 <p>European Aviation Safety Agency</p>	<p style="text-align: center;">SPECIAL CONDITION</p> <p style="text-align: center;">CS-LSA</p> <p style="text-align: center;">Fuel system in LSA equipped with fuel injected engines</p>	<p>Doc. No. : SC-LSA.2012-01</p> <p>Issue : 1</p> <p>Date : 28-February-2013</p> <p>Ref. : CRI E-01</p> <p>Page : 1 of 1</p>
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BACKGROUND ON SPECIAL CONDITION SC-LSA.2012-01

Requirements applicable to the fuel system in LSA equipped with fuel injected engines

Introductory note:

The hereby presented Special Condition has been classified as an important Special Condition and as such shall be subject to public consultation, in accordance with EASA Management Board decision 02/04 dated 30 March 2004, Article 3 (2.) of 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

A Light Sport Aeroplane shall be equipped with an engine with fuel injection using electrical fuel pumps. Engines with fuel injection are of novel design for this class of aircraft and are not adequately covered by CS-LSA. This Special Condition is raised on basis of Part 21, 21A.16B.

EASA position

Engines with fuel injection require the operation of fuel pumps but CS-LSA/ASTM F2245 does not include requirements for fuel pumps or for fuel lines under pressure. Especially when operation of electrical fuel pumps is required to operate the engine the performance, power supply and control of the fuel system has to comply with the requirements proposed in SC-LSA.2012.01.

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SUBJECT : Requirements applicable to the fuel system in light sport aeroplanes equipped with fuel injected engines

CERTIFICATION SPECIFICATION : CS LSA

PRIMARY GROUP / PANEL : Powerplant

SECONDARY GROUPE / PANEL :

NATURE : SC

SPECIAL CONDITION

Fuel System

Modify CS-LSA Subpart B 7.3.8 to be read :

7.3.8 The fuel lines must be installed and properly supported to prevent excessive vibration and to withstand loads due to fuel pressure and accelerated flight conditions. Each flexible connection in fuel lines that may be under pressure and subjected to axial loading must use flexible hose assemblies shown to be suitable for the particular application.

Introduce new CS-LSA Subpart B 7.3.11 Fuel Pumps

7.3.11 Fuel Pumps

7.3.11.1 Each pump system must supply sufficient fuel at adequate pressure in all operating conditions.

7.3.11.2 The power supply to the main pump has to be directly delivered by the engine system

7.3.11.3 The power supply for the emergency pump has to independent of the power supply for the main pump

7.3.11.4 If main pump and emergency pump operate continuously, there must be a means to indicate to the pilot a malfunction of either pump