Aviation Investigation Final Report

Location:	Pago Pago,	**Accident Number:**	WPR14LA309
Date & Time:	July 22, 2014, Local	**Registration:**	N20TC
Aircraft:	Beech A36	**Aircraft Damage:**	Destroyed
Defining Event:	Loss of control in flight	**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The transoceanic flight was one leg of a planned trip for the two private pilots to fly around the world in 30 days. Before departure, a ground crewman observed the pilots complete preflight checks. The ground crewman stated that he told the pilots that the wind had been gusting and strong all day and evening but that the pilots indicated to him that the weather was good for takeoff. The ground crewman then observed the engine start-up and noted that it was unremarkable and that the engine rpm began to increase. He observed the airplane taxi for departure, lift off, and then turn right at the end of the runway. He estimated that the airplane only climbed to about 90 ft before it suddenly nosed down into the ocean. The ground crewman's wife noted that, as the airplane moved down the runway, the wind was very strong. She noted that, although the airplane became airborne, it was moving up and down and side to side and not gaining altitude. Another witness who was a couple of miles from the accident site also observed that the airplane did not gain much altitude before it went straight down into the water. The wreckage was not recovered. The investigation could not determine if there were any mechanical issues during the initial takeoff that would have resulted in the loss of airplane control.

Probable Cause and Findings

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

A loss of airplane control during the initial climb in gusting wind conditions for reasons that could not be determined because the wreckage was not recovered from the ocean.

Findings

Not determined	(general) - Unknown/Not determined
Environmental issues	Gusts - Not specified
Aircraft	(general) - Not attained/maintained

Factual Information

History of Flight

Initial climb	Loss of control in flight (Defining event)

On July 22, 2014, about 2158 standard time (0858 Universal Coordinated Time Wednesday, July 23), a Beech BE36, N20TC, impacted the water after departure from Tafuna/Pago Pago International Airport (NSTU), Pago Pago, American Samoa. The pilot was operating the airplane under the provisions of Title 14 Code of Federal Regulations (CFR) Part 91. The private rated first pilot sustained fatal injuries; the second pilot was the pilot's private pilot rated father who was not located, and presumed to have sustained fatal injuries. Only remnants of the airplane have been recovered. The cross-country personal flight was departing en route nonstop to Honolulu (PHNL), Hawaii. Visual meteorological conditions prevailed, and a visual flight rules (VFR) flight plan had been filed.

The father noted in his blog that the flight would start in Indianapolis, Indiana, and the intent was to fly around the world in 30 days with the son as pilot-in-command. The proposed route of flight included segments from Australia to Pago Pago, to Christmas Island, and then to Honolulu. The company that was providing support (including obtaining permits, clearances, handling, fueling, flight planning, weather briefing, flight tracking) for the flight noted that they had difficulty establishing if fuel was available on Christmas Island so the pilot decided to fly directly to Honolulu. The night time departure would allow for an arrival in Honolulu during daylight hours.

A ground crewman and his wife met the pilot and his father at the airport to support the departure, and observed the pilot completing preflight checks. The ground crewman queried if they were going to depart, and the father replied yes noting that the weather was great. The ground crewman stated that the wind had been gusty and strong all day and evening. He observed them put on life vests; the pilot was in the left seat, and the father was in the right seat. Engine startup was unremarkable, and later the engine revolutions per minute increased. He observed the airplane taxi for departure; he and his wife repositioned so that they could observe the whole runway for the takeoff. The airplane lifted off, and turned right at the end of the runway. After liftoff, he estimated that the airplane only climbed to about 90 feet before it suddenly nosedived into the ocean.

The ground crewman's wife noted that as the airplane moved down the runway, the wind was very strong. The airplane became airborne, but it was moving up and down and side to side; it also was not gaining altitude. At this point, the airplane had passed the very high frequency omni-directional radio range, tactical air navigation located half way down the runway, but it was still very low. Before the airplane reached the end of the runway, it banked to the right towards the ocean. Over the next few seconds, the airplane kept getting lower, and then she lost sight of it. She did not observe it contact the water; she only saw the lights getting lower and lower in altitude. She observed no explosion, and heard no noise.

The ground crewman contacted the airport duty supervisor to determine if there had been any contact with the airplane. The supervisor responded that he was waiting for a call from the pilot after takeoff,

and the ground crewman reported that he thought it went into the ocean.

