

National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



WPR25LA096

MATERIALS LABORATORY

Factual Report 25-036

May 28, 2025

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A. ACCIDENT INFORMATION

Location: Minersville, Utah
Date: February 16, 2025
Vehicle: Cessna 150J, N151GW
Investigator: Kathryn Whitaker

B. COMPONENTS EXAMINED

Portion of a Sensenich propeller Model: M74DM-0-58, SN: K13773 (Figure 1)

C. EXAMINATION PARTICIPANTS

Specialist Joseph Panagiotou
National Transportation Safety Board
Washington, DC

D. DETAILS OF THE EXAMINATION

The propeller examined was a fixed pitch propeller with a blade fracture approximately 17 inches from the hub. The fracture surface was a flat fracture perpendicular to the blade's length and exhibited a narrow slant fracture region along the blade back (Figure 2). The fracture features were consistent with a fatigue crack. The fracture initiated in a location approximately in the middle of the blade face and progressed towards the blade back where the final separation was due to overstress of the reduced cross section. The fatigue crack extended over approximately 79% of the blade's cross section. Examination of the fatigue crack origin revealed a pit that had been painted over (Figure 3).

The propeller's paint was stripped along a section of the propeller face near the origin to examine the pit and the surrounding area. The origin pit exhibited material displacement which caused a raised edge along the periphery of the pit and linear scars in the pit. The features of the origin pit were consistent a gouge caused by particle impact (Figure 4, 5). The paint stripped area of the blade face was examined and found to have multiple pits and gouge marks (Figure 6). Examination of the highlighted pits revealed features consistent with particle impact (Figures 7 - 11).

Submitted by:

Joseph Panagiotou
Fire Protection Engineer



Figure 1. Portion of the propeller as received.



Figure 2. Fracture surface exhibiting a flat fracture and shear lip along the blade back. Fracture origin indicated by the red arrow.

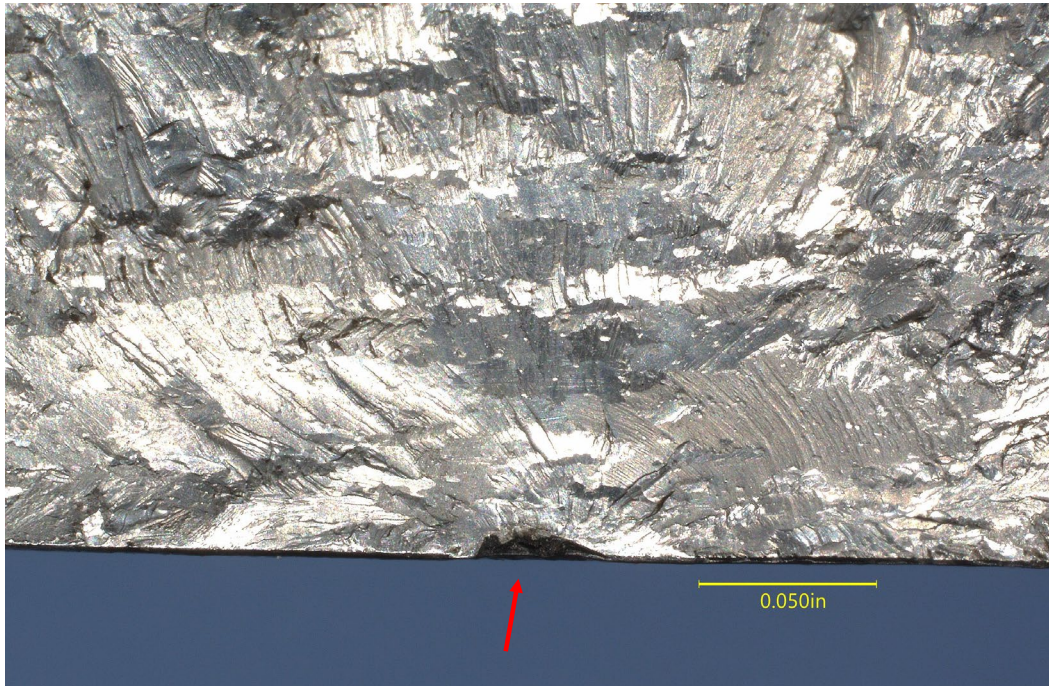


Figure 3. Closeup of the fatigue crack origin with a pit that had been painted over. Crack arrest fronts can also be seen emanating from the origin location.

