

European Aviation Safety Agency

**Comment Response Document (CRD)
on Consultation paper nr. 14 of 11 August 2003**

**CS-VLA
Certification Specifications for Very Light Aeroplanes**

Foreword to the Comment Response document (CRD)

To give a rapid overview of the CRD, the following keywords were used in responding to comments:

- “Carried”: The proposed amendment is wholly transferred to the revised text.
- “Noted”: The comment is acknowledged and where needed the text has been improved.
- “Deferred”: The comment requires further assessment by the Agency under its future rulemaking programme.
- “Disagreed”: The comment is not shared by the Agency.

CRD - Explanatory Note CS - VLA

other

Para.

3 / AOPA Italy Member

Comment

According to EC No. 1592/2002 dated 15/07/2002, art. 2 letter e), art. 5 letter 2) a), art. 15 letter 1) a) and art. 18 letter 1), 2) and 3), in order to respect Agreement on Airworthiness Between Governments in force (with all European Countries and USA and TC Canada)

[each Contracting Party wishes to develop and employ procedures for granting airworthiness and environmental certification or acceptance of aeronautical products imported from the other Contracting Party so as to give as much recognition as is practicable to technical evaluations, test results, inspections, conformity statements, marks of conformity and certificates accepted or issued by or behalf of the airworthiness authority of the exporting Party in granting its own domestic certification of such aeronautical products; and In the interest of promoting aviation safety and preservation of the environment and with a view to fostering co-operation and assistance between their airworthiness authority in achieving common safety and environmental quality objectives, establishing and maintaining airworthiness and environmental standards and certification systems which are as similar to those of the other Contracting Party as practicable and co-operating in the reduction of the economic burden on aviation industries and operators arising from redundant technical evaluations, tests and inspections (that means the European Authority cannot ask for a higher certification, but adopt special condition!)]

- CS-VLA has to:

- a) adopt airworthiness and environmental standards;
- b) special condition relating to novel or unusual features of the aeronautical product design which are not covered by the adopted airworthiness and environmental standards;
- c) application of exemptions or equivalent safety findings from the adopted airworthiness and environmental standards.

CS-VLA must accept aircraft certified according other primary Authorities as FAA or Transport Canada (that used FAA 23-11 or Chapter 523-VLA for certification) as they are, including all flight operations as from the certification Authority accepted (for instance Night VMC, IFR).

- Reciprocity MUST be granted with other States always.

CS-23 is too restrictive for Light Aircraft (used for simple flight operation, usually flight training always in VMC condition) CS-VLA and CS-VLR have to cover all flight operation as VFR, Night VFR, IFR

Response

Disagreed. CS is not the right place to deal with international issues such as reciprocity and mutual acceptance clauses. This is provided for under articles 9 and 18 of regulation 1592/2002.

- Disagreed. Part 21 (not CS-VLA) defines the type-certification basis, including airworthiness codes and special conditions to be established by the Agency.

- Deferred. The concern related to categories, mass and operation is recognised. The Agency is recommended to review the matter with urgency.

CRD - CS - VLA Book 1-2

General Comments

Para.

62 / CAA UK

Comment

The inclusion of the specimen flight manual within AMC VLA.1581 creates an inconsistency with CS 22 where this information is kept within Appendix H.

Response

Noted. The specimen flight manuals are generally regarded as AMC. As a result, the Appendix H to CS-22 will be transformed into an AMC.

62 / CAA UK

Comment

I support the RASG view that the engine and propeller requirements should remain in CS 22 Subpart H and J respectively

Response

Noted.

During the consultation for CS-E, CS-P, CS-22, CS-VLA, CS-VLR, the views of the commentators were requested on what is the most appropriate location for the certification specifications to be used for engine and propeller to be installed on powered sailplanes, very light aeroplanes (VLA) and very light rotorcraft (VLR)

The following points should be kept in mind:

The Basic Regulation 1592/2002 requires all products to have a Type Certificate. Engine and propeller of whatever size or design, are defined in the Regulation as products.

