TEXTRON Lycoming

Air Safety Investigation
Aircraft Mishap Report Field Notes

Mishap Date:	12/3/99	**Mishap Time (24 hr.):**	1023 EST
Aircraft Registration:	N153ER	**Air Safety Investigator:**	Edward Rogalski
Aircraft Manufacturer:	Piper 1989	**Aircraft Model:**	PA-28-161
Location:	Deland, FL	**Aircraft S/N:**	2841178
Federal IIC:	Timothy W. Monville [redacted]	**On Scene Examination:**	No
		Aircraft Damage:	Destroyed

Engine:	Model	Serial Number	Total Time
Single/Left:	O-320-D3G	L-15607-39A	>204 Hours Since Field O/H
Right:			Hours Since

Propellers:	Manufacturer	Part Number	Serial Number
Single/Left:	Sensenich	74DM6-0-60	A 56073
Right:			

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

Registered Owner: Embry Riddle University
600 S. Clyde Morris Blvd.
Daytona Beach, FL. 32114

Operator: Same as Owner

Pilot: Todd J. Landry [redacted]

Medical: Class I

Date Issued: 7/22/99

Pilot Rating: CFI

Summary:

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 engine. Other parties to the investigation were also present during the examination.

Engine Examination O-320-D3G S/N L-15607-39A

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. Both prop blades were twisted and broken. A broken segment of one blade measured about 10.5 inches. The opposite broken segment of blade was not recovered.
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 top crankcase was broken open from the outside, between the #3 & #4 cylinders. Note: The crankcase and top cylinder damage was consistent with the shape and contour of mating damage found on a broken segment of propeller blade from the left engine of N3038N. Pushrods #2I, #3E/I and #4I were damaged or destroyed. Both magnetos were separated from the rear of the engine and were not located. The magneto attachment hardware remained in place. The ignition harness was destroyed. The #1T spark plug was broken. The starter was fractured at the mount pad. The alternator was separated from the engine and was not located or recovered. The carburetor was fractured from the bottom of the engine at the attachment flange, the controls were damaged, control positions unreliable. The fuel supply hose was broken at the end fittings. The induction air box was crushed. The exhaust system mufflers were crushed.
Engine examination included partial disassembly. The valve covers were removed for inspection. The top spark plugs were removed and exhibited light-medium gray color combustion deposits, wear was moderate, gap settings were normal. The exhaust system was also removed.
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 vacuum pump remained attached to the accessory section and rotated with the engine. The fuel pump was removed; aural pumping action was noted when the unit was hand actuated. Visual examination of the carburetor and fuel pump revealed no anomalies. No residual fuel was found remaining within the engine fuel system components. The induction air filter element was intact.
At the conclusion of the 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.

Engine Data

Engine Model:O-320-D3G S/N: L-15607-39A
Case Number: Unknown
Case Match: 4483/4483

Magnetos: Not Recovered
Spark Plugs: Champion REM38E

Carburetor: Marvel MA4-SPA P/N: 05135 S/N: CK 8 15294 (MF) (V)
Fuel Pump: AC 154729803

Vacuum Pump: Not Recorded

Alternator: Not Recovered

Starter: Prestolite P/N: MZ-6222 S/N: 8082639

Investigative Participants

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NTSB-SERA
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Insurance Company Representative

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Disposition of Wreckage

Command Aircraft, Inc.
Flagler County Airport
Bunnell, FL.