

NATIONAL TRANSPORTATION SAFETY BOARD

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



12/6/2016

MATERIALS LABORATORY FACTUAL REPORT

Report No. 16-103

A. ACCIDENT INFORMATION

Place : Canandaigua, NY
Date : August 20, 2016
Vehicle : E-AB Kitfox 4-1200, N51TM
NTSB No. : ERA16LA296
Investigator : Bob Gretz

B. COMPONENTS EXAMINED

Rudder pedal control tube (figure 1).

C. DETAILS OF THE EXAMINATION

The rudder pedal control tube fractured at a fillet welded, ninety-degree intersection of tubing. The fracture occurred in the base metal of the horizontal tube and the weld deposit remained with the vertical portion of tubing (figure 2). Examination of the fracture surface revealed characteristics of an overstress fracture over the majority of the surface with the exception of one area exhibiting a thumbnail like feature (figure 3). This thumbnail like feature is consistent with a fatigue crack initiating at the toe of the weld (figure 4).

Joseph Panagiotou
Fire Protection Engineer

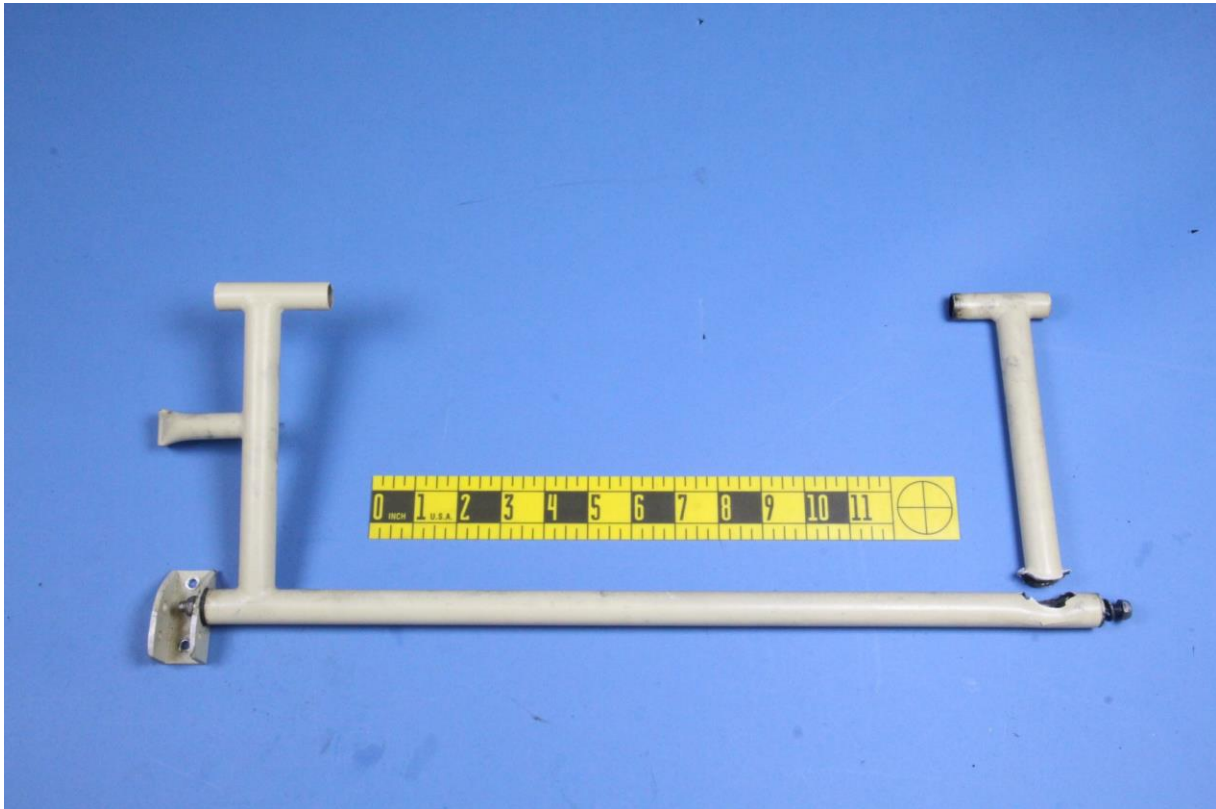


Figure 1: Rudder pedal control tube as received.



Figure 2: Fracture between the horizontal and vertical portions of the rudder pedal control tube.

