This document was created to make public non-proprietary data contained in Special Conditions (including Deviations, Equivalent Safety Findings) that are part of the applicable Certification Basis as recorded in TCDS EASA.IM.A.020.

Content:

CRI A-10 (SC): Operation to 51,000 ft	
APPLICABILITY:	Learjet Model 45
REQUIREMENTS:	Special Conditions for Operation to 51,000 ft.
ADVISORY MATERIAL:	N/A

Special Condition

(a) Pressure Vessel Integrity

For the damage tolerance evaluation of the Learjet 45, Learjet must consider, in addition to the damage sizes critical for structural residual strength, the damage sizes critical for depressurisation decay, taking also into account the (normal) unflawed pressurised cabin leakage rate. The resulting leakage must not result in the cabin altitude exceeding the cabin altitude time history shown in figure 4.

(b) Ventilation

In lieu of the requirements of FAR 25.831(a), the ventilation system must be designed to provide a sufficient amount of uncontaminated air to enable the crew members to perform their duties without undue discomfort or fatigue, and to provide reasonable passenger comfort during normal operating conditions and also in the event of any probable failure of any system which could adversely affect the cabin ventilating air. For normal operations, crew members and passengers must be provided with at least 10 cubic feet of fresh air per minute per person, or the equivalent in filtered, recirculated air based on the volume and composition at the corresponding cabin pressure altitude of not more than 8,000 feet.

(c) Air Conditioning

In addition to the requirements of FAR 25.831, paragraphs (b) through (e), the cabin cooling system must be designed to meet the following conditions during flight above 15,000 feet mean sea level (MSL):

1. After any probable failure, the cabin temperature-time history may not exceed the values shown in Figure 1.

2. After any improbable failure, the cabin temperature-time history may not exceed the values shown in Figure 2.

(d) Pressurisation

In addition to the requirements of FAR 25.841, the following apply:

1. The pressurisation system, which includes for this purpose bleed air, air conditioning, and pressure control systems, must prevent the cabin altitude from exceeding the cabin altitudetime history shown in Figure 3 after each of the following:

(a) Any probable malfunction or failure of the pressurisation system. The existence of undetected, latent malfunctions or failures in conjunction with probable failures must be considered.

(b) Any single failure in the pressurisation system combined with the occurrence of a leak produced by a complete loss of a door seal element, or a fuselage leak through an opening having an effective area 2.0 times the effective area which produces the maximum permissible fuselage leak rate approved for normal operation, whichever produces a more severe leak.

2. The cabin altitude-time history may not exceed that shown in Figure 4 after each of the following:

(a) The pressure vessel opening or duct while under maximum operating cabin pressure differential due to a tire burst, engine rotor burst, loss of antennas or stall warning vanes, or any probable equipment failure (bleed air, pressure control, air conditioning, electrical source(s), etc.) that affects pressurisation.

(b) Complete loss of thrust from all engines.

3. In showing compliance with paragraphs d.1. and d.2. of these special conditions (Pressurisation), it may be assumed that an emergency descent is made by an approved emergency procedure. A 17-second crew recognition and reaction time must be applied between cabin altitude warning and the initiation of an emergency descent.

NOTE: For the flight evaluation of the rapid descent, the test article must have the cabin volume representative of what is expected to be normal, such that Learjet must reduce the total cabin volume by that which would be occupied by the furnishings and total number of people.

(e) Oxygen equipment and supply

1. A continuous flow oxygen system must be provided for the passengers.

2. A quick-donning pressure demand mask with mask-mounted regulator must be provided for each pilot. Quick-donning from the stowed position must be demonstrated to show that the mask can be withdrawn from stowage and donned within 5 seconds."

CRI D-03 (DEV): Entry Door	
APPLICABILITY:	Learjet Model 45
REQUIREMENTS:	JAR 25.783(h)
ADVISORY MATERIAL:	N/A

Deviation (formally known as "Exemption" by JAA)

The Model 45 non-plug clamshell entry door does not comply with the requirements of JAR 25.783(h) for at least a Type II emergency exit with appropriate emergency lighting, placarding, marking, operating controls and intended evacuation procedures.

FAA have granted the permanent exemption, Exemption No. 6468A, see Regulatory Docket No. 28544 (see the Link below). JAA agrees to a permanent exemption on the same basis as the FAA.

http://www.airweb.faa.gov/Regulatory_and_Guidance_Library/rgEX.nsf/0/24EBD9F4A25AC49486256E510059D351?OpenDocument

CRI D-04 (ESF): Emergency Exit Signs	
APPLICABILITY:	Learjet Model 45
REQUIREMENTS:	JAR 25.811(d)(1) &(d)2)
ADVISORY MATERIAL:	N/A

Equivalent Safety Finding

Learjet proposed a single exit sign at each of the two emergency exits. Each of those signs is installed in a manner which addresses only the marker sign requirements of JAR 25.811(d)(2), and does not address the locator sign requirements of JAR 25.811(d)(1).

The following criteria are to be met in order to reach an equivalent level of safety compared to a direct compliance to JAR 25.811(d)(1) and (d)(2):

1. Localisation of the exit: The exit sign shall be easily visible from each place of the cabin, to localise the exit area.
2. Identification of the exit: once in the exit area, the passenger shall easily identify the exit with precision.

Acronyms and Abbreviations

TCDS	Type Certificate Data Sheet
SC	Special Condition
DEV	Deviation
ESF	Equivalent Safety Finding

– END –