TEXTRON Lycoming

Air Safety Investigation
Preliminary Aircraft Mishap Report

Mishap Date: 12/3/99
Aircraft Registration: N3038N
Aircraft Manufacturer: Piper 1979
Location: Deland, FL
Federal IIC: Timothy W. Monville
NTSB-SERA
[redacted]

Mishap Time (24 hr.): 1023 EST
Air Safety Investigator: Edward Rogalski
Aircraft Model: PA-44-180
Aircraft S/N: 7995229
On Scene Examination: No
Aircraft Damage: Destroyed

Engine:	Model	Serial Number	Total Time
Single/Left:	O-360-E1A6D	L-529-77T	>939 Hours Since Field O/H
Right:	LO-360-E1A6D	RL-551-72T	>1052 Hours Since Field O/H

Propellers:	Manufacturer	Part Number	Serial Number
Single/Left:	Hartzell	HC-C2YK-2CEUF	AU6034
Right:	Hartzell	HC-C2YR-2CLEUF	AU9185B

Injuries:	Number	Fatal	Serious	Minor	None
Crew	2	2	0	0	0
Passengers	0	0	0	0	0
Ground		0	0	0	

Registered Owner: Phoenix East Aviation Inc.
561 Pearl Harbor Dr.
Daytona Beach, FL. 32114

Operator: Same as Owner

Pilot: Nicholas J. Simatos
[redacted]

Medical: Class II
Pilot Rating: CFI

Date Issued: 6/21/99

Summary:

Per NTSB Preliminary Information: On 12/3/99, about 1023 EST, Piper PA-44-180, N3038N, registered to and operated by Phoenix East Aviation, Inc., and Piper PA-28-161, N153ER, registered to and operated by Embry-Riddle Aeronautical University, collided inflight near the departure end of runway 5 the Deland Municipal Airport, Deland, FL. VFR conditions prevailed at the time and a local IFR flight plan was filed for the FAR Part 91 instructional flight of the PA-44. No flight plan was filed for the FAR Part 91 instructional flight of the PA-28; none was required. Both airplanes were destroyed. The CFI and the commercial pilot student of the PA-44 were fatally injured. The CFI and the private pilot student of the PA-28 were also fatally injured. The NTSB & FAA conducted the on scene investigation with assistance of both operators and a representative of the airframe manufacturer. Textron Lycoming did not participate on scene. Subsequent to the initial investigation, the NTSB authorized recovery of both aircraft wreckage's to the facilities of Command Aircraft Inc. Located in Bunnell, Fl., for further detailed examination. On 12/7/99 this investigator assisted the NTSB conduct the post recovery examination of the subject aircraft engines. Other parties to the investigation were also present during the examination.

Left Engine Examination O-360-E1A6D S/N L-529-77T

On 12/7/99 this investigator assisted the NTSB conduct the post recovery examination of the subject aircraft engine at the facilities of Command Aircraft, Inc., located in Bunnell, Florida.
As first viewed, the engine was separated from the airframe structure, the steel tubular engine mounts were broken. The engine sustained heavy impact damage to all sides, including the accessory section. The power section of the engine remained relatively intact, no outward indication of any pre-impact mechanical failure or malfunction was noted.
The propeller remained attached to the crankshaft flange, and exhibited damage consistent with rotation upon impact. One prop blade was broken from the hub. The broken blade was recovered in two segments, the outboard segment had leading edge damage consistent with the shape and contour of mating damage found on the top of the engine crankcase and cylinders of N153ER. The opposite blade remained in the hub and exhibited slight aft bending.
The engine was positioned on a lift hoist and accessed on all sides for further examination. Damage to the engine was noted as follows: The oil filter housing was broken from the rear case. The #3 cylinder head/valve cover was damaged, the intake rocker arm and push rod was destroyed. The carburetor was impact fractured from the engine, the unit was not located or recovered. The fuel pump was impact damaged, the drive end remained affixed to the case, and the diaphragm section was broken off. No residual fuel was found remaining within the fuel system components. The starter motor assembly was impact fractured from the drive end. The alternator was impact damaged; the internal rotor separated from the stator housing, scoring on the rotor was noted. The vacuum pump was broken from the flange attachment. The #4T spark plug was broken. The exhaust system pipes were crushed.
Engine examination included partial disassembly. The valve covers were removed for inspection. The top spark plugs were removed and exhibited light gray color combustion deposits, wear was moderate, gap settings were normal.
Rotation of the crankshaft established internal continuity of the reciprocating components. The engine was adequately lubricated. Cam/valve action and continuity to the accessory drive gears was confirmed. The propeller governor unit was found intact; the control cable was separated. The governor control arm was in high rpm position, as found the unit was not removed. The induction air filter element was intact.
At the conclusion of the left engine examination no evidence of any pre-impact mechanical deficiencies associated with the power section of the engine, and or the available components was found that would have prevented power from being developed prior to the mishap.