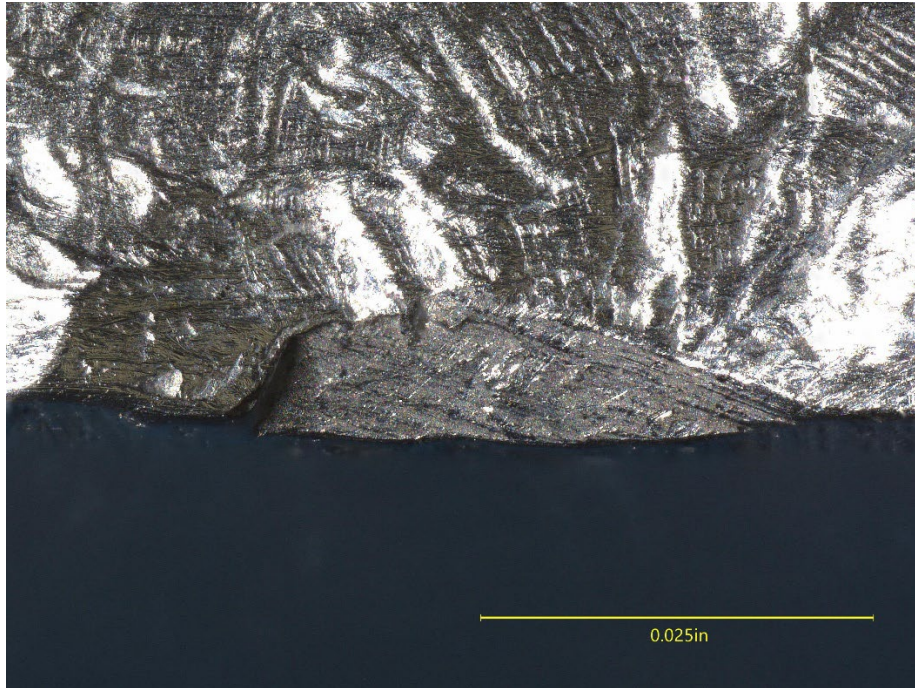


Figure 4. Fatigue crack origin pit with paint removed. View perpendicular to fracture surface.

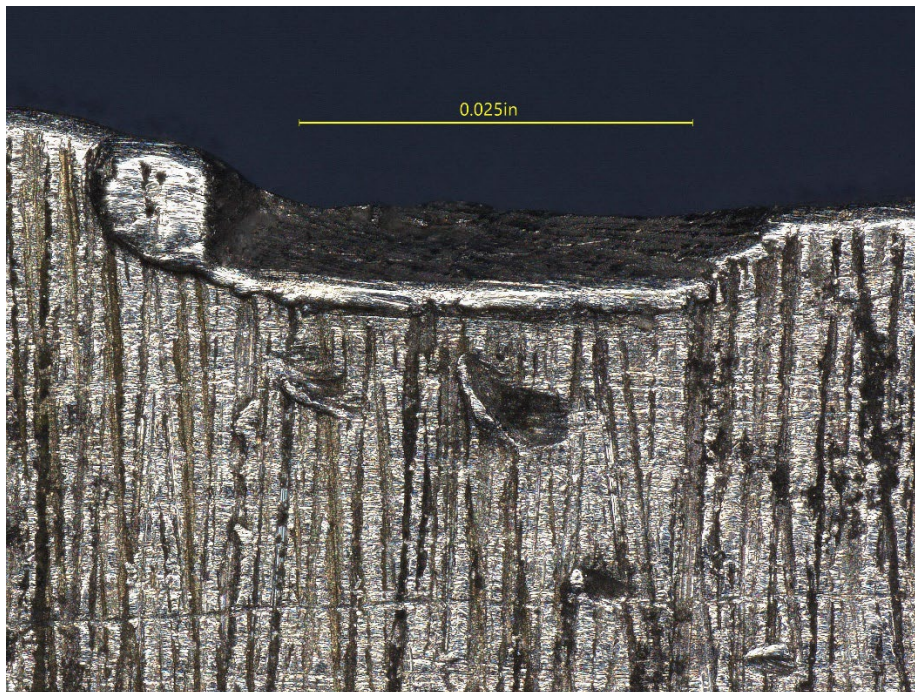


Figure 5. Fatigue crack origin pit with paint removed. View perpendicular to blade face.