It is clear that the levels of safety intended by the current JAR-E (CS-E is based on JAR-E plus CS-22 subpart H plus appendix B of JAR-VLR) are higher than that intended by the engine requirements in JAR-22 and JAR-VLR (Used as the basis for CS-22 and CS-VLR).

It is important both that the Agency maintains this principle of the level of regulation being appropriate to the intended use of the product, and that this is clear to all interested parties.

It is important that the location of the requirements (whether in CS-E or CS-22 etc.) should not affect in any way the rigor with which compliance is both demonstrated and found.

Two solutions were offered:

- 1) To place such certification specifications in the certification specifications for engines (CS-E) and certification specifications for propellers (CS-P) (Consistency of engine and propeller texts being the main rationale).
- 2) To place such certification specifications in the aircraft certification specifications either directly (CS-22 and CS-VLR) or by cross-reference (CS-VLA) (Use of an aircraft system approach being the main rationale).

It should be noted that the issue was only related to the location : the texts were technically unchanged (only editorial changes).

A careful review of received comments does not show a clear majority in favour of one or the other solution. Both Authorities and Interested Parties are divided on the issue.

To find a solution for the first issue of all CS, the following was agreed:

-Solution 2 should be adopted because it complies with the general principle of transformation of JARs into CS (avoiding changes). Currently, the engine and propeller certification specifications for powered sailplane, VLA and VLR are included directly or by cross-reference in the corresponding JAR.

-However, the appendix B of JAR-VLR should be replaced by the corresponding text that was included into the draft CS-E circulated for comments. The latter is considered more adequate as specifications for a separate engine certification (imposed by EU Regulation 1592 and Part 21), avoiding the confusing numerous cross references to aircraft specifications.

62 / CAA UK

Comment

The formula defining the shape of the gust has been omitted.

Response

Noted. The formula will be reinstated in CS-VLA 333(c)(2)(i).

62 / CAA UK

Comment

Regulation (EC) No 1592/2002 Annex 1 Essential Requirements for Airworthiness and Differences therein with Certification Specifications

It has been identified that the proposed Certification Specification may not address all of the Essential Requirements (Ers) relating to airworthiness and full compliance with the Ers is not automatically assured. The Ers appear to have been written for aircraft engaged in commercial air transportation and as such there is no background or substantive data for such a sudden move towards much more stringent requirements for other classes of aircraft, particularly for light aircraft, rotorcraft and gliders. It is presumed that it was not the objective of EASA to be unable to accept the current certification codes for those aircraft.

No allowance is made in the ERs for alleviations for small aircraft, unlike for example ER 1.c.3, which does so for system fail safety. It is of course natural to demand higher safety levels for larger aircraft carrying more people. It is accepted

General Comments

Para.

accidents have occurred to light aircraft due to such as bird strike and accidental damage and the underestimation of loading conditions. It is also recognised that improvement in some of these areas has been previously sought, however it was understood that it was intended that the regulation would not effect major change in the current certification standards. Additionally it is believed that compliance with the ERs would raise significant issues with foreign Civil Aviation Authorities for any validation project of a type of aircraft in the identified classes.

Response

Noted. Official position to be defined together with the Commission.

66 / CAA, Sweden

Comment

With reference to the Consultation Papers concerning the certification specifications mentioned above (CS 25 and CS VLA), we would like to make the following comments.

Since the proposed certification specifications contain regulatory material which, essentially, is presented as being identical to the content of the corresponding JARs, we are in favour of the proposed material.

However, should the proposals not have the same content as those JARs, there must be a possibility to rediscuss such items.

Response

Noted.

Para. Page 2-0-1 Paragraph 2.4

62 / CAA UK

Comment

Page 2-0-1 Paragraph 2.4 text should state '..... Certification Specification, AMC's in AMC-20 may also provide

Response

Carried.

