

National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



WPR24LA261

MATERIALS LABORATORY

Factual Report 25-083

November 10, 2025

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A. ACCIDENT INFORMATION

Location: Winchester, California
Date: July 27, 2024
Vehicle: Aeronca 11AC, N86270
Investigator: Joshua Cawthra, AS-WPR

B. COMPONENTS EXAMINED

2 portions of a Continental Motors crankshaft

C. EXAMINATION PARTICIPANTS

Specialist Edward Komarnicki
National Transportation Safety Board
Washington, DC

Specialist Donald Kramer
National Transportation Safety Board
Washington, DC

D. DETAILS OF THE EXAMINATION

Figure 1 is an image showing the overall crankshaft as-received with an arrow pointing to the separation area. The as-received images in figure 2 are of the fracture surfaces on the number 1 connecting rod journal edge (left) and the web (right) part of the crankshaft.

The image in figure 3 shows the journal fracture surface after the connecting rod and bearings were disassembled from the journal and cleaned in acetone. The crankshaft fractured at the forward edge of the number 1 connecting rod journal at the transition radius to the crankshaft cheek. The fracture surface was comparatively flat across almost the entire fracture and it exhibited beach marks, consistent with high-cycle fatigue over multiple duty cycles. The beach marks were traced back to an origin that was approximately 19° off bottom center of the journal (figure 3). The fractured journal surface was free of scratches and gouges as shown in figure 4.

Submitted by:

Edward Komarnicki
Engineering Technician

Donald Kramer, Ph.D.
Supervisory Materials Engineer



Figure 1. As-received overall crankshaft showing separation at the connecting rod journal.



Figure 2. As-received images of the journal fracture surfaces at journal edge (left image) and at the web (right image).

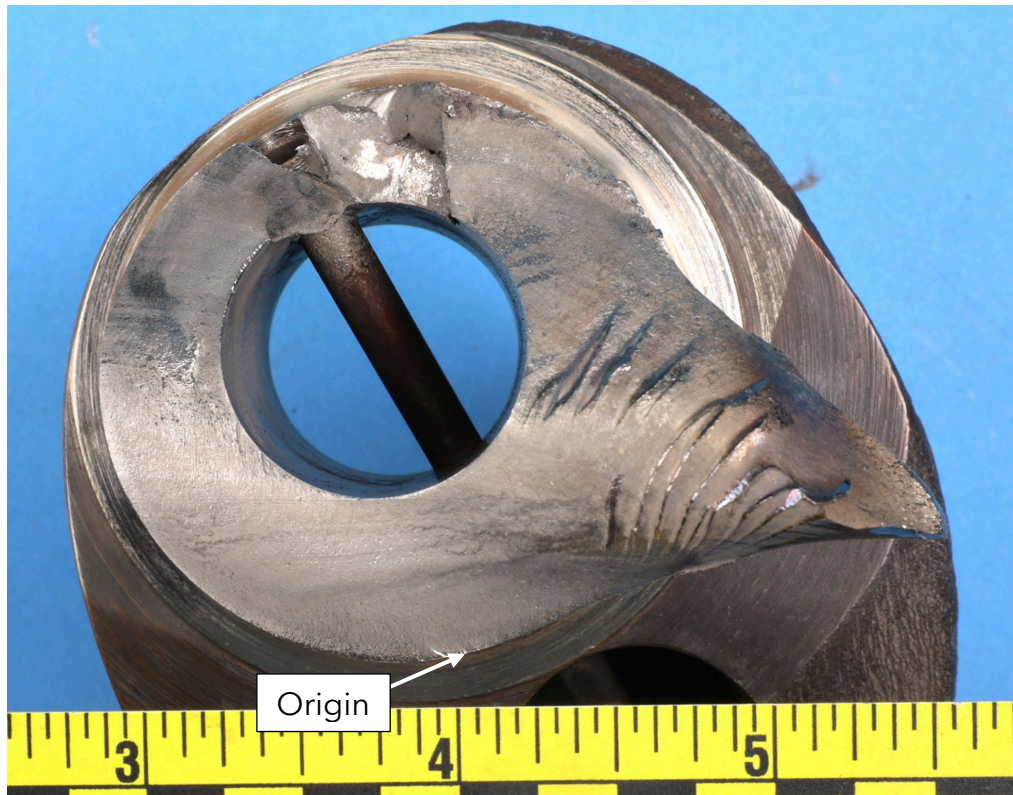


Figure 3. Connecting rod journal fracture surface after disassembly of rod and bearings.

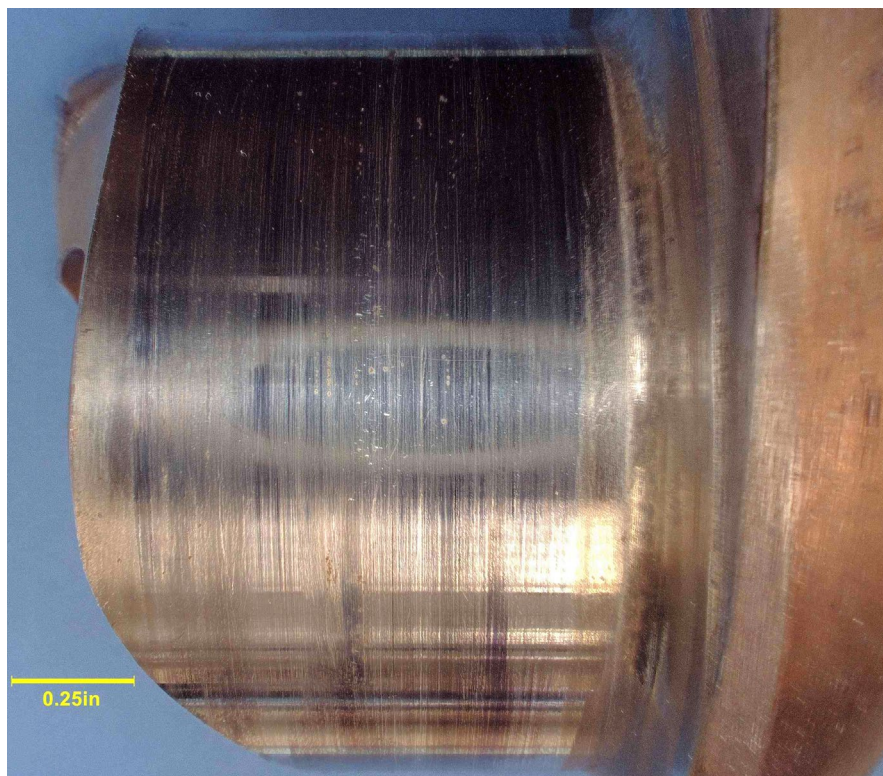


Figure 4. Representative area of the fractured journal surface.