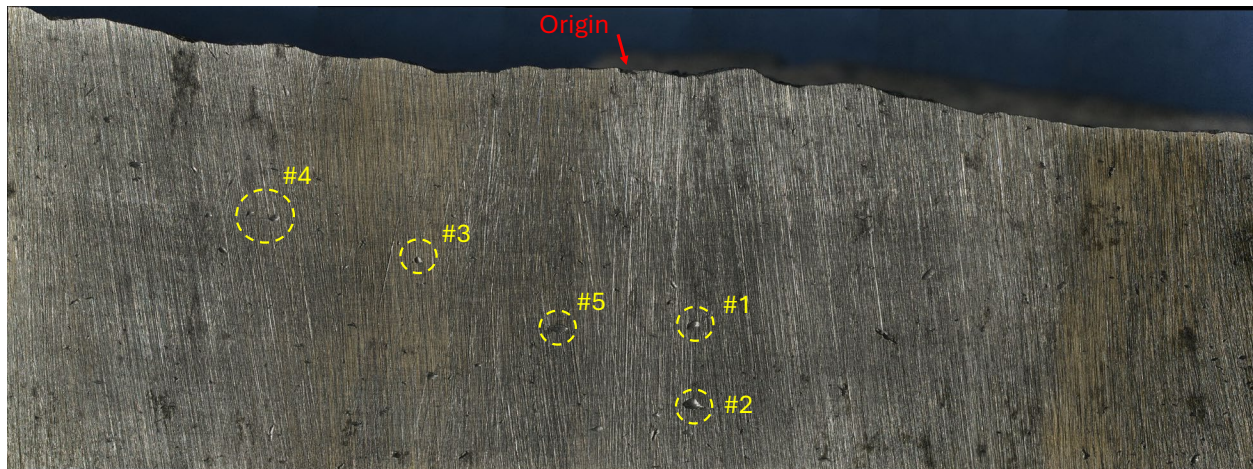


Figure 6. Blade face near origin exhibiting multiple pits.