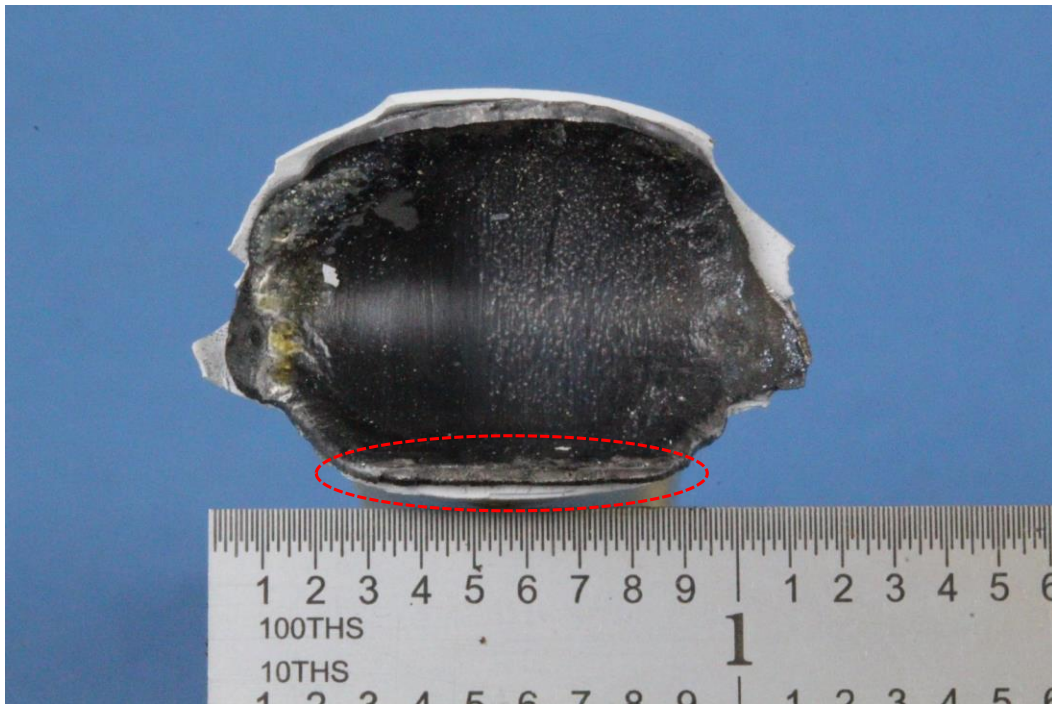


Figure 3: Close up view of fracture surface with thumbnail like feature circled in red.

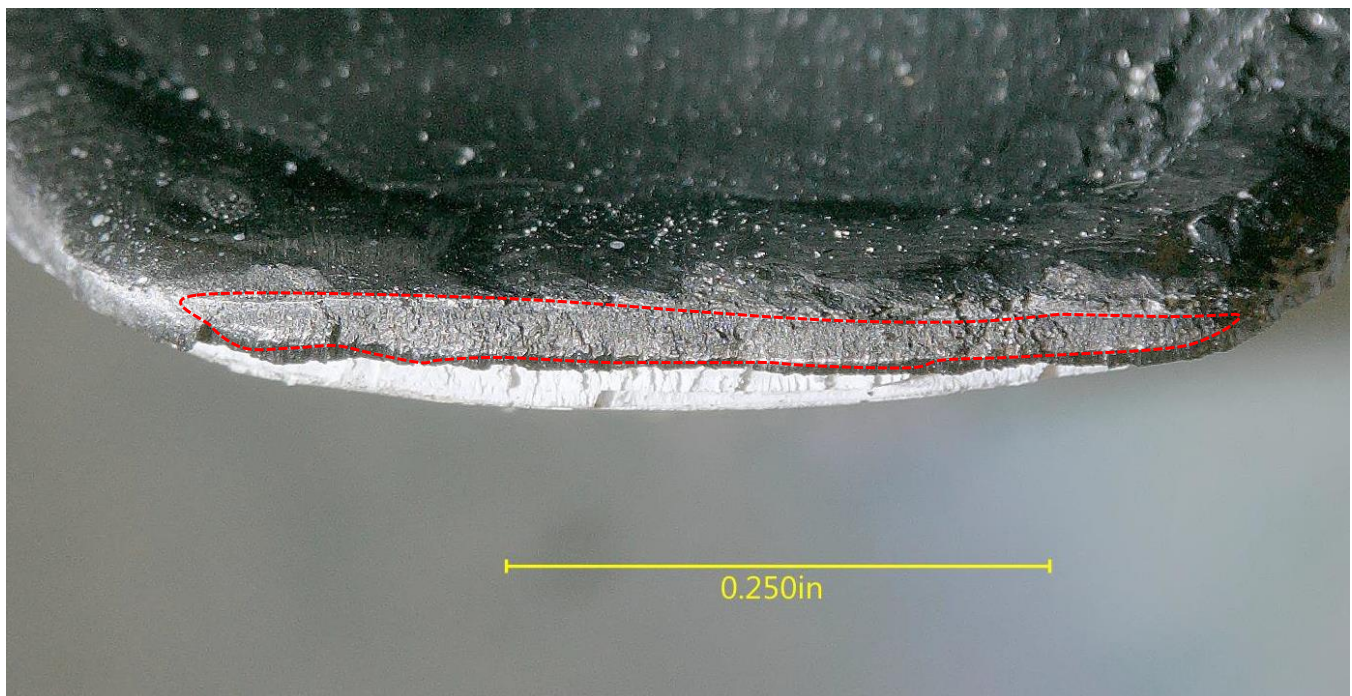


Figure 4: Fatigue crack region on edge of tube. Thumbnail outlined in red.