Left Engine Data

Left Engine: O-360-E1A6D S/N: L-529-77T
Case Stamp: L-529-77T
Case Match: A2089/A2089

Magneto: Bendix D4RN-3000 10-682555-14 S/N G259812GR
Spark plugs: Champion RHM38E

Carburetor: (Not Located)
Fuel Pump: AC 153999807

Prop Governor: F-3-2 S/N: 1223S

Alternator: Prestolite ALY-6421 SN: 7090999

Starter: Prestolite MZ-4222R S/N 9102032

Vacuum Pump: Airborne 211CC S/N 03309

Right Engine Examination LO-360-E1A6D S/N RL-551-72T

On 12/7/99 this investigator assisted the NTSB conduct the post recovery examination of the subject aircraft engine at the facilities of Command Aircraft, Inc., located in Bunnell, Florida. As first viewed, the engine remained partially attached to the airframe structure. Deformation to the steel tubular engine mounts was noted. The engine sustained heavy impact damage to all sides, excluding the accessory section. The power section of the engine remained relatively intact, no outward indication of any pre-impact mechanical failure or malfunction was noted. The propeller assembly was separated from the engine, the engine crankshaft was fractured aft of the prop attachment flange. The propeller exhibited damage consistent with rotation upon impact. One blade was twisted toward low pitch. The opposite blade was bent aft about 90 degrees and had gouges near the tip and leading edge.

The engine was positioned on a lift hoist and accessed on all sides for further examination. Damage to the engine was noted as follows: The fractured surfaces of the crankshaft appeared consistent with torsional overload damage. The propeller governor was fractured at the base attachment flange, the control was damaged, position unreliable.

The exhaust system pipes were crushed. The pushrods #1E and #2I were damaged.

The carburetor was impact fractured at the mount flange, the controls remained connected, and control position was unreliable due to cable distortion. The fuel pump was essentially destroyed. No residual fuel was found remaining within the fuel system components.

The prop governor was fractured from the attachment flange. The alternator mount was broken.

Engine examination included partial disassembly. The valve covers were removed for inspection. The top spark plugs were removed and exhibited medium gray/brown color combustion deposits, wear was moderate, gap settings were normal.

Rotation of the crankshaft established internal continuity of the reciprocating components. The engine was adequately lubricated. Cam/valve action and continuity to the accessory drive gears was confirmed. The governor oil gasket screen was found clean. The dual magneto and vacuum pump remained attached to the accessory section and rotated with the engine.

The induction air filter element was intact.

At the conclusion of the right engine examination no evidence of any pre-impact mechanical deficiencies associated with the power section of the engine, and or the available components was found that would have prevented power from being developed prior to the mishap.

Right Engine Data

Right Engine: LO-360-E1A6D S/N: RL-551-72T
Case Number: L-551-72T
Case Match: 6884 / 6884

Dual Magneto: Bendix D4LN-3000 10-682555-15 S/N 1239834
Spark plugs: Champion RHM38E

Carburetor: (No Mfg Data) P/N: 10-5219 S/N: DL-41-327
Fuel Pump: AC 153999806

Prop Governor: Data Not Legible

Vacuum Pump: Aero Accessories AA212CW S/N: N02001

Alternator: Prestolite ALY-8420 S/N: A137406

Starter: (No Mfg Data)