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.023.

Content:

Contents

CRI D-13 ESF: Emergency Exit Access	
APPLICABILITY:	Regional Jet Series 100
REQUIREMENTS:	JAR 25.813(c)(1)
ADVISORY MATERIAL:	N/A

Problem:
FAR/JAR 25.813(c)(1) requires that the projected opening of the exit provided may not be obstructed and there must be no interference in opening the exit by seats, berths, or other protrusions...

The cushion of the seat adjacent to the overwing Type III exit protrudes into the projected opening of the exit. This protrusion is limited to approximately 0.75 inches at the forward lip of the cushion. Canadair believes that this protrusion does not cause an obstruction to exiting passengers as required by this sub-paragraph. The cushion is easily compressible by weight of the passengers and does not interfere with the opening of the exit.

In addition, the exit vertical dimension exceeds the required opening.
FAR 25.813(c)(1) requires that there be no obstruction of the projected opening of each Type III or Type IV exit, for a distance not less than the width of the narrowest installed passenger seat. The proposed CL-600-2B19 configuration includes a seat cushion adjacent to the overwing Type III exit that protrudes into the projected opening approximately 0.75 inches.

Canadair contend that the protruding cushion does not constitute an obstruction because it is easy compressible and it does not interfere with the opening of the exit.

Equivalent Safety Finding:
To evaluate the Canadair request for a finding of equivalent safety, the following will be required:

1. Drawing showing the exit opening, including step up and step down distances and the profile of the cushion intrusion.
2. Confirmation that the cushion is readily compressible as defined in FAA AC 25-17, paragraph (b)(13), page 88.
3. Verification by Transport Canada that this cushion intrusion does not interfere with the operation of the exit when opened from inside and outside the aeroplane.

CRI D-14 ESF: Emergency Exit Markings	
APPLICABILITY:	Regional Jet Series 100
REQUIREMENTS:	JAR 25.811(d)(2)
ADVISORY MATERIAL:	N/A

Problem:

FAR/JAR 25.811(d)(2) requires a passenger emergency exit marking sign next to each passenger emergency exit.

The CL-600-2B19 design does not incorporate such a sign for the main entry door. Canadair have requested an equivalent safety finding on the basis of the close proximity of the passenger emergency exit locator sign to this door.

Equivalent Safety Finding:

Transport Canada will consider Canadair's request for a finding of equivalent safety provided it can be established that the location of the exit sign provided for compliance with FAR 25.811 (d)(1), including its proximity to the passenger entry door is such that this single sign can serve the functions of both paragraph (d)(1) and (d)(2). If the resulting configuration is acceptable this single sign shall meet the requirements of FAR 25.812(1)(2).

Canadair is requested to submit a drawing detailing the exit signs in the vicinity of the passenger entry door. This drawing should identify which sign is being offered in lieu of the required by FAR 25.811(d)(2). This drawing and an inspection of the installation shall constitute the basis for the Transport Canada finding.

JAA accepts the Finding of Equivalent Safety however requires that an additional self-illuminating exit sign is to be provided at the main passenger door (Canadair Mod. No. 601R-60032).

CRI F-3 SC: Effect of External Radiation upon Aircraft Systems	
APPLICABILITY:	CL-600-2B19
REQUIREMENTS:	JAR 25.1309(a)(b), JAR 25.1431(a)
ADVISORY MATERIAL:	JAA/CERT/25-POL

Problem:

Recent experience has shown that radiated transmissions from civil or military stations may cause interference with various flight systems (e.g. flight or engine controls), such as to cause system loss or malfunction which can hazard the aircraft.

(a) Each system whose failure to function properly would prevent the continued safe flight and landing of the aircraft, must be designed and installed to ensure that the airplane operation is not affected during and after exposure to external radiations.

(b) Each system whose failure to function properly would reduce the capability of the aircraft or the ability of the flight crew to cope with adverse operating conditions, must be designed and installed to ensure that it can perform its intended function after exposure to external radiations.

The external threat frequency bands and corresponding average and peak levels that shall be used are defined in the Table 1 & 2 to this CRI.

Special Condition:

(a) Each system whose failure to function properly would prevent the continued safe flight and landing of the aircraft, must be designed and installed to ensure that the airplane operation is not affected during and after exposure to external radiations.

(b) Each system whose failure to function properly would reduce the capability of the aircraft or the ability of the flight crew to cope with adverse operating conditions, must be designed and installed to ensure that it can perform its intended function after exposure to external radiations.

The external threat frequency bands and corresponding average and peak levels that shall be used are defined in the Table 1 & 2 to this CRI.

AMC:

(a) The aeroplane systems and associated components, considered separately and in relation to other systems, must be designed and installed so that (see draft AMJ 25.1317 dated 17 January 1992):

(1) Each system that performs a critical or essential function is not adversely affected when the aeroplane is exposed to the Normal HIRF Environment.

(2) All critical functions must not be adversely affected when the aeroplane is exposed to the Certification HIRF Environment.

(3) After the aeroplane is exposed to the Certification HIRF Environment, each affected system that performs a critical function recovers normal operation without requiring any crew action, unless this conflicts with other operational or functional requirements of that system.

(b) For the purpose of this section, the following definitions apply:

(1) Critical function: a function whose failure would prevent the continued safe flight and landing of the aeroplane.

(2) Essential function: a function whose failure would reduce the capability of the aeroplane or the ability of the crew to cope with adverse operating conditions.

(3) The definitions of Normal and Certification HIRF Environments are found in the Table 1 & 2.

The High Intensity Radiated Fields (HIRF) Environments

(a) The Normal and Certification HIRF Environments frequency bands and corresponding average and peak levels are defined in Table 1 and Table 2.

(b) The HIRF Environments are defined in terms of field strength in volts per meter versus the given frequency range.

Table 1

Certification HIRF Environment

Field Strengths in Volts/Meter

Frequency	Peak	Average
10 kHz - 100 kHz	40	40
100 kHz - 500 kHz	40	40
500 kHz - 2 MHz	40	40
2 MHz - 30 MHz	100	100
30 MHz - 70 MHz	20	20
70 MHz - 100 MHz	20	20
100 MHz - 200 MHz	50	30
200 MHz - 400 MHz	70	70

400 MHz	-	700 MHz	730	30
700 MHz	-	1 GHz	1300	70
1 GHz	-	2 GHz	2500	160
2 GHz	-	4 GHz	3500	240
4 GHz	-	6 GHz	3200	280
6 GHz	-	8 GHz	800	330
8 GHz	-	12 GHz	3500	330
12 GHz	-	18 GHz	1700	180

Note: At 10 kHz - 100 kHz a High Impedance Field of 320 V/m peak exists, AMJ 25.1317 should be refered to for the applicability of this environment.

Table 2

Normal HIRF Environment

Field Strengths in Volts/Meter

Frequency			Peak	Average
10 kHz	-	100 kHz	20	20
100 kHz	-	500 kHz	20	20
500 kHz	-	2 MHz	30	30
2 MHz	-	30 MHz	50	50
30 MHz	-	70 MHz	10	10
70 MHz	-	100 MHz	10	10
100 MHz	-	200 MHz	30	30
200 MHz	-	400 MHz	25	25
400 MHz	-	700 MHz	730	30
700 MHz	-	1 GHz	40	10
1 GHz	-	2 GHz	1700	160
2 GHz	-	4 GHz	3000	170
4 GHz	-	6 GHz	2300	280
6 GHz	-	8 GHz	530	230

Acronyms and Abbreviations

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

– END –