Figure 7. Pit region #1

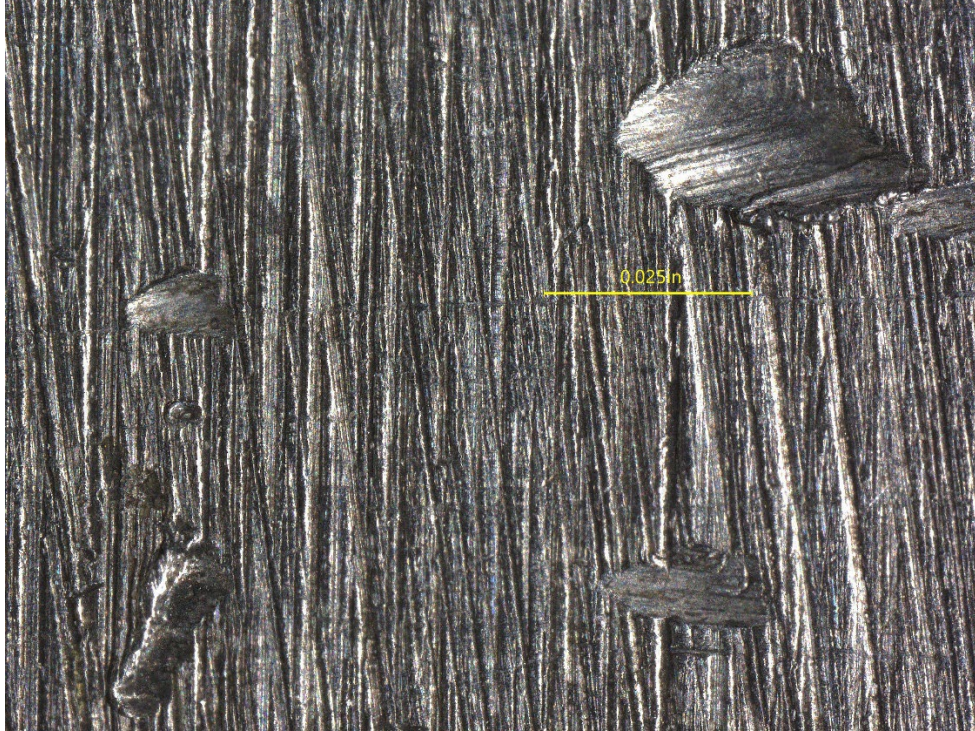


Figure 8. Pit region #2.

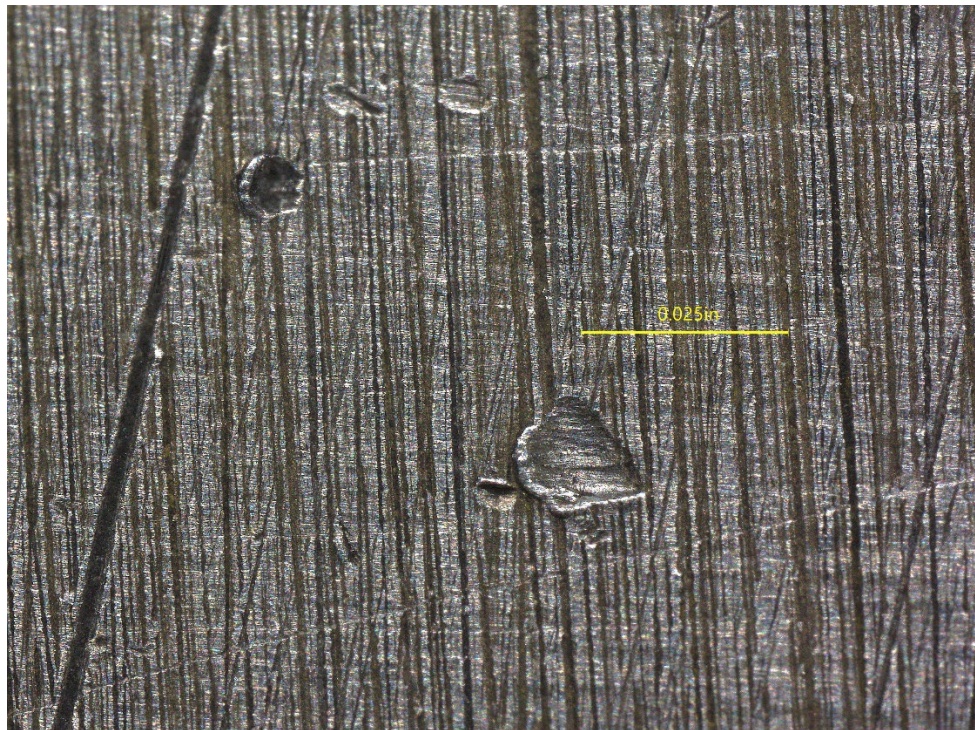


Figure 9. Pit region #3.

