lake City, UT Richard C Stednitz; Federal Aviation Administration; Salt Lake City, UT		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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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](#).