

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



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N8438B - PROPELLER EXAMINATION REPORT

December 4, 2024

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A. ACCIDENT

Location: Muncie, Indiana
Date: April 1, 2024
Time: 1027 Local Time
Airplane: N8438B, Piper PA-28-236

B. N8438B - PROPELLER EXAMINATION REPORT

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Party Coordinator	Travis Martin, engineering technician McCauley Propeller Systems Wichita, Kansas
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C. DETAILS OF THE EXAMINATION

1.0 Follow-up Examination

The propeller was examined at McCauley Propeller Systems in Wichita, Kansas. The propeller was removed from a wooden crate. The propeller maintenance records were reviewed.

2.0 Propeller Examination

The propeller was laid out, and it was documented. The propeller is a McCauley B3D36C431-B/H-80VSA-1 controllable pitch propeller, hub serial number 982856.

Propeller Model:	B3D36C431-B
Serial (S/N):	982856 (1998 manufacture)
Blade 1 (S/N):	SA0_8 (1992 manufacture)
Blade 2 (S/N):	_H044 (Year Stamp illegible)

Blade 3 (S/N): SH078 (1998
manufacture)

The spinner shell was not present. The spinner shell was previously photo documented at Midwest Air Recovery in Carbondale, Illinois.

The blade #1 retaining ring was missing. The retaining rings of blades #2 and #3 were no longer seated in the retaining ring groove and all three blades could be rotated in their sockets. The propeller hub was missing a portion at the aft side of socket #1. Impression marks matching the split retainers were present inside of the hub, opposite the missing portion of socket #1.

Engine oil and red-dyed oil were found in the cylinder and on the forward face of the piston. Red-dyed oil, soil, and rust were found inside the hub. The piston rod was bent consistent with impact from the #1 blade. Deformation of the cylinder was consistent with bending direction of the piston rod.

The blade angle actuation components exhibited structural overload failures and damage associated with the impact sequence. The phenolic pitch change actuation links for all blades were broken. Each actuating pin was separated from their respective blade. Witness marks caused by the movement of blade #3's actuating pin into the butt of blade #1 are consistent with the blades being at the low pitch stop during the impact sequence.

Blade #1 exhibited backward bending at the tip. Blade #2 exhibited forward bending at the tip. Blade #3 exhibited s-bending at the tip. All blades looked relatively intact and did not have significant material removed from them. None of the blades had deep leading-edge gouges or significant chord wise scratches.

The examination found no evidence of fatigue failure with the propeller. There were no preimpact mechanical malfunctions or failures with the propeller that would have precluded normal operation.

Submitted by:

Michael J. Hodges
Investigator-In-Charge