

Report number: ML1010426	
Date: 12/2/15	
 Continental Motors, Inc. <i>Powering Aircraft Since 1929</i> CONTINENTAL MOTORS METALLURGICAL REPORT	<u>Distribution</u> 1] Phillip Grice
Subject: AN911 J fitting from N857SW	

Summary:

A broken fitting from the above registered aircraft, engine serial 1010426 was submitted for analysis under analytical exhibit 1296. Also included were the oil cooler and mating components. The results of this report closely follow those of report M2015-CA543 from 1/9/15.

Investigation:

The as received condition is shown in figures 1 and 2. The fitting AN911 J, shown in figure 3, is commercially available pipe nipple fitting made of 304 stainless steel.

The fracture occurred in fatigue originating from a thread root at the joint made be the nipple and the mating bushing.

The hardness of the nipple measured 34 HRC, which is a typical hardness for 304 stainless steel.

Conclusions:

[1] The part separated in fatigue initiating at a thread root at the assembled intersection of the pipe nipple and bushing.

[2] Hardness correlates to tensile strength, indicating the part had typical mechanical properties.

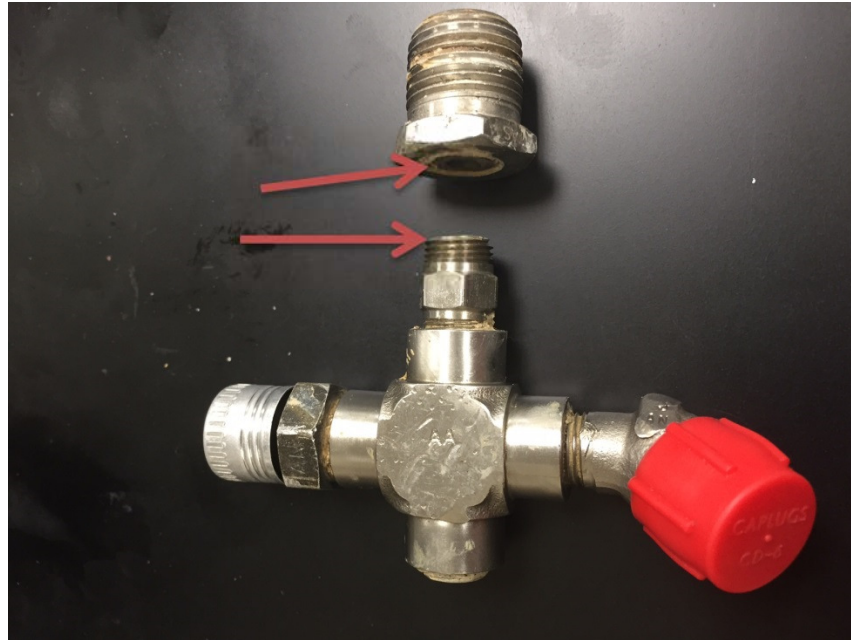


Figure 1 - As received condition with fracture surfaces indicated by arrows

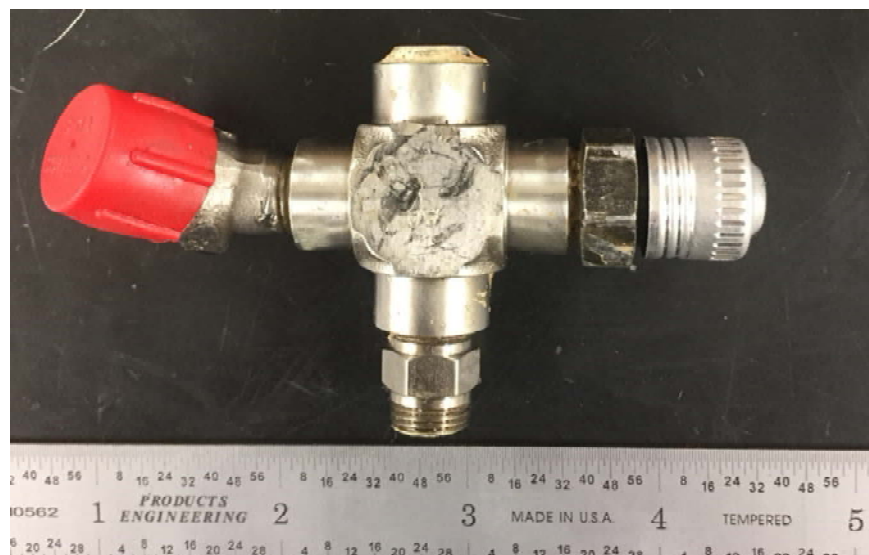


Figure 2 Fittings have had some wrench or vise damage



Figure 3 Bushing is part number AN911-1 J

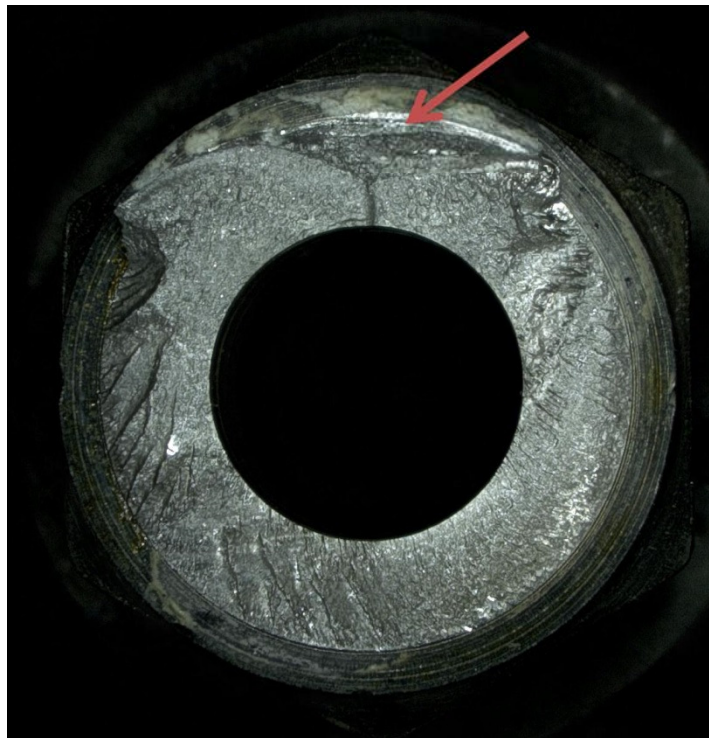


Figure 4 fracture surface of pipe nipple with initiation area indicated by the arrow

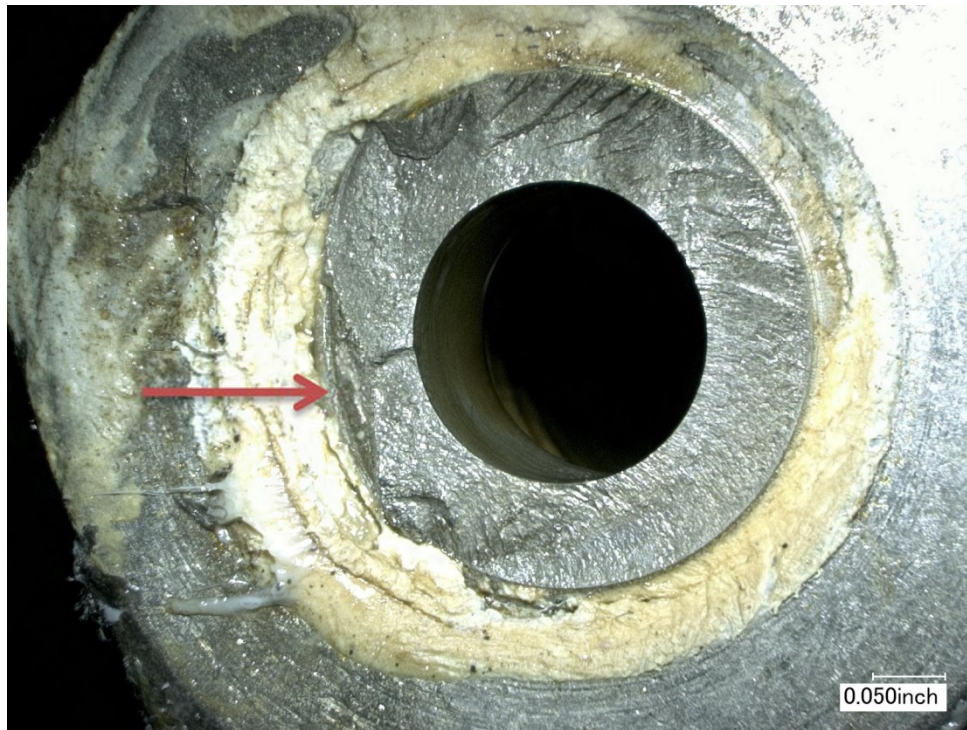


Figure 5 Bushing side fracture with initiation area with initiation area indicated by arrow