B1-SUB A-CS-VLA 1

Para.

3 / AOPA Italy Member

Comment

Preamble: According to EC No. 1592/2002 dated 15/07/2002, art. 2 letter e), art. 5 letter 2) a), art. 15 letter 1) a) and art. 18 letter 1) 2) and 3), in order to respect the International Agreement on Airworthiness between Governments about:

- a) adopted airworthiness and environmental standards;
- b) special condition relating to novel or unusual features of the aeronautical product design which are not covered by the adopted airworthiness and environmental standards;
- c) application of exemptions or equivalent safety findings from the adopted airworthiness and environmental standards.

CS-VLA.1 Applicability

(a) This airworthiness code is applicable for the issue of type certificates and changes to those type certificates for very light aeroplanes (VLA) of conventional design and construction in the normal and utility categories.

(b) A VLA is an aeroplane with a single engine, having not more than two seats, with a Maximum Approved Takeoff Mass (Weight) of not more than 750 kg (1653.5 lbs.) and a stalling speed in the landing configuration of not more than 83 Km/h (45 knots) [Calibrated Air Speed (CAS)] for retractable gear and not more than 780 Kg and not more than 83 Km/h (45 knots) [Calibrated Air Speed (CAS)] for fixed landing gear.

Response

Deferred. The concern related to categories, mass and operation is recognised. The Agency is recommended to review the matter with urgency.

52 / AOPA Italy Member

Comment

Preamble: According to EC No. 1592/2002 dated 15/07/2002, art. 2 letter e), art. 5 letter 2) a), art. 15 letter 1) a) and art. 18 letter 1) 2) and 3), in order to respect the International Agreement on Airworthiness between Governments about:

- a) adopted airworthiness and environmental standards;
- b) special condition relating to novel or unusual features of the aeronautical product design which are not covered by the adopted airworthiness and environmental standards;
- c) application of exemptions or equivalent safety findings from the adopted airworthiness and environmental standards.

CS-VLA.1 Applicability

Para.

(a) This airworthiness code is applicable for the issue of type certificates and changes to those type certificates for very light aeroplanes (VLA) of conventional design and construction in the normal and utility categories.

(b) A VLA is an aeroplane with a single engine, having not more than two seats, with a Maximum Approved Takeoff Mass (Weight) of not more than 750 kg (1653.5 lbs.) and a stalling speed in the landing configuration of not more than 83 Km/h (45 knots) [Calibrated Air Speed (CAS)] for retractable gear and not more than 780 Kg and not more than 83 Km/h (45 knots) [Calibrated Air Speed (CAS)] for fixed landing gear.

Response

Deferred. The concern related to categories, mass and operation is recognised. The Agency is recommended to review the matter with urgency.

70 / Aquila GmbH**Comment**

CS-VLA 1 Applicability

(a) This airworthiness code is applicable to aeroplanes with a single engine (spark- or compression-ignition) having not more than two seats, with a Maximum Certificated Take-off Weight of not more than 800 kg and a stalling speed in the landing configuration of not more than 83 km/h (45 knots) (CAS), to be approved for day- and night-VFR only. (See AMC VLA 1(a)).

COMMENT:

Modern and future two seater aircraft are basically training aircraft in composite design. For these aircraft a couple of engines for the European market and a couple of typical two seater engines (100-130 HP) for the American market are available. If American two seater engines (e.g. Continental IO 240 or Lycoming O-235) or a modern diesel engine in this performance range are installed in these designs the aircraft empty weights increase to 550-560 kg.

This empty weight is generated by the demands of the US market (composite design and American two seater engine) and of course by the various requirements of the airworthiness code CS-VLA. The result is a payload of not more than 190-200 kg, which is certifiable following the code. For the typical customer, a flight school or a flight club this aircraft is not acceptable because the remaining endurance of 1 to 1.5 hours is not following their safety standards.

