1. History of Flight

Flight Data		
Type of flight: PIC	Departure Airport: KTUP	Destination Airport: Undt
Weather Briefing Obtained? Yes	Flight Plan Filed? No	
Fuel Location: KTUP		
Fueling Date: 08-17-11	Fuel type: 100LL	Amount of fuel added: 15 gallons

Ground Injuries		
Name	Address	Injury Type
Barry Flanagan	Undt	Soreness

Witness information		
Name	Address	Phone #
Ryan Roethemeier	[redacted] Belden, MS 38826	[redacted]

Remarks:
The aircraft had recently received an annual inspection. The accident flight was the first flight following the inspection. The aircraft was cleared for takeoff from Runway 36 at Tupelo Regional Airport (KTUP) Tupelo, MS, and instructed to depart to the east. According to witnesses, the aircraft climbed to approximately 300-500 feet and made a left turn to the west. Witnesses reported they heard the engine power decrease and saw the aircraft descend. The aircraft struck North Coley Road which is adjacent and parallel to the runway before striking a pick-up truck and impacting a tree in a residential yard.

3. Weather Information

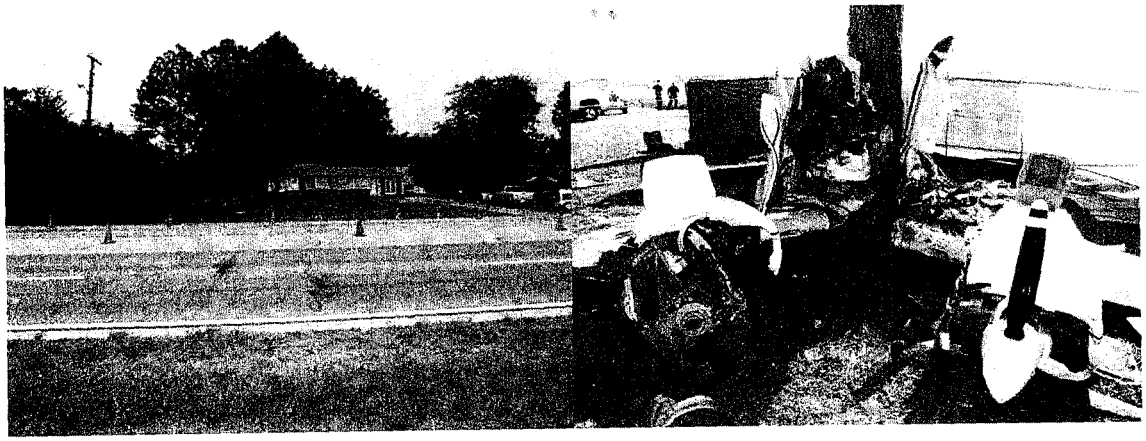
Nearest Weather Reporting Station			
Location: Tupelo Regional Airport, Tupelo, MS			Identifier: KTUP
Time: 0753 CDT	Wind Direction: Calm	Wind Velocity: Variable	
Visibility: 10 SM	Present Weather: None		
Sky Condition: Few 10,000			
Temperature: 24°C	Dew Point: 20°C	Altimeter Setting: 30.09 inHg	
Weather Reporting Station Elevation: 346 Feet			
Distance To Accident Site: ~0.5 SM	Direction To Accident Site: 270° Magnetic		

Remarks:
None.

