Aviation Investigation Final Report

Location:	El Centro, California	**Accident Number:**	SEA08LA033
Date & Time:	November 14, 2007, 15:50 Local	**Registration:**	N435M
Aircraft:	Beech A36	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	3 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

During the initial climb through 5,500 feet, the engine had a total loss of power. The pilot subsequently landed in an alfalfa field, during which the nose gear collapsed, and both wings sustained substantial damage. A postaccident examination of the engine revealed that the #2 through bolts and deck studs were loose, allowing the #2 bearing half to shift and cover the oil transfer tubes on the bearing support. This sequence resulted in the #2 main bearing failure due to oil starvation, and subsequent separation of the #2 connecting rod, which resulted in the loss of engine power. The airplane's #2 cylinder had been replaced 24 hours prior to the loss of engine power.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The failure of maintenance personnel to properly secure the #2 cylinder through bolts. A contributing factor was the lack of suitable terrain for landing.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - MECH FAILURE/MALF
Phase of Operation: CLIMB - TO CRUISE

Findings
1. (C) INSTALLATION - IMPROPER - OTHER MAINTENANCE PERSONNEL
2. ENGINE ASSEMBLY,CRANKCASE - UNDERTORQUED
3. ENGINE ASSEMBLY,CYLINDER - UNDERTORQUED
4. FLUID,OIL - STARVATION
5. ENGINE ASSEMBLY,CONNECTING ROD - FAILURE

Occurrence #2: FORCED LANDING
Phase of Operation: DESCENT - EMERGENCY

Occurrence #3: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings
6. (F) TERRAIN CONDITION - NONE SUITABLE
7. TERRAIN CONDITION - GROUND

Factual Information

On November 14, 2007, about 1550 Pacific standard time, a Beech A36, N435M, sustained substantial damage following a forced landing as result of a loss of engine power while climbing to cruise altitude near El Centro, California. The certificated private pilot and his two passengers were not injured. Visual meteorological conditions prevailed for the personal cross-country flight, which was operated in accordance with 14 CFR Part 91, and a flight plan was not filed. The flight departed the Calexico Airport (CXL), Calexico, California, about 1540, and was destined for the Whiteman Airport (WHP), Los Angeles, California.

The pilot reported in a written statement that about 5 minutes after departing CXL and climbing through 5,500 feet mean sea level, the [engine] temperature began to increase, followed by "... the engine making a loud noise and we noticed oil on the windshield. That is when the engine quit." The pilot stated that after determining that he could not make the nearest airport, he elected to land in an alfalfa field. The pilot reported that after touching down and rolling out the airplane's nose landing gear collapsed. The airplane came to rest in an upright position and there was no fire.

A Federal Aviation Administration airworthiness inspector, who traveled to the accident site, reported that both wings had sustained substantial damage. It was also reported by a licensed FAA airframe and powerplant mechanic that the engine's number 2 cylinder had failed.

A post-accident examination of the engine revealed that the break-away torque of the #2 cylinder through bolts and deck studs were found loose. It was also observed that the bolts on the 7th studs were found loose and were not installed with the conical seated nuts. Additionally, the right side #2 main bearing half was damaged and had shifted aft approximately 3/8th of an inch, covering the oil transfer tubes on the bearing support. It was also observed that the #2 connecting rod had separated from the crankshaft and exhibited thermal and impact damage. The #2 connecting rod journal exhibited thermal damage and displaced material.

A review of maintenance records indicated that the airplane underwent its most recent annual inspection on August 3, 2007, at a tach time of 749.5 hours. On October 20, 2007, maintenance records revealed that the airplane's #2 cylinder was replaced due to low compression at a tach time of 808.6 hours. The pilot reported having flown the airplane 24 hours since the #2 cylinder had been changed.

Pilot Information

Certificate:	Private	**Age:**	46,Male
Airplane Rating(s):	Single-engine land	**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 3 With waivers/limitations	**Last FAA Medical Exam:**	September 1, 2006
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	June 1, 2007
Flight Time:	439 hours (Total, all aircraft), 258 hours (Total, this make and model), 273 hours (Pilot In Command, all aircraft), 80 hours (Last 90 days, all aircraft), 60 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N435M
Model/Series:	A36	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Utility	**Serial Number:**	E-2726
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	October 1, 2007 Annual	**Certified Max Gross Wt.:**	3500 lbs
Time Since Last Inspection:	24 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	5931.3 Hrs at time of accident	**Engine Manufacturer:**	Continental
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	IO-550
Registered Owner:	Frank Gonzalez	**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:	IPL,-54 ft msl	**Distance from Accident Site:**	8 Nautical Miles
Observation Time:	15:53 Local	**Direction from Accident Site:**	90°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	310°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.88 inches Hg	**Temperature/Dew Point:**	30°C / 3°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Calexico, CA (CXL)	**Type of Flight Plan Filed:**	None
Destination:	Whiteman Airpor, CA (WHP)	**Type of Clearance:**	None
Departure Time:	15:40 Local	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	2 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 None	**Latitude, Longitude:**	32.786666,-115.721664

Administrative Information

Investigator In Charge (IIC):	Little, Thomas
Additional Participating Persons:	Greg Nolting; Federal Aviation Administration; San Diego, CA Andrew Swick; Teledyne Continental Motors, Inc.; Mobile, AL
Original Publish Date:	April 30, 2008
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=67143