Aviation Investigation Final Report

Location:	Dublin, Georgia	**Accident Number:**	ERA10LA487
Date & Time:	September 19, 2010, 13:25 Local	**Registration:**	N2448T
Aircraft:	Navion NAVION G	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (partial)	**Injuries:**	1 Minor, 1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airplane was in cruise flight at 7,000 feet mean sea level, when the engine began to run rough and the oil pressure decreased. The pilot was unable to fly the airplane to the nearest airport and performed a forced landing to a field. During the landing, the airplane struck a ditch and came to rest upright, which resulted in substantial damage to the empennage.

An annual inspection was completed on the airplane about 5 months, or 25 flight hours, prior to the accident; however, the pilot had recently changed the engine oil himself. Initial examination of the engine revealed that the oil drain tube remained attached to the oil quick-release drain plug, and oil was leaking down the side of the oil drain tube likely as a result of the quick-release oil drain plug not being properly secured. A subsequent teardown examination of the engine revealed that the No. 5 connecting rod failed due to lack of lubrication.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to properly secure the oil drain plug after changing the engine oil, which resulted in oil starvation and an engine failure during cruise flight.

Findings

Personnel issues	Scheduled/routine maintenance - Pilot
Aircraft	Oil - Incorrect service/maintenance

Factual Information

History of Flight

Enroute-cruise	Loss of engine power (partial) (Defining event)
Emergency descent	Off-field or emergency landing
Landing-landing roll	Collision with terr/obj (non-CFIT)

On September 19, 2010, about 1325 eastern daylight time, a Navion G, N2448T, owned and operated by an airline transport pilot (ATP), was substantially damaged during a forced landing to a field, following a loss of engine power in cruise flight near Dublin, Georgia. The certificated ATP incurred minor injuries and the passenger was not injured. The personal flight was conducted under the provisions of 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed and an instrument flight rules flight plan was filed for the planned flight to Cannon Creek Airpark (15FL), Lake City, Florida. The flight originated from Evansville Regional Airport (EVV), Evansville, Indiana.

The pilot reported that the airplane was in cruise flight at 7,000 feet mean sea level, when the engine began to run rough and the oil pressure decreased. He informed air traffic control, and the controller provided a vector for the nearest suitable airport, W H "Bud" Barron Airport (DBN), Dublin, Georgia; however, the pilot was unable to fly the airplane to the airport. He subsequently performed a gear-up forced landing to a field, located about 6 miles southeast of DBN. During the landing, the airplane struck a ditch and came to rest upright, which resulted in substantial damage to the empennage.

The pilot, age 78, held an ATP certificate with type ratings in multiple transport category airplanes. The pilot also held a mechanic certificate. His most recent Federal Aviation Administration (FAA) third-class medical certificate was issued on July 1, 2009. The pilot reported a total flight experience of 18,763 hours; of which, 720 hours were in the same make and model as the accident airplane.

The airplane was equipped with a Teledyne Continental Motors IO-520-BA, 285-horsepower engine. The airplane's most recent annual inspection was completed on April 8, 2010. At that time, the engine had accumulated about 469 hours since major overhaul. The airplane had flown about 25 hours from the time of the most recent annual inspection, until the accident. The pilot further stated that sometime after the annual inspection in April, but before a recent trip to Pennsylvania, he changed the oil in the accident airplane. He could not remember what date he changed the oil, and he forgot to record the oil change in the aircraft logbooks.

An FAA inspector noted that the No. 5 cylinder was cracked at the base. He also observed no oil on the dipstick, but significant amounts of oil on the engine cowling. When the engine was recovered from the field, an oil drain tube remained attached to the oil quick-release drain plug,

and oil was leaking down the side of the oil drain tube.

The engine subsequently underwent a teardown examination at the manufacturer's facility, under the supervision of an NTSB investigator. The examination revealed several cracks in the engine case at the No. 5 cylinder base. The case was pushed out, consistent with impact from a loose connecting rod. Disassembly of the engine revealed evidence of thermal distress on the crankshaft at the No. 4 and No. 5 connecting rods, and evidence of lack of lubrication. Less than 2 quarts of oil were recovered from the 12-quart-capacity engine. The No. 5 connecting rod was fractured at the crankshaft attachment points and the attachment fittings were loose in the oil pan.

Pilot Information

Certificate:	Airline transport; Commercial; Flight engineer	**Age:**	78,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Glider	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	July 1, 2009
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	October 12, 2009
Flight Time:	18660 hours (Total, all aircraft), 721 hours (Total, this make and model), 20 hours (Last 90 days, all aircraft), 14 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Navion	**Registration:**	N2448T
Model/Series:	NAVION G	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	NAV-4-2448
Landing Gear Type:	Retractable - Tricycle	**Seats:**	5
Date/Type of Last Inspection:	April 8, 2010 Annual	**Certified Max Gross Wt.:**	3315 lbs
Time Since Last Inspection:	25 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	3357 Hrs	**Engine Manufacturer:**	CONT MOTOR
ELT:	Installed, not activated	**Engine Model/Series:**	IO-520
Registered Owner:	JOHN B GORDON	**Rated Power:**	285 Horsepower
Operator:	JOHN B GORDON	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	DBN,309 ft msl	**Distance from Accident Site:**	6 Nautical Miles
Observation Time:	13:36 Local	**Direction from Accident Site:**	300°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	70°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.09 inches Hg	**Temperature/Dew Point:**	33°C / 18°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Evansville, IN (EVV)	**Type of Flight Plan Filed:**	IFR
Destination:	Lake City, FL (15FL)	**Type of Clearance:**	IFR
Departure Time:	10:25 Local	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Minor, 1 None	**Latitude, Longitude:**	32.564445,-82.985275(est)

Administrative Information

Investigator In Charge (IIC):	Gretz, Robert
Additional Participating Persons:	Jim Couch; FAA/FSDO; Atlanta, GA John Kent; Continental Motors; Mobile, AL
Original Publish Date:	June 13, 2011
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=77337