This was taken into account by the Federal Aviation Administration (FAA) when upgrading the aircraft DA20-C1 Katana (TCDS TA4CH, Rev. 10) with a MTOW increase for safety reasons.

According to this TCDS and following the Advisory Circular AC 23-11 the FAA has certified the aircraft for a MTOW of 800 kg and for night-VFR when equipped with the required equipment.

For European aircraft manufacturers relying on their national TC's and the US-validation this means that they with their products cannot stand the competition on the US-market (commonly regarded as a 60-70% market).

Without this market segment European manufacturers will not survive in the future.

Therefore we see a strong demand to modernize the CS-VLA ("the airworthiness code for two seaters") to a kind that the customer gets a two seat training aircraft which fulfills all the requirements of an up to date training philosophy which includes CVFR-training (incl. Night-VFR).

Response

Deferred. The concern related to categories, mass and operation is recognised. The Agency is recommended to review the matter with urgency.

71 / AOPA**Comment**

CS-VLA 1 Applicability

(a) This airworthiness code is applicable to aeroplanes with a single engine (spark- or compression-ignition) having not more than two seats, with a Maximum Certificated Take-off Weight of not more than 800 kg and a stalling speed in the landing configuration of not more than 83 km/h (45 knots) (CAS), to be approved for day- and night-VFR only. (See AMC VLA 1(a)).

COMMENT:

Modern and future two seater aircraft are basically training aircraft in composite design. For these aircraft a couple of engines for the European market and a couple of typical two seater engines (100-130 HP) for the American market are available. If American two seater engines (e.g. Continental IO 240 or Lycoming O-235) or a modern diesel engine in this performance range are installed in these designs the aircraft empty weights increase to 550-560 kg.

This empty weight is generated by the demands of the US market (composite design and American two seater engine) and of course by the various requirements of the airworthiness code CS-VLA. The result is a payload of not more than 190-200 kg, which is certifiable following the code. For the typical customer, a flight school or a flight club this aircraft is not acceptable because the remaining endurance of 1 to 1.5 hours is not following their safety standards.

This was taken into account by the Federal Aviation Administration (FAA) when upgrading the aircraft DA20-C1 Katana (TCDS TA4CH, Rev. 10) with a MTOW increase for safety reasons.

According to this TCDS and following the Advisory Circular AC 23-11 the FAA has certified the aircraft for a MTOW of 800 kg and for night-VFR when equipped with the required equipment.

For European aircraft manufacturers relying on their national TC's and the US-validation this means that they with their products cannot stand the competition on the US-market (commonly regarded as a 60-70% market).

Without this market segment European manufacturers will not survive in the future.

Therefore we see a strong demand to modernize the CS-VLA ("the airworthiness code for two seaters") to a kind that the customer gets a two seat training aircraft which fulfills all the requirements of an up to date training philosophy which includes CVFR-training (incl. Night-VFR).

Response

Deferred. The concern related to categories, mass and operation is recognised. The Agency is recommended to review the matter with urgency.

72 / Transport Canada

B1-SUB A-CS-VLA 1

Para.

Comment

•CS-VLA did not pick up sub-paragraph JAR-VLA 1(b). Therefore, there is no requirement for the single paragraph in the requirement to be identified as sub-paragraph (a).

•The AMC VLA (advisory material) uses essentially the same wording that was used in ACJ VLA1 at its initial issue. This ACJ VLA was revised at JAR-VLA Amendment VLA/92/1. The existing ACJ VLA 1 was re-numbered as ACJ VLA 1(b). A new sub-paragraph was added as ACJ VLA 1(a). Among other things it addressed the non-applicability of JAR-VLA to aeroplanes such as ultralights. In part it stated: "...these aeroplanes are usually not type-certificated and JAR-VLA prescribes minimum standards for the issue of type certificates. The latter interpretation could also be made for aeroplanes having restricted certificates of airworthiness; JAR-VLA is not applicable to such aeroplanes."

