

NATIONAL TRANSPORTATION SAFETY BOARD

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



9/4/2018

MATERIALS LABORATORY FACTUAL REPORT

Report No. 18-071

A. ACCIDENT INFORMATION

Place : Lago Vista, TX
Date : 7/1/2018
Vehicle : Cessna 180, N2469C
NTSB No. : CEN18LA250
Investigator : Andrew Todd Fox

B. COMPONENTS EXAMINED

Portions of left main landing gear (figure 1).

C. DETAILS OF THE EXAMINATION

The fracture surface between the two portions of the left main landing gear spring was a relatively flat surface with a distinct shear lip along the periphery. Close examination of the fracture surface revealed a chevron pattern indicating the direction of crack propagation. The chevron pattern was traced back to an initiation point (figure 2) where a distinct thumbnail shaped area was identified (figure 3). The thumbnail shaped area is consistent with a multiple-origin fatigue crack (figure 4). The approximate dimension of the fatigue crack was 0.14 inch wide and 0.04 inch deep. The location of the fatigue crack is shown in figure 5 along with the outline of contact points of the spring with the landing gear fixation hardware.

Joseph Panagiotou
Fire Protection Engineer

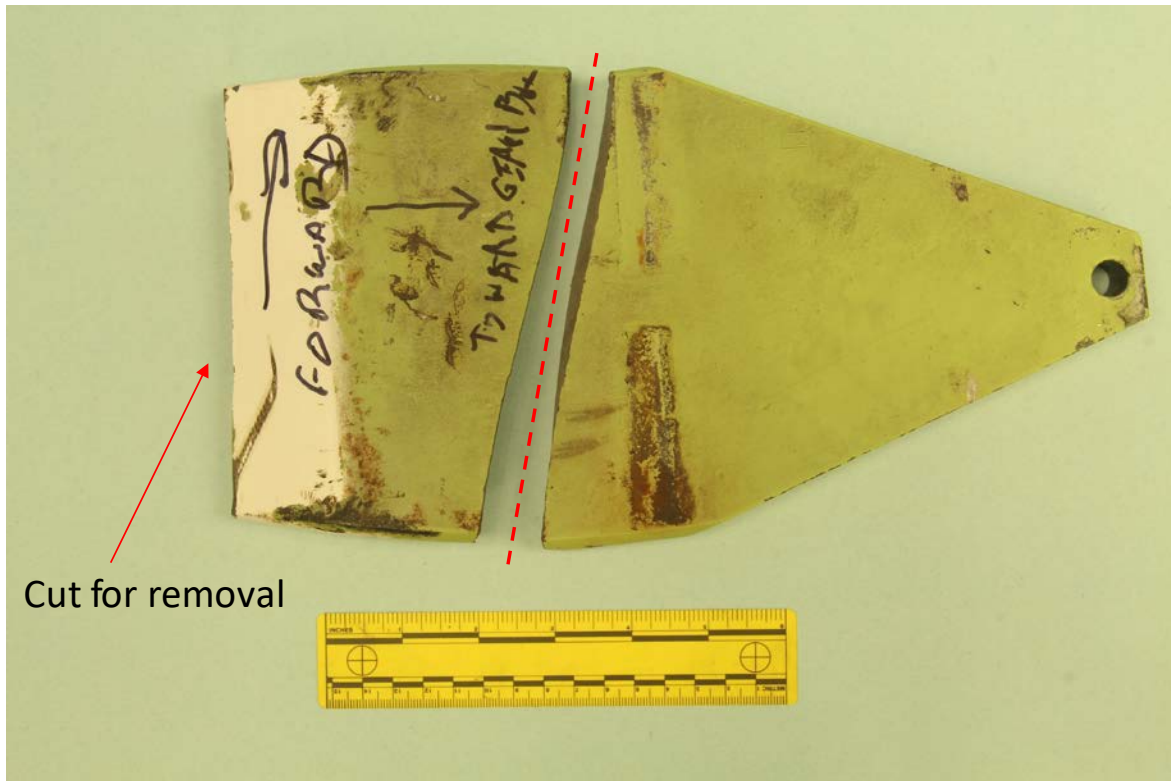


Figure 1: Portions of main landing gear spring as received. Fracture along dotted line.

