

Report number: ML12162021	
Date: 12/16/2021	
 METALLURGICAL REPORT	<u>Distribution</u> 1] Phillip Grice
Subject: Fuel Line P/N 649101	

A fractured fuel line assembly presented for inspection included a broken line and associated assembly components. The fractured area and mating components are shown in figure 1. The fracture initiated near the intersection of the brazed components and propagated around the tube in fatigue, as shown in figures 2-4. The initiation area is smoother in appearance than the termination, which is jagged and has a deformed edge. The braze joint appears sound, and the fracture occurred in the steel.

CONCLUSION:

- 1] The fracture occurred in fatigue, initiating in the heat affected zone of the brazed joint. The joint itself was not affected by the fracture.
- 2] No material anomalies were observed.



Michael E. Byrnes, PE



Figure 1 Fractured fuel line assembly with flared end (left) and tube (right)



Figure 2 Side view of tube end of fracture

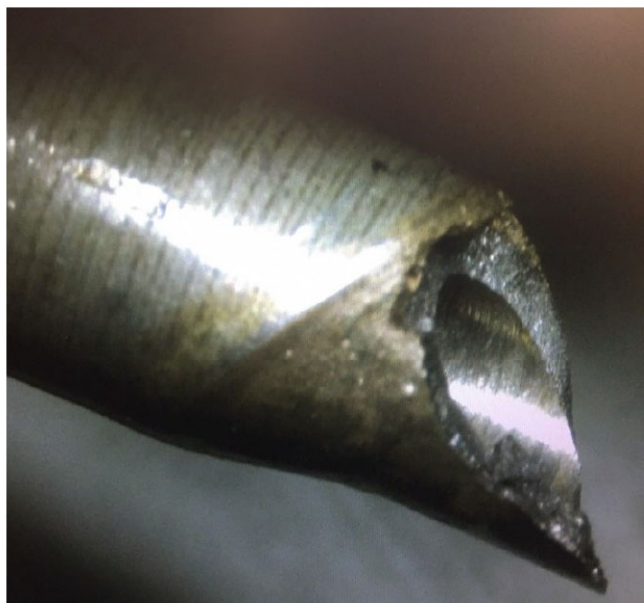


Figure 3 Side view of fitting end of fracture

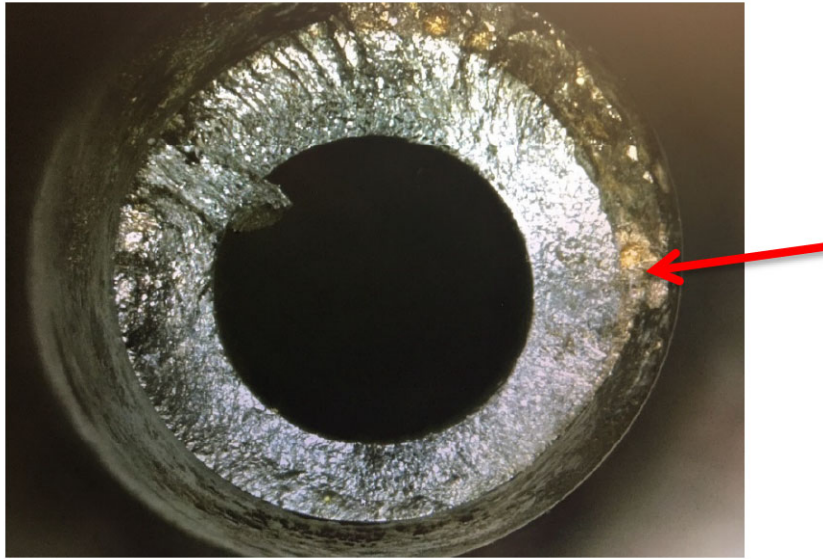


Figure 4 Fitting end fracture with initiation area marked



Figure 5 Side view of fitting end fracture with initiation area marked