4. Site Information

Accident Location Data		
Location: Off airport	Site Street Address: [redacted] Tupelo, MS	
Elevation: 333 Feet	Latitude: N 34° 16.104' (GPS)	Longitude: W 088° 46.383' (GPS)
Impact Path Magnetic Heading: ~290°	Obstacles Struck Before Principal Impact: None	
Terrain Conditions and Features: Road and residential property		
Approx. Attitude at Impact: Wings-level, nose-down		

Remarks:



5. Aircraft Information

Airframe		
First Delivery Date: 12-22-11	Date Purchased by Current Owner: 04-17-07	
Last Annual Inspection: Date: 08-16-11	Hours: 3,382.1	Hours Since Inspection: 0.1
Total Aircraft Hours at Occurrence: 3,382.1	Previous Accident History: No	
Last Pitot-Static Check: 09-03-09	Flight Manual on Board: Yes	Aircraft Logbooks on Board: No
Major Components		
L Engine: Make: Continental	Model: IO-470-VO (9)	S/N: 455788
R Engine: Make: Continental	Model: IO-470-VO (9)	S/N: 455789
L Propeller: Make: McCauley	Model: 3AF32C87-QR	Hub S/N: 910078
R Propeller: Make: McCauley	Model: 3AF32C87-QR	Hub S/N: 911179
L Engine TTSN: 710.9	L Engine TSMO: N/A	L Propeller TSO: 710.9
R Engine TTSN: 710.9	R Engine TSMO: N/A	R Propeller TSO: 710.9

Remarks:

The accident flight was the first flight following an annual inspection. According to the engine logbook, cylinder #2 on the left engine was replaced with an overhauled unit due to low compression and the right propeller governor was overhauled. According to the aircraft logbook, the left engine fuel return line was also replaced.

A review of Airworthiness and FAA Form 337 records indicated several repairs and modifications including the following:

- 05-30-90, anti-collision light per STC SA615EA.
- 03-08-91, Vortex generators per STC SA4980NM.
- 05-24-93, Cleveland wheels and brakes per STC SA111GL.
- 10-20-99, Brackett air filter per STC SA71GL.
- 04-09-02, Garmin GNS430.

6. Investigation Information

On 08-18-11, the NTSB-IIC, two FAA representatives, a Continental Motors investigator, and this investigator examined the wreckage at the accident site. On 08-19-11, the NTSB-IIC, two FAA representatives, a Continental Motors investigator, and this investigator examined the wreckage in a hangar at KTUP.

Airframe

Impact Sequence and Airframe Structure

The aircraft descended below power lines and impacted a road in a near wings-level flight attitude. The nose wheel and main landing gear separated from the aircraft. The left wing struck a tree and separated the main fuel tank and an approximately 4-foot long section of the outboard left wing. The aircraft then struck a tree with the nose section and came to rest. The forward fuselage and instrument panel were compressed to the aft wing spar.

Airframe Systems

Flight Control Systems		
Flight Control Cable Continuity		
Ailerons: See below	Elevators: See below	Rudder: See below
Aileron tab: See below	Elevator tab: Established	Rudder tab: See below
Flap and Trim Positions		
Flap Actuator: ~10 Down	Flap Indicator: Up	Flap Switch: Up
Elevator Trim: Actuator: ~1.3" = ~10 degrees tab down		Indicator: Undetermined
Rudder Trim: Actuator: ~0.9" = ~0 degrees		Indicator: Neutral
Aileron Trim: Actuator: ~1.6" = ~10 degrees tab down		Indicator: Neutral

Remarks:
Control cable continuity was established from the elevator to the forward elevator bell crank. Partial control cable continuity was established from the ailerons, aileron trim tab, rudder, and rudder trim tab to the forward floor assembly due to forward cabin compression damage.

Airframe Fuel System		
Left Fuel Strainer Screen: Clean	Right Fuel Strainer Screen: Clean	
Main Fuel Tank Gauges: Left: 0	Right: ~210 lbs	
Auxiliary Fuel Gauges: Left: Undt	Right: Undt	
Locker Fuel Gauges: Left: N/A	Right: N/A	
Fuel Selector Handles: Left: See Below / Right: See Below	Fuel Selector Valves: Left: See Below / Right: See Below	Fuel Boost Pump Switches: Left: Off / Right: Off

Remarks:
The left and right fuel selector handles were observed between the main tank and aux tank. The fuel selector valves were observed past the "Off" position and beyond the stop pin. Fuel was present in the left and right fuel strainer bowl assemblies, and at each engine driven fuel pump.