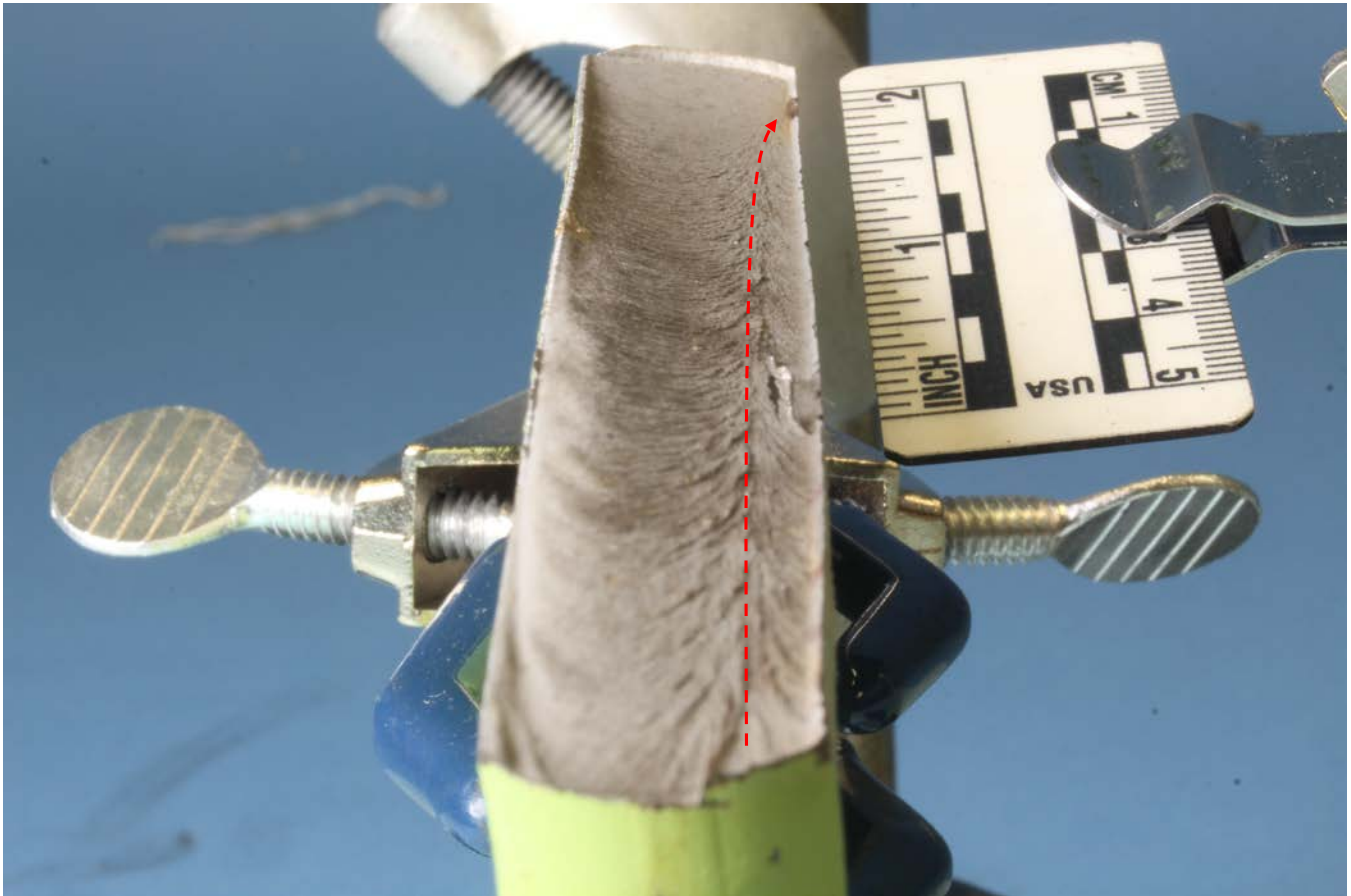


Figure 2: Fracture surface with chevron marks leading back to a fracture origin.



Figure 3: Thumbnail shaped area at the fracture origin.



