

# NATIONAL TRANSPORTATION SAFETY BOARD

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



July 23, 2019

**MATERIALS LABORATORY FACTUAL REPORT**

Report No. 19-032

## **A. ACCIDENT INFORMATION**

Place : Fellsmere, Florida  
Date : March 5, 2019  
Vehicle : Piper PA-28-161, N556PU  
NTSB No. : ERA19FA116  
Investigator : Leah Read

## **B. COMPONENTS EXAMINED**

ELT antenna cable with fractured section that attaches to the antenna at the airframe.

## **C. DETAILS OF THE EXAMINATION**

Figure 1 shows a photograph of the as-received ELT antenna cable with fractured section that attaches to the antenna at the airframe. The adapter assembly at the fractured end was disassembled to facilitate handling and examination. The core of the adapter assembly contained a plastic tube-like portion that was fractured on a slant plane relative to its longitudinal axis, consistent with overstress separation. The disassembled adapter assembly was ultrasonic cleaned with a mild detergent solution. The fracture face of the plastic portion was coated with gold-palladium by vapor deposition method, as preparation for scanning electron microscope (SEM) examination. SEM examination of the plastic fracture face revealed no evidence of fatigue cracks (crack arrest marks).

Frank Zakar  
Senior Metallurgist



Figure 1. As-received ELT antenna cable with fractured section that attaches to the antenna at the airframe.