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Subject: Carburetor Air Inlet Hose Test & Research Summary

The carburetor air inlet hose on the accident airplane was removed and sent to Piper Aircraft for examination to determine if it was the correct part. The results of the examination showed that it was not the correct part, and that the accident airplane air inlet hose was fashioned from a longer section of tubing that was not made to the same specifications as the one offered in the Piper parts catalog.

The airplane manufacturer compared a carburetor air inlet hose from their stock to the one that was installed on the accident airplane and performed other checks to compare both against the drawing specifications. The stock part had a cuffed end on the hose and the wound wire stiffener in the hose ended where the cuff began. The end of the stock hose was uniformly cut. The accident airplane's hose had indications that the wire originally went all the way to the end of the hose. The end of the accident airplane hose was uneven indicating it was likely cut by hand from a larger section of hose. See Figure 1.

The wall thickness of the hose on the accident airplane measured 53% thinner than the correct part. This was noted as a likely indication that the hose was single ply instead of double ply material. This was important as the correct part is rated for a negative pressure of -24 inches of mercury (in. Hg).

Federal Aviation Administration (FAA) Special Airworthiness Information Bulletin (SAIB) CE-114-23 was published August 6, 2014, regarding carburetor air inlet hoses on Piper Aircraft, Inc. (Piper) Models PA-28, PA-32, PA-34, PA-44, and PA-46 series airplanes. The SAIB cited an accident where the carburetor air inlet hose had not been approved for the airplane's type design and had collapsed and restricted airflow to the engine resulting in a loss of engine power. The SAIB recommended

owners of the affected models inspect their airplanes to verify an approved Piper carburetor air inlet hose was used and in serviceable condition.

A review of NTSB Case Analysis and Reporting Online (CAROL) data showed that since the date of the SAIB's publication there have been three additional accidents (ERA17LA128, CEN17FA139, CEN22LA377) where the carburetor air inlet hose was causal or potentially causal to an engine power loss event.



Figure 1 - comparison of stock hose (right photo) to accident airplane's installed hose (left photo). Photo courtesy of Piper Aircraft.