

NATIONAL TRANSPORTATION SAFETY BOARD

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



November 18, 2020

MATERIALS LABORATORY FACTUAL REPORT

Report No. 20-060

A. ACCIDENT INFORMATION

Place : Los Angeles, California
Date : 11/6/2020
Vehicle : Agusta A109 (N109EX)
NTSB No. : WPR21LA039
Investigator : Fabian Salazar

B. COMPONENTS EXAMINED

1. Pieces of the tail rotor push-pull tube and rod end.

C. DETAILS OF THE EXAMINATION

The as-received pieces of the tail rotor push-pull tube with rod end are shown in Figure 1. Close views of the fracture are shown in Figure 2. All fracture and deformation features are consistent with bending overstress fracture in the tapered section of the aluminum push-pull tube adjacent to the rod end internal threads. No pre-existing corrosion damage was observed.

Michael Budinski
Chief, Materials Laboratory Division

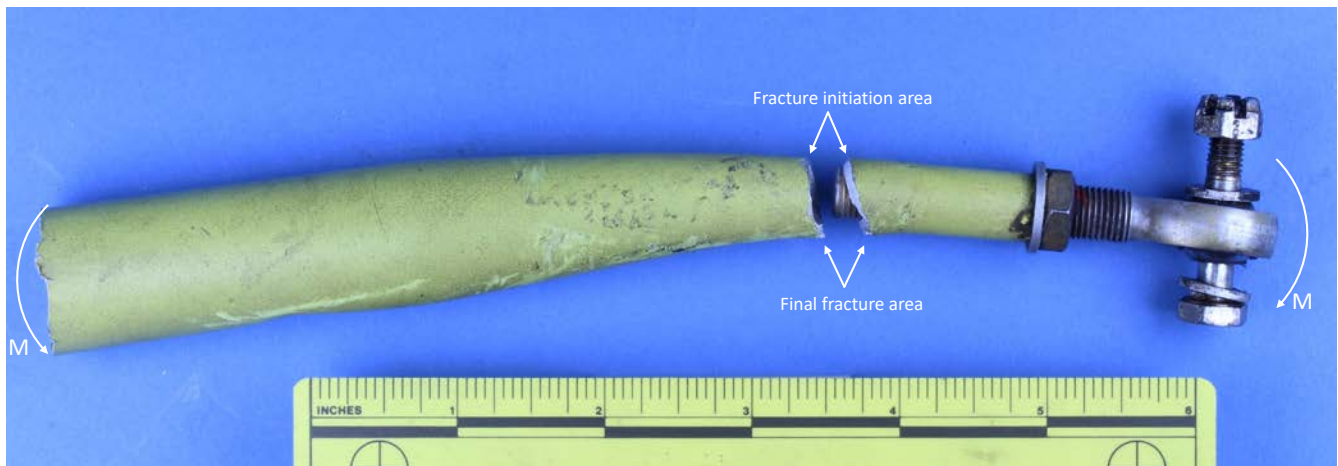


Figure 1 Image of the as-received pieces of fractured tail rotor push-pull tube and rod end. The image has been annotated to reveal the initiation and final fracture areas and the direction of the bending moment, M , to open the crack.

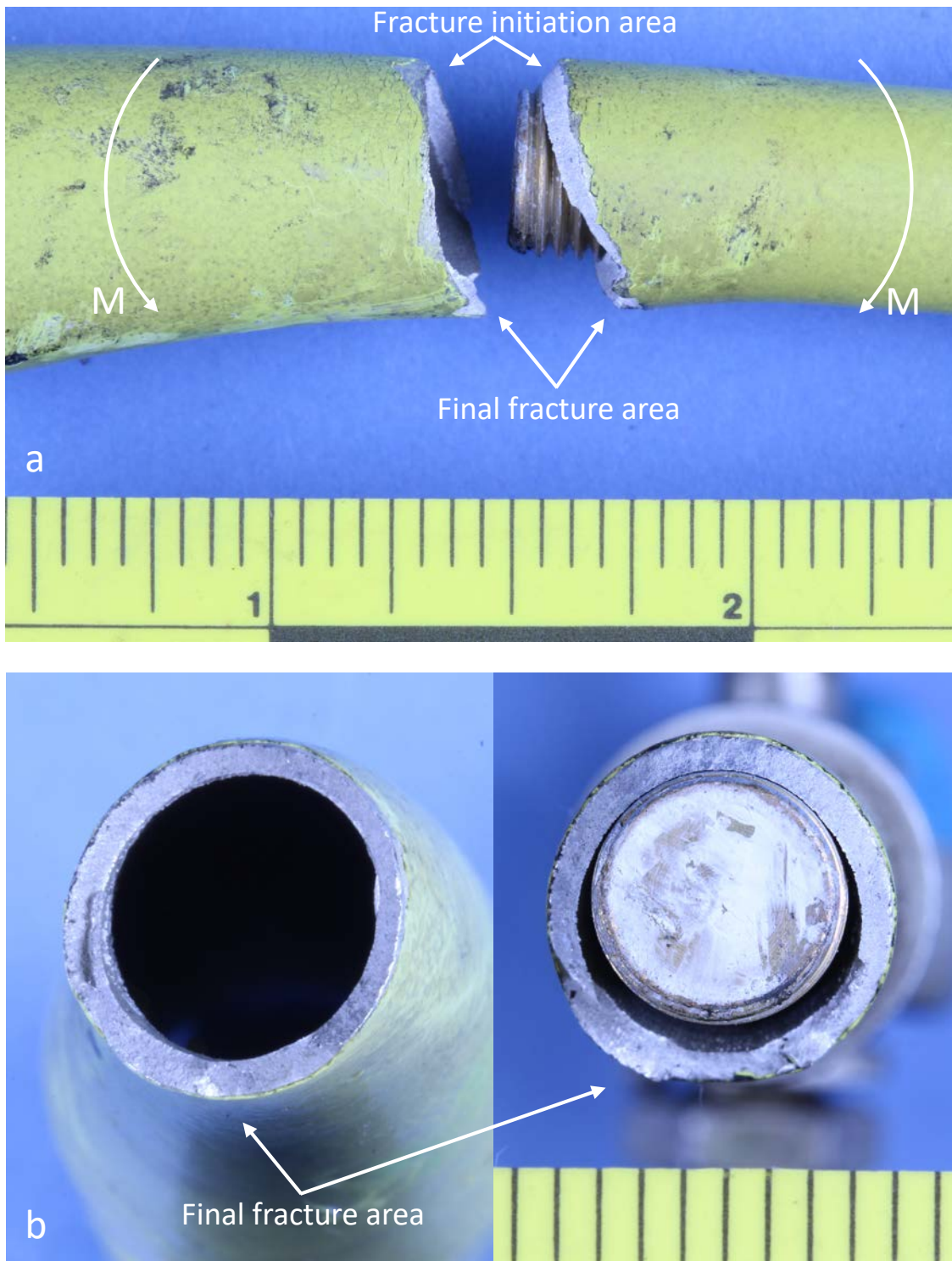


Figure 2 Closer views of the fracture in the tail rotor push-pull tube. View (a) is a side view. View (b) shows both halves of the fracture from top down.