Landing Gear System			
Gear Position:	Nose: Extended	Left: Extended	Right: Extended
Actuator Position:	Nose: Extended	Left: Extended	Right: Extended
Landing Gear Cockpit Switch: Extended			

Environmental System	
Cabin Heater: Off	Air Conditioner: Off
Cabin Vent: Open	Defrost Control: Open

Icing System		
Certified Into Known Icing? No	De-Icing Boots Installed? No	
Pitot Heat: On	Stall Heat: Not Applicable	
De-Ice: Surface: Not applicable	Propeller: Not Applicable	Windshield: Not Applicable
Anti-Ice: Surface: Not Applicable	Propeller: Not Applicable	Windshield: Not Applicable

ELT			
Installed? Yes	Manufacturer: Artex	Model: ELT-200	Type: AF
Serial Number: E08267	Battery Due Date: 11-11	Armed: Yes	Activated: Yes

Remarks:
None.

Cabin and Equipment/Furnishings

Restraint System Information						
Seat	Occupied	Restraint Type	Restraint Used	Condition	Manufacturer	
1	Yes	3-Point	Yes	Cut by recovery personnel	See Below	
2	No	3-Point	N/A	Undt	Undt	
3	No	2-Point	N/A	Undt	Undt	
4	No	2-Point	N/A	Undt	Undt	
5	No	2-Point	N/A	Undt	Undt	
6	No	2-Point	N/A	Undt	Undt	

Seat Condition Information					
Seat	Orientation	Feet Intact	Back Intact	Base Intact	Rail Intact
1	Forward Facing	N/A	Yes	Yes	Partially
2	Forward Facing	N/A	Yes	Yes	Undt
3	Forward Facing	N/A	Yes	Yes	Undt
4	Forward Facing	N/A	Yes	Yes	Undt
5	Forward Facing	N/A	Yes	Yes	Undt
6	Forward Facing	N/A	Yes	Yes	Undt

Remarks:

The seat #1 lap belt and shoulder harness were manufactured by Am-Safe, Inc. The data label indicated the date of manufacture as 04-73. The belts were "renovated" in 05-01 by Southern Safety, Inc.

Instrument Panel

Navigation Instruments					
Analog Primary Instruments			Autopilot Type: See Below		
Suction Gage: 0		Magnetic Compass: ~360		Clock: 09:52	
	Left Side	Right Side		Left Side	Right Side
Airspeed:	30	N/A	Turn Coordinator (Airplane):	Undt	N/A
Attitude (Pitch):	Down	Up	Turn Coordinator (Ball):	Undt	N/A
Attitude (Roll):	~55 L	~15 L	Heading Indicator:	~275	N/A
Altimeter:	~400	N/A	Heading "Bug":	~285	N/A
Altimeter Setting:	30.06	N/A	Vertical Speed Indicator:	~2,000 Down	N/A

Communication and Navigation Radios							
Radio	Switch	Active Frequency	Stand-By Frequency	Radio	Switch	Active Frequency	Stand-By Frequency
COM #1	On	Digi	Digi	COM #2	N/A	N/A	N/A
NAV #1	On	Digi	Digi	NAV #2	N/A	N/A	N/A
OBS #1	~255			OBS #2	~005		
Transponder: Mode: Undt			Active Code: Undt			Standby Code: N/A	

Electrical Switch Positions			
Master Battery: Off	Master Alternator: On	Avionics #1: On	
Stand-By Battery: N/A	Alternator 2: Off	Avionics #2: N/A	

Lighting Switch Positions		
Navigation Lights: Off	Rotating Beacon(s): On	Landing Light(s): Off
Taxi Light(s): Off	Strobe Light(s): Off	Instrument Lights: Off
Wing Ice Light: N/A		

Ignition Switch Position				
L Engine:	L Mag: On	R Mag: On	R Engine: L Mag: On	R Mag: On

Remarks:
The aircraft was equipped with a Nav-O-Matic 400A autopilot.