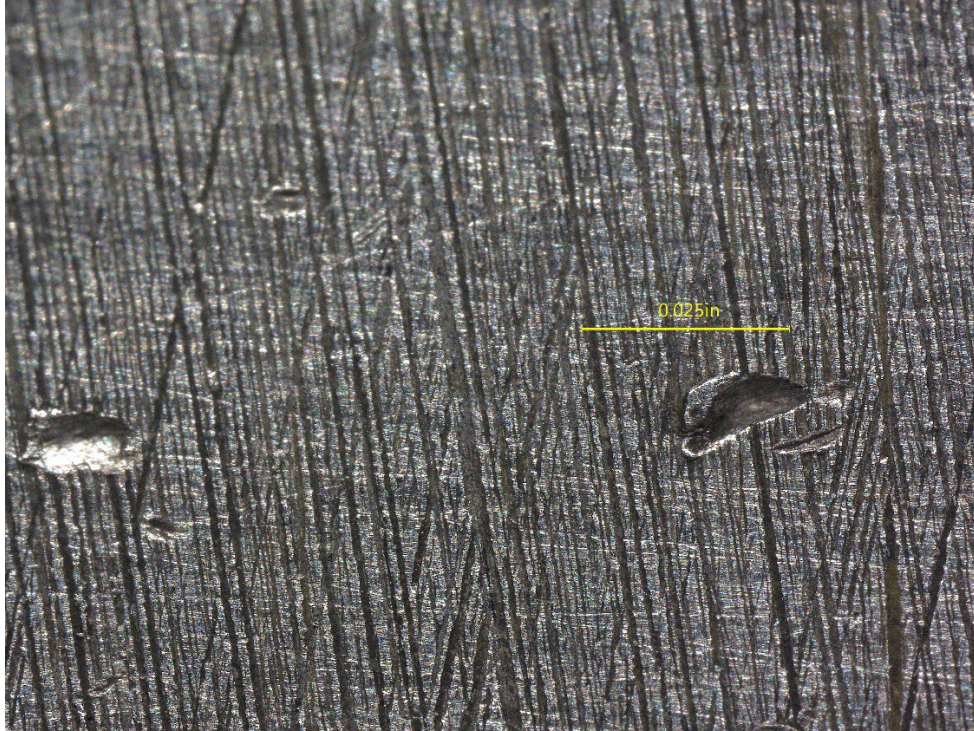


Figure 10. Pit region #4.

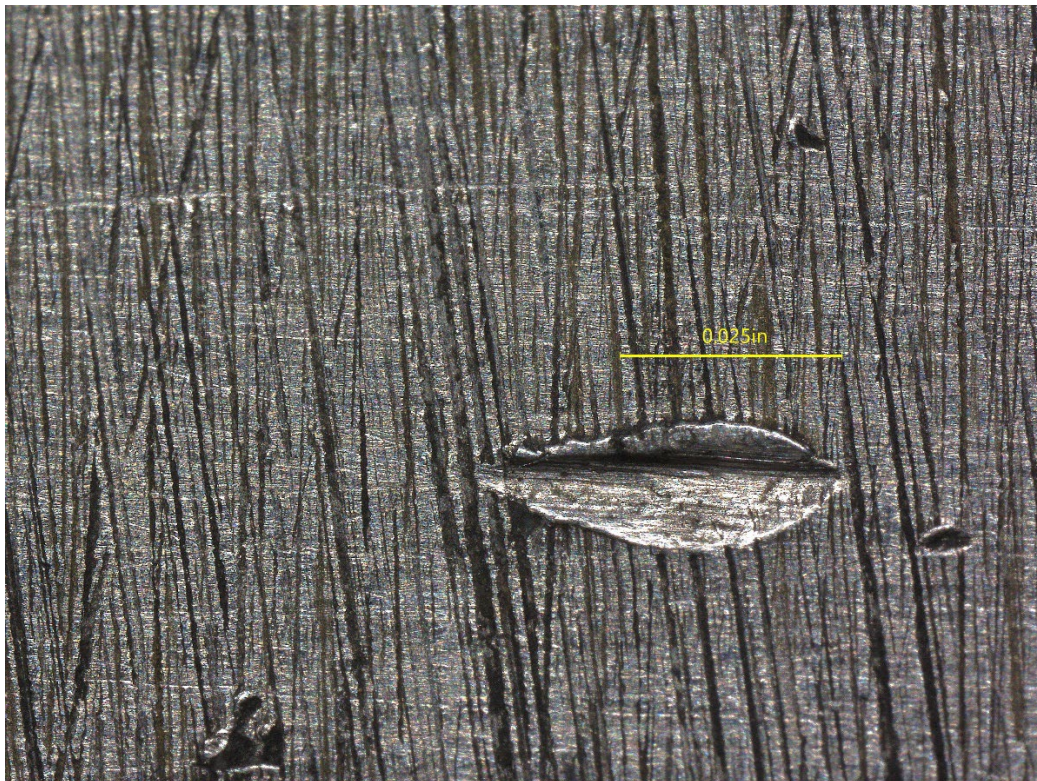


Figure 11. Pit region #5.