Transport Canada questions whether the omission of paragraph ACJ VLA 1(a) (introduced by JAR-VLA Amendment VLA/92/1) reflects an oversight. If its omission was deliberate, Transport Canada would like to know whether the JAA's position concerning aeroplanes having restricted certificates of airworthiness has changed.

Response

Noted. ACJ VLA 1(a) was deliberately omitted because "ultra-light" and "micro-light" aeroplanes are excluded from Regulation 1592/2002 by means of Annex II. The reference to (a) will be deleted.

B1-SUB A-CS-VLA 3

Para.

3 / AOPA Italy Member

Comment

CS-VLA.3 Aeroplane Categories

(a) Normal category aeroplanes are intended for non-aerobatic operations. Non-aerobatic operations include:

- (1) any manoeuvres incident to normal flying;
- (2) stalls (except whip stalls); and
- (3) lazy eights, chandelles and steep turns in which the angle of bank is not more than 60°.

(b) Utility category aeroplanes are intended for limited aerobatic operations. Limited aerobatic operations include:

- (1) spins (if approved for the particular type of aeroplane); and
- (2) lazy eights, chandelles and steep turns in which the angle of bank is more than 60°.

Response

Deferred. The concern related to categories is recognised. The Agency is recommended to review the matter with urgency.

Para. (a)

52 / AOPA Italy Member

Comment

(a) Normal category aeroplanes are intended for non-aerobatic operations. Non-aerobatic operations include:

- (1) any manoeuvres incident to normal flying;
- (2) stalls (except whip stalls); and
- (3) lazy eights, chandelles and steep turns in which the angle of bank is not more than 60°.

Response

Deferred. The concern related to categories is recognised. The Agency is recommended to review the matter with urgency.

Para. (b)

52 / AOPA Italy Member

Comment

(b) Utility category aeroplanes are intended for limited aerobatic operations. Limited aerobatic operations include:

- (1) spins (if approved for the particular type of aeroplane); and
- (2) lazy eights, chandelles and steep turns in which the angle of bank is more than 60°.

Response

Deferred. The concern related to categories is recognised. The Agency is recommended to review the matter with urgency.

B1-SUB B-CS-VLA 65

Para.

3 / AOPA Italy Member

Comment

CS-VLA.65 Climb: All Engines Operating

Aeroplanes limited to VFR day operation shall meet the requirements of CS-VLA 65, aeroplanes intended for VFR night or IFR operation shall have a steady climb gradient at sea level of at least 8.3 percent for landplanes or 6.7 percent for seaplanes and amphibians with:

- (a) not more than maximum continuous power on each engine;
- (b) the landing gear retracted;
- (c) the wing flaps in the takeoff position(s);
- (d) a climb speed not less than 1.2 VS1; and
- (e) the cowl flaps or other means for controlling the engine cooling air supply in the position used in the cooling tests required by CS-VLA 1041 through CS-VLA 1047.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

Para. General

52 / AOPA Italy Member

Comment

CS-VLA.65 Climb: All Engines Operating

Aeroplanes limited to VFR day operation shall meet the requirements of CS-VLA 65, aeroplanes intended for VFR night or IFR operation shall have a steady climb gradient at sea level of at least 8.3 percent for landplanes or 6.7 percent for seaplanes and amphibians with:

- (a) not more than maximum continuous power on each engine;
- (b) the landing gear retracted;
- (c) the wing flaps in the takeoff position(s);
- (d) a climb speed not less than 1.2 VS1; and
- (e) the cowl flaps or other means for controlling the engine cooling air supply in the position used in the cooling tests required by CS-VLA 1041 through CS-VLA 1047.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

B1-SUB B-CS-VLA 75

Para. (a) Page 1-B-3

62 / CAA UK

Comment

Page 1-B-3 CS-VLA 75(a) – VS1 should be VS1

Response

Carried (S1 should be subscript).