Figure 4:Thumbnail shaped fatigue crack at fracture origin.

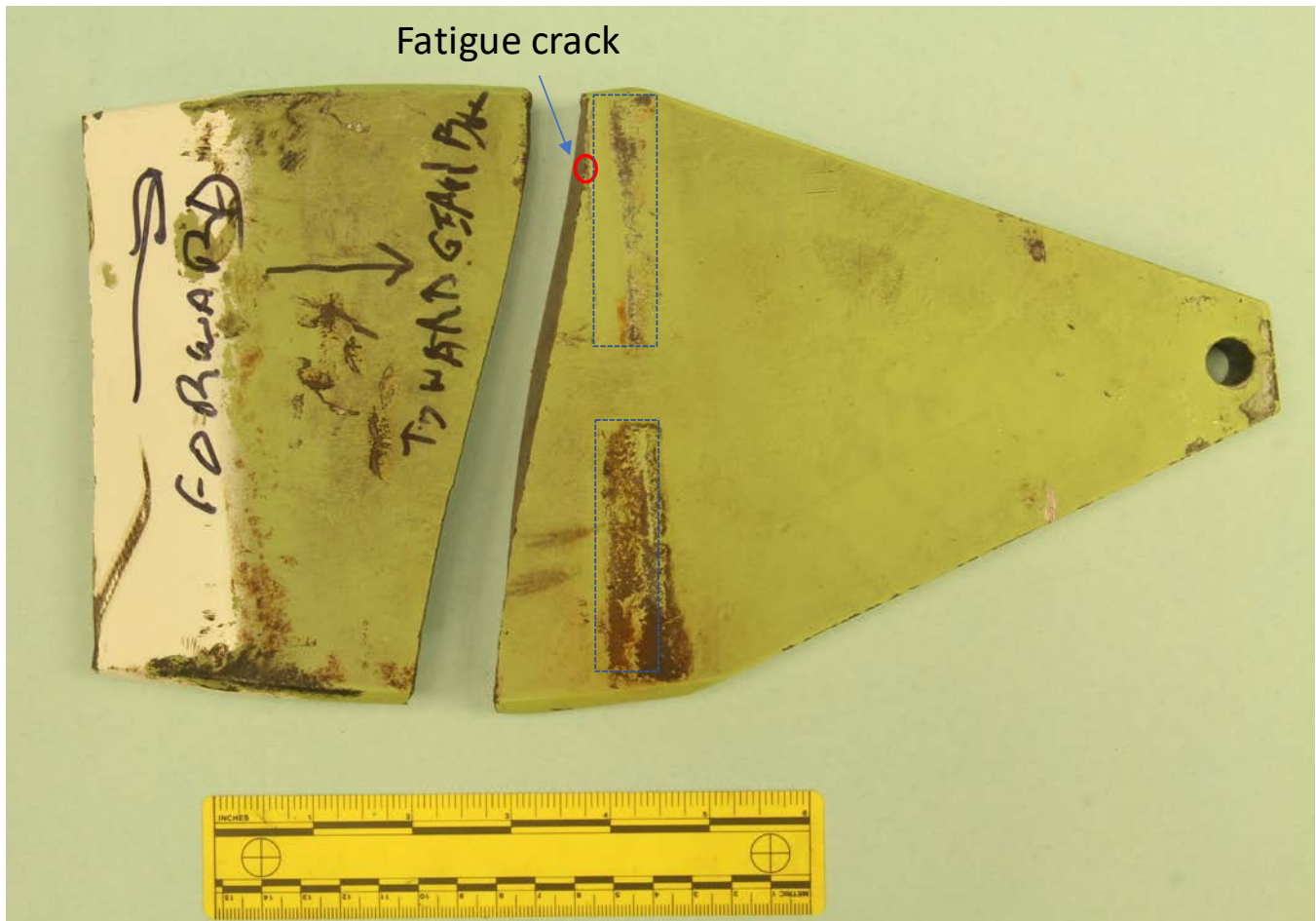


Figure 5: Location of fatigue crack relative to spring and spring fixation contact points. Fixation contact points outlined in blue dotted line. Fatigue crack circled in red.