Another witness was a couple of miles away from the accident site sitting on a seawall facing the airport. An airplane took off, and it was unusual that it didn't go very high. The airplane suddenly went nose down straight into the water.

An additional witness saw an airplane flying east toward open water, and thought that it appeared to be really low. It did not change altitude; a minute later it dropped nose down into the water, and disappeared from view.

The American Samoa Department of Public Safety began rescue operations. At 0040 hours, they observed a strobe light, which was attached to the pilot's life vest; the pilot was still strapped to a seat, and floating. They reported thermal burn marks on the body, and a strong odor of gasoline. They observed another strobe light, but only found that it was attached to a portable emergency beacon. During the search, they recovered a few items of wreckage.

The handler for the company providing support indicated that their tracker showed the airplane on the runway, and then "pinged" a departure message at 2156. The next ping indicated that the airplane was at 97 feet and 77 knots. The person observing the track followed his normal procedure, and was going to wait until the airplane indicated that it was in cruise flight before contacting the pilots. The tracker did not update after the departure ping. He sent an inquiry regarding any problems through the tracker and an alternate tracker system, but received no reply. While waiting to hear from the pilots or see a tracker update, he received notification that the airplane was down.

Pilot Information

Certificate:	Private	**Age:**	17,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Without waivers/limitations	**Last FAA Medical Exam:**	February 19, 2014
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	June 18, 2014
Flight Time:	107 hours (Total, all aircraft)		

Co-pilot Information

Certificate:	Private	**Age:**	55,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	September 6, 2013
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	1522 hours (Total, all aircraft)		

First Pilot

The 17-year-old pilot held a private pilot certificate with ratings for airplane single-engine land and instrument airplane. He held a third-class medical certificate issued on February 19, 2014; it had no limitations or waivers.

No personal flight records were located for the first pilot. The National Transportation Safety Board investigator-in-charge (IIC) obtained the aeronautical experience listed in this report from a review of the Federal Aviation Administration (FAA) airmen records on file in Oklahoma City, Oklahoma. The pilot reported on his medical application that he had a total time of 12 hours with 12 hours logged in the previous 6 months. The pilot obtained an instrument rating on June 18, 2014. The application for the certificate indicated a total time of 107.7 hours.

Second Pilot

The 55-year-old second pilot held a private pilot certificate with ratings for airplane single-engine land, multiengine land, and instrument airplane. He held a third-class medical certificate issued on September 6, 2013; it had the limitation that the pilot must wear corrective lenses. He was on a 6 year authorization for special issuance dating from October 20, 2010, and the medical certificate was not valid for any class after September 30, 2014.

No personal flight records were located for the second pilot. The IIC obtained the aeronautical experience listed in this report from a review of the FAA airmen medical records on file in the Airman and Medical Records Center located in Oklahoma City. The pilot reported on his medical application that he had a total time of 1,522 hours with 110 hours logged in the previous 6 months.

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N20TC
Model/Series:	A36	**Aircraft Category:**	Airplane
Year of Manufacture:	1976	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	E-873
Landing Gear Type:	Retractable - Tricycle	**Seats:**	
Date/Type of Last Inspection:	December 10, 2013 Annual	**Certified Max Gross Wt.:**	3651 lbs
Time Since Last Inspection:		**Engines:**	
Airframe Total Time:		**Engine Manufacturer:**	
ELT:		**Engine Model/Series:**	
Registered Owner:	On file	**Rated Power:**	
Operator:	On file	**Operating Certificate(s) Held:**	None

The airplane was a single-engine, low-wing Beech A36, serial number E-873. Maintenance logbooks for the airplane were not recovered. A receipt from a maintenance facility indicated that an annual inspection had been completed on December 10, 2013.

Per an FAA form 337 dated June 27, 1994, the engine was a Continental Motors Inc. IO-550-B4F, serial number 281740-R. It indicated that a Turbo-Flite 550 turbonormalizing system was installed in accordance with FliteCraft Turbo, Inc. STC numbers SA5223NM and SE5222NM. The company that performed the annual inspection stated that the engine had been removed, overhauled, and reinstalled. However, neither they nor the overhaul facility could confirm the engine model and serial number.

