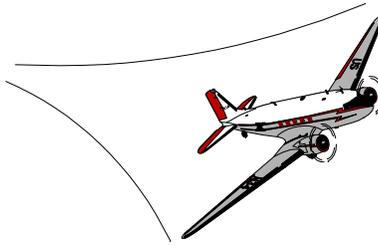


# SPECIAL AIRWORTHINESS INFORMATION BULLETIN



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

AIRCRAFT CERTIFICATION SERVICE  
800 INDEPENDENCE AVENUE, S.W.  
WASHINGTON, DC 20591

No. ACE-98-17  
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This is issued for informational purposes only and any recommendation for corrective action is not mandatory.

The purpose of this Special Airworthiness Information Bulletin (SAIB) is to advise owners/operators of Ayres Corporation models S2R-T11, S2R-T15, S2R-T34, S2RHG-T34, S2R-T45, S2R-T65, S2RHG-T65, S2R-G1, S2R-G5, S2R-G6, S2R-G10 and any model S-2D, S-2R, S25-R1340, S2R-R1820 or S2R-R3S which has been converted to the turbine engine configuration of the safety information contained in Service Bulletin (SB) No. SB-AG-40, dated October 30, 1997, entitled "Fuel Tank Inspection". This information is valuable to anyone who operates one of the above listed airplanes because of the possibility of contamination of the fuel system and resultant loss of engine power. The SAIB is advisory in nature and not mandated by regulation.

## **Background**

Issuance of SB No. SB-AG-40 was prompted by reports of silicone rubber compound clogging fuel lines. There were two reports of accidents involving model S2R-G10 airplanes; one resulted in the destruction of the airplane while the other resulted in only minor damage to the airplane. Fortunately, neither pilot was seriously injured. There were also reports of silicone rubber being found during fuel system maintenance of two additional airplanes, a S2R-G10 and a S2R-G6.

The silicone rubber found was of two different types: type one was black in color, irregular in shape and approximately one inch long by one-half inch in width and height; the other was red/brown in color, basically "pencil eraser" shaped and approximately three-eighths inch long by one quarter inch in diameter. Chemical analysis was used to determine that both of the initially unknown materials were, in fact, silicone rubber.

An investigation revealed that it is highly unlikely for the contamination to have been introduced into the fuel system at the factory. It is therefore concluded that these silicone rubber compounds were introduced into the system after manufacture. Silicone rubber is not compatible with jet fuel; it enlarges several times the original size when placed in contact with or immersed in jet fuel. In the above accidents, globules/pellets of the material enlarged, were swept into and blocked one or more of the fuel lines from the wing fuel tanks to the header tank thereby restricting the fuel flow to the engine.

The source of the contamination has not been determined. The airplanes noted above were located in different parts of the country and do not share a common history. A possible scenario is that silicone rubber is being used to seal refueling hoses/nozzles, tank fittings, etc. and excess material at joints could break loose and either fall or be swept into the airplane fuel tank. Obviously, silicone rubber should not be used in any hose, tank, nozzle, etc., which comes in contact with jet fuel.

**Recommendation**

The FAA is recommending, but not requiring that an inspection of the fuel system of the above airplanes should be accomplished in accordance with the instructions in SB-AG-40. Because of the amount of “disassembly” required by the inspection, only a qualified mechanic should perform this inspection. If contaminants are found, it is requested that a Malfunction or Defect report be submitted through the appropriate Flight Standards District Office.

If you do not already have a copy of SB-AG-40, one may be obtained from:

Ayres Corporation  
P.O. Box 3090  
Albany, Georgia 31708-3090  
Telephone (912) 883-1440  
Facsimile (912) 883-1962

**For Further Information Contact**

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