

NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Materials Laboratory Division
Washington, D.C. 20594



November 29, 2018

MATERIALS LABORATORY FACTUAL REPORT

Report No. 18-101

A. ACCIDENT INFORMATION

Place : Jean, Nevada
Date : September 5, 2018
Vehicle : Commander Aircraft Company 114TC
NTSB No. : WPR18FA253
Investigator : Albert Nixon (WPR-AS)

B. COMPONENTS EXAMINED

Fractured elevator bell crank.

C. DETAILS OF THE EXAMINATION

Figure 1 shows a photograph of the fractured elevator bell crank. Bench and scanning electron microscope examination of one half of the fracture face revealed laminar-like fracture features consistent with overstress separation with no evidence of fatigue cracking. Figures 2 and 3 show typical fracture features. Energy dispersive spectroscopy analysis of the fracture face produced a spectrum that contained a major elemental peak of aluminum, consistent with a part that was made from an aluminum alloy.

Frank Zakar
Senior Metallurgist

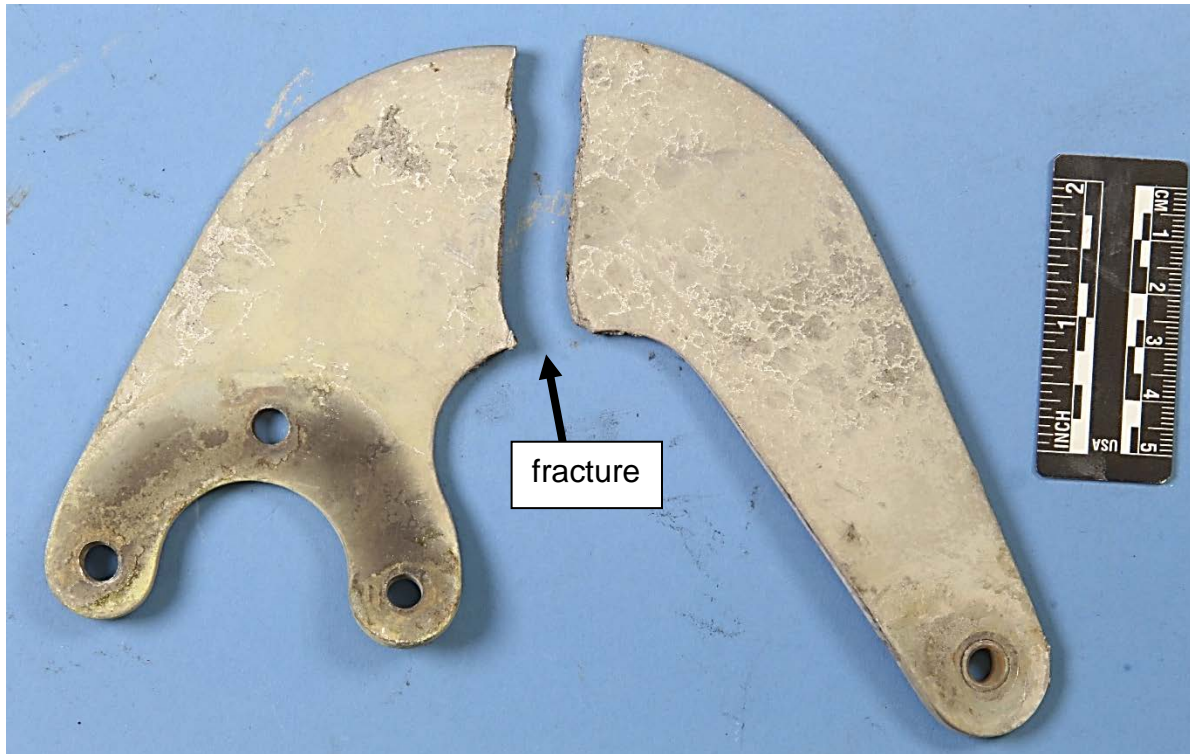


Figure 1. Photograph of the as-received elevator bell crank that contained a fracture.