The day before the accident, fueling personnel reported that the father was present for fueling the airplane with Avgas. They topped off the wings first by putting 30 gallons in the right inner wing tank and 7 gallons in the left inner wing tank. The father informed him that the outer tip tanks were full. They then filled the bladder tank in the back of the airplane with 131 gallons. Total fuel added was 168 gallons.

The fueling person stated that the father had indicated that he and his son planned on leaving about 2200 that night. The father came back to the office later that day to talk to the ground agent, but the ground agent wasn't there. The fueling person provided phone contact for the father, and heard the father say that they would not depart until the next day because of high winds.

The last documented weight and balance sheet was dated January 22, 2013. A review of the FAA airplane records disclosed that several pieces of equipment were added after that. Items added were an EMS Aviation Sky Connect Flight Tracking System, a 160 gallon collapsible ferry fuel bladder tank, AmSafe Aviation Inflatable Restraint System on two front seats, a different model propeller, and an extended baggage area.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Night/dark
Observation Facility, Elevation:	NSTU,32 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	08:51 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Scattered / 1900 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Broken / 10000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	15 knots / 23 knots	**Turbulence Type Forecast/Actual:**	/ Unknown
Wind Direction:	340°	**Turbulence Severity Forecast/Actual:**	/ Unknown
Altimeter Setting:	29.8 inches Hg	**Temperature/Dew Point:**	28°C / 23°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Pago Pago (NSTU)	**Type of Flight Plan Filed:**	VFR
Destination:	Honolulu, HI (HNL)	**Type of Clearance:**	None
Departure Time:	21:58 Local	**Type of Airspace:**	

An aviation routine weather report (METAR) for NSTU, elevation 32 feet, was issued at 2151 local time. It stated: wind from 340 degrees at 15 knots gusting to 23 knots; visibility 10 miles; sky 1,900 feet scattered, 10,000 feet broken; temperature 28 degrees C; dew point 23 degrees C; altimeter 29.81 inches of mercury.

Airport Information

Airport:	Tafuna/Pago Pago International NSTU	**Runway Surface Type:**	
Airport Elevation:	32 ft msl	**Runway Surface Condition:**	Unknown
Runway Used:		**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:**	Unknown
Ground Injuries:	N/A	**Aircraft Explosion:**	Unknown
Total Injuries:	2 Fatal	**Latitude, Longitude:**	-14.331666,-170.711395(est)

An FAA inspector documented the recovered wreckage. Airplane wreckage that was recovered included the left forward fuselage skin, left mid interior upholstery sidewall panel, left forward sidewall panel, # 1 (left pilot) seat, inflatable seatbelt, and the pilot's side outside air temperature panel at the lower forward corner of the pilot's left window. Additional airplane debris included a left wingtip strobe lens, the forward cargo door, nose landing gear, and an elevator fragment with a trim tab fragment. Personal items recovered included a life raft, a survival suit, clothing, a duffel bag, and two survival suits.

Medical and Pathological Information

A postmortem examination and a toxicology screen were not conducted per family request.

Additional Information

A pilot who was very experienced in transoceanic flights had been in contact with the pilot's father for several months during the planning of the trip, as well as during the trip. On the day of departure, the father indicated that the airplane had 249 gallons of fuel on board, and anticipated a 2300 departure time so that he and his son could land in Hawaii during daylight hours. He had purchased two life vests for them to wear instead of the gumby suits. He indicated that he and his son planned to take off with 10 degrees of flaps, accelerate in ground effect, and start a slow climb to 200 feet. At that point, they would retract the landing gear, climb to 500 feet, retract the flaps, and then climb to 5,000 feet for level out. Once the power and fuel settings were established for cruise, they would initiate a shallow climb to 7,000 feet. They would maintain that for 2 to 3 hours, and then establish a shallow climb to 9,000 feet. The experienced pilot recommended using a higher speed for takeoff, and stay in ground effect

until the landing gear were up, being careful to not let the airplane sink back down to the runway. Then he recommended that they accelerate in ground effect to a climb speed of 110 to 130 KIAS or whatever speed kept the cylinder head temperatures reasonable. The investigation could not determine what technique the pilot actually performed.

Administrative Information

Investigator In Charge (IIC):	Plagens, Howard
Additional Participating Persons:	Ed Lee; FAA FSDO; Honolulu, HI Mike Council; Continental Motors Inc.; Mobile, AL Jan Smith; Textron Aviation; Wichita, KS
Original Publish Date:	November 29, 2016
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=89721