
NATIONAL TRANSPORTATION SAFETY BOARD

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



December 17, 2019

MATERIALS LABORATORY FACTUAL REPORT

Report No. 19-082

A. ACCIDENT INFORMATION

Place : Watkins, CO
Date : 12/25/2018
Vehicle : RV-6
NTSB No. : CEN19LA048
Investigator : Courtney Liedler

B. COMPONENTS EXAMINED

Fuel supply components as shown in figure 1.

C. DETAILS OF THE EXAMINATION

The fuel supply components shown in figure 1 were assigned numbers for reference in the examination. The fuel supply components were examined using a stereo microscope.

Component #1 was a piece of fuel line approximately 3.5-inch-long with a female nut on one end and nothing on the other end. This portion of fuel line was labeled as having been attached to the fuel pump output. The end with no fitting had been connected to the fuel pump output. This portion of fuel line exhibited exposure to a high temperature fire environment. The interior of the fuel line was burnt and no longer present leaving only the braided sheathing. The interior of the female fitting exhibited gold and blue colored oxides consistent with a high temperature exposure. There was no debris inside the fitting and the threads appeared normal.

Component #2 was a piece of fuel line approximately 3-inch-long with female fittings on both ends. This piece of fuel line was described as "fuel line from carb (into carb from fuel pump)". The fuel line was soot stained and exhibited thermal damage consistent with exposure to a fire environment. The female fitting labeled as "carb side" did not exhibit colored oxides on the interior or any soot. The threads on this fitting appeared normal. The female fitting labeled "pump side" exhibited gold and blue oxides on the interior consistent with a high temperature exposure (Figure 2). No soot was observed on the interior of this fitting and the threads appeared normal.

Component #3 was a piece of fuel line with female fittings on both ends. The fuel line exhibited thermal damage and soot on the exterior consistent with exposure to a fire environment. One of the female fittings contained a portion of the nipple it had been attached to (component #3-A, Figure 1). After removing the portion of the nipple remaining within the female fitting, blue and gold colored oxides were observed on the interior (Figure 3). The fitting did not contain any soot and the threads appeared normal.

The fitting on the other end of this fuel line did not exhibit colored oxides on the interior but it contained soot deposits for the first 3 threads into the fitting (Figure 4).

Component #4 was described as a “fuel transducer between the fuel line from carburetor and pump”. This component exhibited oxidation and staining consistent with exposure to a fire environment.

Joseph Panagiotou
Fire Protection Engineer

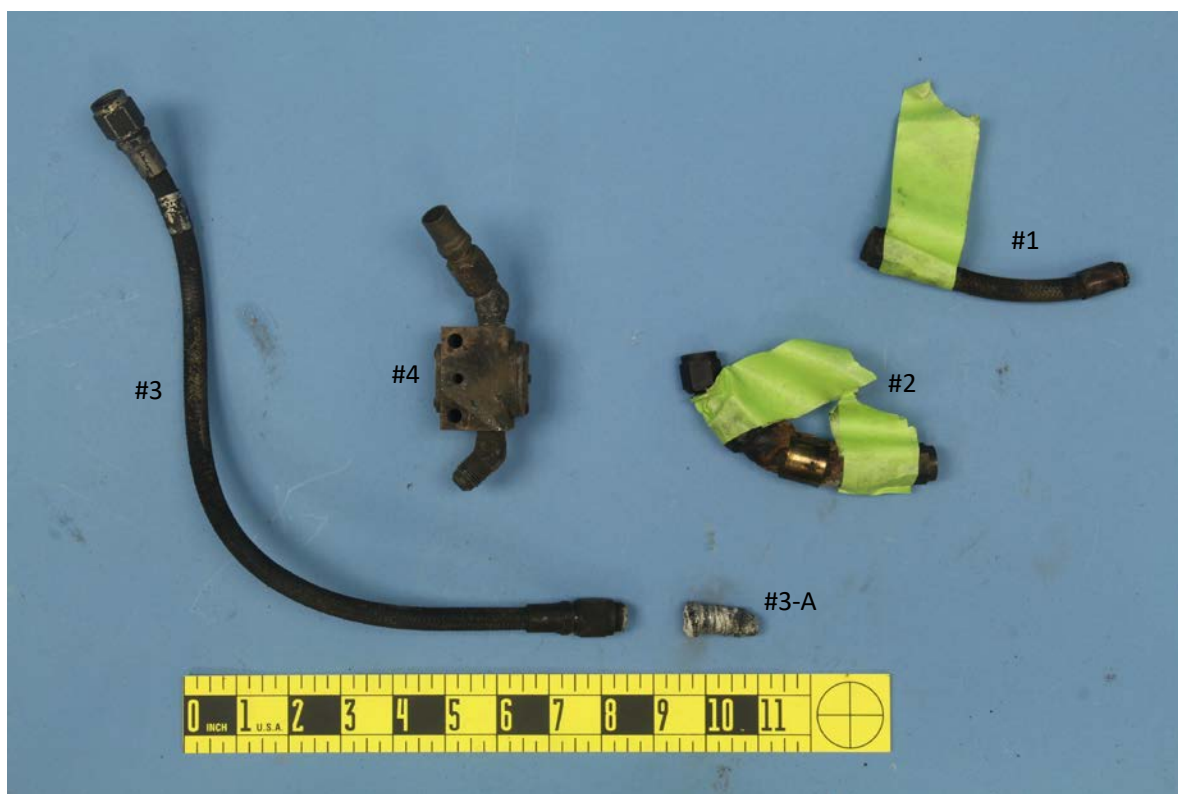


Figure 1: Fuel system components as received.



Figure 2: Pump side and carb side fittings of component #2.



Figure 3: Fitting from component #3 with oxides from high temperature exposure.



Figure 4: Fitting from component #3 with soot deposits inside. Two views of the same fitting.