Aviation Investigation Final Report

Location:	Talkeetna, Alaska	**Accident Number:**	ANC07LA071
Date & Time:	July 31, 2007, 15:30 Local	**Registration:**	N70020
Aircraft:	Cessna 185E	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Other work use		

Analysis

The float-equipped airplane was being operated by the commercial pilot as a VFR cross-country flight in conjunction with his guiding service. The pilot said that he departed one lake en route to another, and about 20 minutes into the flight, the engine went to idle rpm. He said he pushed the throttle forward, and turned the airplane toward a lake, but the airplane descended into trees short of the lake. The airplane sustained extensive damage to the wings and fuselage. The pilot said that there were no known mechanical problems with the airplane prior to the flight. The airplane was examined, and it was found that the support shaft for the throttle and mixture bell cranks was missing, which disconnected the throttle control and allowed the engine to go to idle. The air induction box assembly was examined by the NTSB investigator, and it was discovered that the air box had been repaired with incorrectly substituted parts. The air box (PN 1650012-1) was the correct air box; however, a weld repair had been performed around the shaft support bushings on both sides of the box. The correct solid shaft bushings had been replaced with earlier generation roller bearings. The inappropriate installation did not allow for the support shaft to be properly pinned in place, and did not allow for the redundant safety of the correct installation. The correct parts installation would preclude the support shaft from migrating out of the air box if either shaft end spacer were missing. An examination of the airplane's maintenance log books did not reveal any entries pertaining to the air box repair.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The loss of engine power during cruise flight due to an improperly repaired airbox.

Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: CRUISE - NORMAL

Findings
1. (C) THROTTLE/POWER LEVER,LINKAGE - MISSING
2. (C) THROTTLE/POWER LEVER,BELLCRANK - NOT SECURED
3. (C) THROTTLE/POWER LEVER - INOPERATIVE
4. (C) MAINTENANCE,INSTALLATION - IMPROPER - OTHER MAINTENANCE PERSONNEL

Occurrence #2: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings
5. OBJECT - TREE(S)

Factual Information

On July 31, 2007, about 1530 Alaska daylight time, a float-equipped Cessna 185E airplane, N70020, sustained substantial damage when it collided with trees during an emergency descent/landing, following a loss of engine power during cruise flight, about 6 miles southeast of Talkeetna, Alaska. The airplane was being operated by the pilot as a visual flight rules (VFR) cross-country flight in conjunction with his fish guiding service under Title 14, CFR Part 91, when the accident occurred. The commercial certificated pilot and sole passenger were not injured. Visual meteorological conditions prevailed, and no flight plan was filed. The flight departed Stephan Lake, Alaska, about 1500.

During a telephone conversation with the National Transportation Safety Board (NTSB) investigator-in-charge (IIC) on August 1, the pilot said he was flying from Stephan Lake to Lake Hood, Alaska, cruising at 2,500 feet msl, and was about 20 minutes into the flight when the airplane's engine went to idle rpm, and the airplane started to descend. The pilot said he pushed the throttle forward, and he thought the engine rpm increased slightly, then returned to idle. He said he had turned the airplane toward a lake, but it descended too rapidly, and he landed in trees short of the lake. The airplane sustained extensive damage to the wings and fuselage. The pilot said that the airplane had sat on the water at Stephan Lake for two days prior to the flight, and that he drained the fuel tank sumps prior to takeoff. He said the airplane's fuel tanks were half-full on departure, which was more than enough fuel for the trip. The pilot said that there were no known mechanical problems with the airplane prior to the flight.

After being recovered, the airplane was examined by a certificated aircraft mechanic. The mechanic discovered that the support shaft for the throttle and mixture bell cranks was missing. The air induction box assembly was examined by the IIC, and it was discovered that the air box had been repaired with incorrectly substituted parts. The air box (PN 1650012-1) installed in the accident airplane was the correct air box, however, a weld repair had been performed around the shaft support bushings on both sides of the box. The correct solid shaft bushings had been replaced with earlier generation roller bearings. The inappropriate installation did not allow for the support shaft to be properly pinned in place, and did not allow for the redundant safety of the correct installation, which would preclude the shaft from migrating out of the air box if either shaft end spacer were missing. An examination of the airplane's maintenance log books did not reveal any entries pertaining to the air box repair.

Pilot Information

Certificate:	Commercial	**Age:**	67,Male
Airplane Rating(s):	Single-engine land; Single-engine sea	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	January 1, 2007
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	July 1, 2005
Flight Time:	8980 hours (Total, all aircraft), 6000 hours (Total, this make and model), 65 hours (Last 90 days, all aircraft), 35 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N70020
Model/Series:	185E	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	18501895
Landing Gear Type:	Float	**Seats:**	4
Date/Type of Last Inspection:	July 1, 2006 Annual	**Certified Max Gross Wt.:**	3340 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	3693 Hrs as of last inspection	**Engine Manufacturer:**	Continental
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	IO-520-O24
Registered Owner:	James Bailey	**Rated Power:**	300 Horsepower
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:		**Distance from Accident Site:**	
Observation Time:		**Direction from Accident Site:**	
Lowest Cloud Condition:	Scattered / 2500 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Overcast / 2500 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	170 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	5°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.02 inches Hg	**Temperature/Dew Point:**	16°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Stephan Lake, AK	**Type of Flight Plan Filed:**	None
Destination:	Lake Hood, AK (PALH)	**Type of Clearance:**	None
Departure Time:	15:00 Local	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	62.255832,-149.900283

Administrative Information

Investigator In Charge (IIC):	Lewis, Lawrence
Additional Participating Persons:	Eric Hutchins; Anchorage FSDO-03; Anchorage, AK
Original Publish Date:	March 31, 2008
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=66380