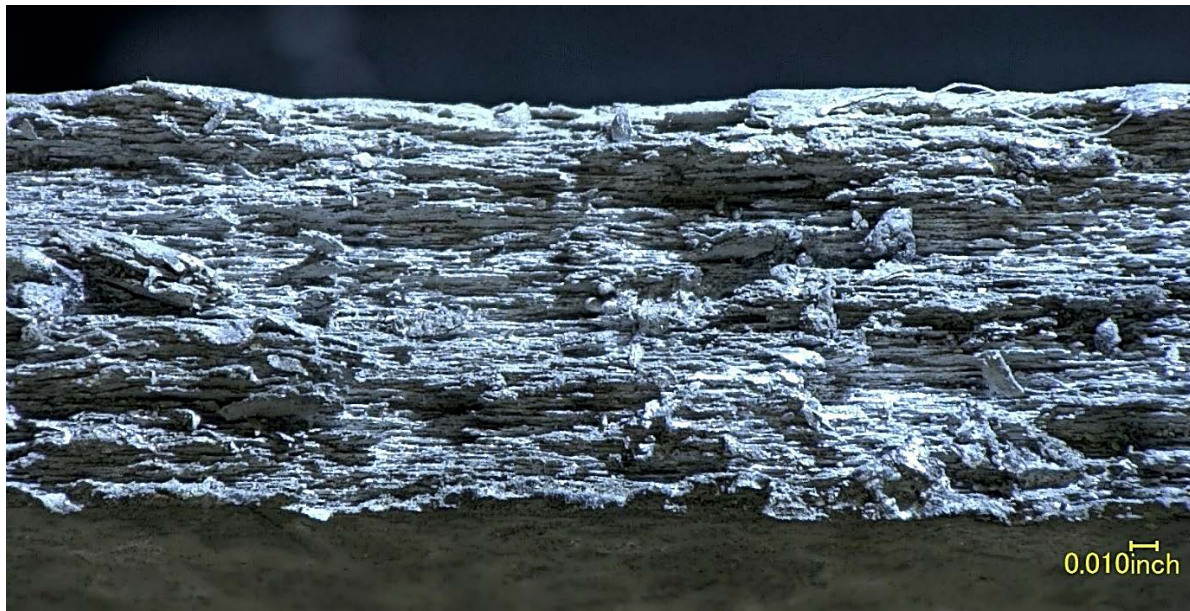


Figure 2. Bench binocular microscope photograph of a typical fracture feature found on one half of the elevator bell crank fracture face.

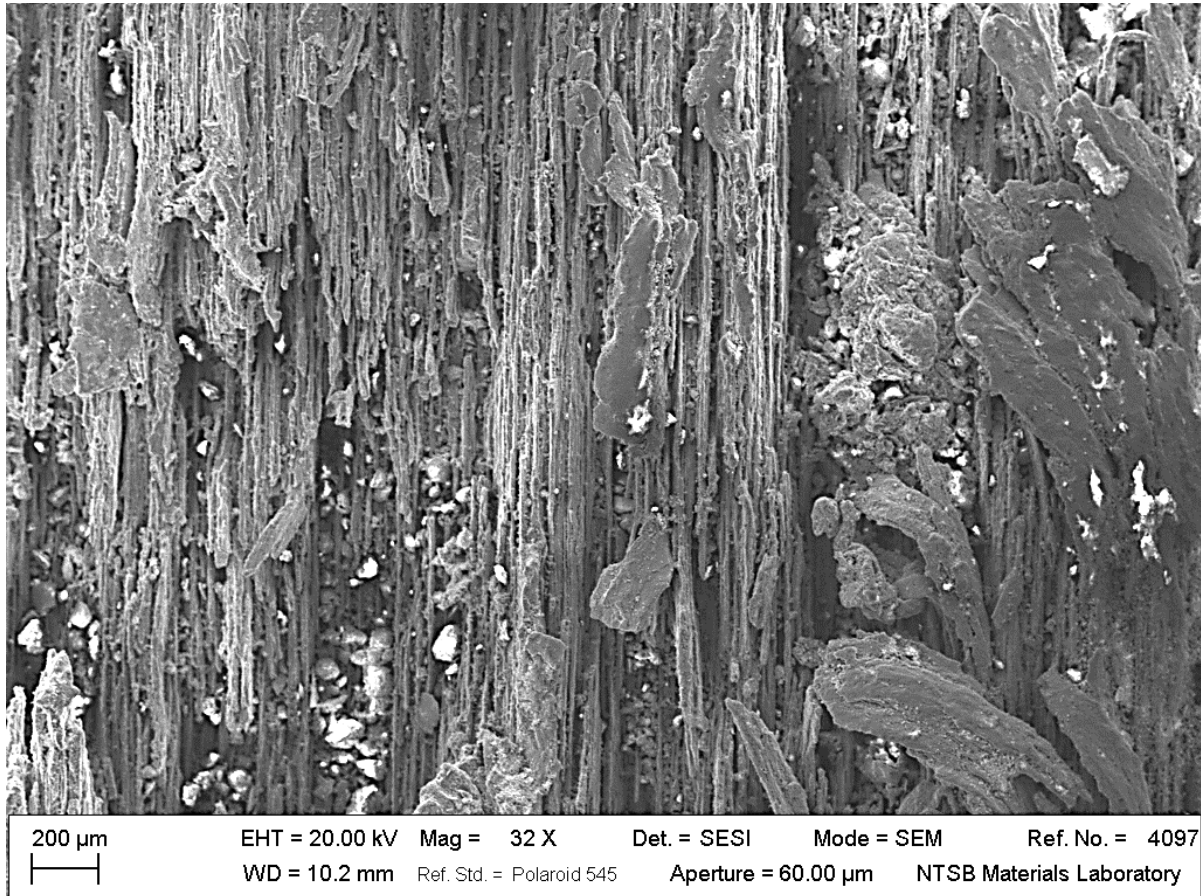


Figure 3. Bench binocular microscope photograph of a typical fracture feature found on one half of the fracture face.