7. Powerplant Description

Engine Instruments					
	Left Engine	Right Engine		Left Engine	Right Engine
Hour Meter:	See Below	See Below	CHT:	0	0
Tach RPM:	~380	~420	Fuel Pressure:	N/A	N/A
Manifold Pressure:	30	30	Fuel Flow:	0	0
Oil Pressure:	0	0	Ammeter:	0 - Set to Left Alt	0
Oil Temperature:	0	0	Voltmeter:	N/A	N/A
EGT:	0	0			

Left Engine Control Positions					
	Cockpit	Engine		Cockpit	Engine
Throttle:	Takeoff	Idle	Cowl Flaps:	N/A	N/A
Mixture:	Rich	Undt	Alternate Air:	Off	Undt
Propeller:	Low RPM	Undt	Primer:	Off	

Right Engine Control Positions					
	Cockpit	Engine		Cockpit	Engine
Throttle:	Takeoff	Idle	Cowl Flaps:	N/A	N/A
Mixture:	Rich	Undt	Alternate Air:	Off	Undt
Propeller:	Low RPM	Undt	Primer:	Off	

Engine Condition					
	Left Engine	Right Engine		Left Engine	Right Engine
Engine Attached to Airframe:	Yes	Yes	Engine Compression:	Yes	Yes
Propeller Attached to Engine:	Yes	No	Valve Train Continuity:	Yes	Yes
Vacuum Pump Drive Shaft:	Undt	Undt			

Engine Fuel System Condition					
	Left Engine	Right Engine		Left Engine	Right Engine
Fuel Pump Drive Shaft:	Intact	Intact	Distribution Valve Screen:	Undt	Undt
Fuel Injectors:	Undt	Undt	Fuel Control Inlet Screen:	Undt	Undt

Engine Magneto Condition					
	Left Engine	Right Engine		Left Engine	Right Engine
Left Magneto Attached:	Yes	Yes	Left Magneto Spark:	Undetermined	Undetermined
Right Magneto Attached:	Yes	Yes	Right Magneto Spark:	Undetermined	Undetermined

Left Engine Spark Plug Condition (per Champion Check-A-Plug Card)						
	1	2	3	4	5	6
Top	Normal	Normal	Normal	Normal	Normal	Normal
Bottom						

Right Engine Spark Plug Condition (per Champion Check-A-Plug Card)						
	1	2	3	4	5	6
Top	Normal	Normal	Normal	Normal	Normal	Normal
Bottom						

Remarks:
One aircraft hour meter was observed in the glove box; it indicated 3,382.2.

Both engines remained attached to the airframe. Examination of the left engine revealed the fitting on the fuel line located between the fuel metering unit and the fuel manifold was loose at the fuel manifold inlet. The torque putty on the B-nut was cracked and appeared old, dry, and covered in dirt. The B-nut was found approximately 1/4 to 3/8 of a turn loose. The fuel manifold inlet fuel line is routed directly above the #2 cylinder which was removed and replaced during the annual inspection. According to the mechanic, he removed the fuel line during the cylinder replacement and reinstalled it at the required torque. The right engine was observed with minor damage on the lower left side of the crankcase.

The engines were removed from the aircraft and shipped to Continental Motors, Inc for further examination.

Propellers

The left propeller remained attached to the engine. The #1 blade was straight and did not display damage. The #2 blade was curled aft near the tip and had chordwise scoring. The #3 blade was curled aft near mid-span and had chordwise scoring.

The right propeller separated from the engine and struck the residence. The threads on the bolts in the crankshaft propeller flange were stripped. The #1 blade was curled aft and had chordwise scoring. The #2 blade was bent aft near the tip and was burnished. The #3 blade was curled aft near the tip and had chordwise scoring.