

Cessna 182R, Failed Fuel Injection Intake Tube, ATA 3710

A significant problem occurred in the fuel induction system, where a rubber intake tube connects the intake manifold to the fuel induction rail. Shortly after a flight and the pilot experienced an entirely normal operation, the engine restart would not work. The rubber tube separated from the intake manifold, causing a large vacuum leak, downstream of the carburetor, and rendering the engine inoperable.

The probable cause was incorrect installation of the rubber tube at engine overhaul, 262 hours previously. The failed connection was between the Y-shaped intake manifold and the fuel rail on the right side. This could result from 1) failing to force the rubber tube far enough onto the manifold tube or 2) failing to seat the hose clamp far enough in from the end of the manifold tube. Another possible cause is the clamp or hose worked loose in normal operation.

To prevent recurrence, the pilot suggest the following:

- a) The rubber connecting tube on the intake manifold must achieve maximum depth on both the intake manifold and fuel rail.
- b) The clamp position is critical to maintain the position of the rubber tube on the manifold, since there is no enlargement bead at the end of the manifold tube.
- c) Use a correct torque on clamps and consider safety wire to prevent loosening.
- d) Consider preparation of the surface; for example, removing paint and lubricants at assembly time.

The consequences of this failure would have been much more serious if the separation had occurred in flight and causing a complete power loss."

Part Total Time: 262 hours.