

Proposed Equivalent Level of Safety ELOS CS-VLA.0951, Fuel Selector 'BOTH' Position

Introductory Note

The hereby presented Equivalent Level of Safety has been classified as an important Equivalent Level of Safety and as such shall be subject to public consultation, in accordance with EASA Management Board Decision 12/2007 dated 11 September 2007, Article 3 (2.), which states:

"2. Deviations from the applicable airworthiness codes, environmental protection certification specifications and/or acceptable means of compliance with Part 21, as well as important special conditions and equivalent safety findings, shall be submitted to the panel of experts and be subject to a public consultation of at least 3 weeks, except if they have been previously agreed and published in the Official Publication of the Agency. The final decision shall be published in the Official Publication of the Agency."

Statement of Issue

For fuel system installation, CS-VLA 951(b) requires the system to be arranged so that no fuel pump can draw fuel from more than one tank at a time. Furthermore CS-VLA 951(a) requires that the fuel system is arranged to prevent air introduction into the system under any normal operating condition.

Background

The CS-VLA is based on CS-23 small aircraft requirement. It intended to authorise certification of aircraft with a simpler design than the CS-23 and lighter weight. Review of regulation has shown that the CS 23.951(b) is not fully aligned with the CS-VLA 951 requirement concerning the design of the fuel system since providing an alternative to "draw fuel from more than one tank at a time", if there are means to prevent introducing air into the system (with CS 23.951(b)(2)).

The FAA AC 23-16A provide advisory for compliance to the 23.951 for fuel systems that draw fuel from more than one tank at a time for a direct engine feed. However this configuration may allow air into the fuel system when either independent tank has consumed its usable fuel unless there is a ... *QUOTE* "means to prevent introducing air into the fuel system; and the pilot has a means to draw fuel from a single tank" *UNQUOTE*.

Safety Equivalency Demonstration

To reach the Equivalent Level Of Safety to CS-VLA 951 it must be demonstrated that in any flight operation of the aircraft with fuel system selected on "both position" the engine will not encounter a loss of fuel pressure below engine manufacturer specifications and the aircraft is provisioned with single tank selection capability.