Para. Page 1-B-3

62 / CAA UK

Comment

Page 1-B-3 CS-VLA 75 – incorrect conversion to SI units. Text should read '...a speed of approximately 5.6 km/h (3 knots)...'

Response

Noted. Text will be corrected. Proposed to the Agency to implement a conversion/transposition policy with regard to units of measurements.

B1-SUB B-CS-VLA 145

Para. (a)

62 / CAA UK

Comment

Page 1-B-4 CS-VLA 145(a) – 'can' is not is the standard font.

Response

Carried. Comment understood.

62 / CAA UK

Comment

Page 1-B-4 CS-VLA 145(e), Vsi should be VS1

Response

B1-SUB B-CS-VLA 145

Para. (a)

Carried (S1 should be subscript).

Para. (a) Page 1-B-4

62 / CAA UK

Comment

Page 1-B-4 CS-VLA 145(a) – VSI and Vsi should be VS1

Response

Carried (S1 should be subscript).

B1-SUB B-CS-VLA 157

Para. (a)(4)

62 / CAA UK

Comment

Page 1-B-4 CS-VLA 157(a)(4) Vsi should be VS1

Response

Carried (S1 should be subscript).

Para. (b)(4)

62 / CAA UK

Comment

Page 1-B-4 CS-VLA 157(b)(4) Vsi should be VS1

Response

Carried (S1 should be subscript).

B1-SUB B-CS-VLA 161

Para. (a)

62 / CAA UK

Comment

Page 1-B-4 CS-VLA 161(a) VH should be VH

Response

Carried (H should be subscript).

Para. (b)(1)

62 / CAA UK

Comment

Page 1-B-4 CS-VLA (b)(1) VH should be VH

Response

Carried (H should be subscript).

Para. (b)(2)

62 / CAA UK

Comment

Page 1-B-5 CS-VLA 161(b)(2) – VY should be VY and VSI should be VS1

Response

Carried (both should be subscript).

B1-SUB B-CS-VLA 175

Para. (a)(4)

62 / CAA UK

Comment

Page 1-B-5 CS-VLA 175(a)(4) – VY should be VY and 'ofCS-VLA' should be 'of CS-VLA

[...]

Response

Carried (both should be corrected).

Para. (b)

62 / CAA UK

Comment

Page 1-B-5 CS-VLA 175(b) – VNE should be VNE

Response

Carried (NE should be subscript).

Para. (c)

62 / CAA UK

Comment

)Page 1-B-5 CS-VLA 175(c) – VFE should be VFE and Vsi should be VS1

Response

Carried (both should be subscript).

B1-SUB B-CS-VLA 177

Para. (a)(1)

62 / CAA UK

Comment

Page 1-B-6 CS-VLA 177(a)(1) – Vsi should be VS1 and VA should be VA[...]

Response

Carried (both should be subscript).

Para. (a)(2)

62 / CAA UK

Comment

Page 1-B-6 CS-VLA 177(a)(2) – Vsi and VSI should be VS1

Response

Carried (S1 should be subscript).

Para. (a)(3)

62 / CAA UK

Comment

Page 1-B-6 CS-VLA 177(a)(3) – VSI should be VS1

Response

Carried (SI should read S1 and S1 should be subscript).

Para. (b)(2)

62 / CAA UK

Comment

Page 1-B-6 CS-VLA 177(b)(2) – VH should be VH

Response

Carried (H should be subscript).

B1-SUB B-CS-VLA 181

Para. (b)(1)

62 / CAA UK

Comment

Page 1-B-6 CS-VLA 181 (b)(1) – additional text makes requirements unclear. Text ‘and paragraph must be shown under the following’ should be deleted.

Response

Carried.

B1-SUB B-CS-VLA 201

Para. (d)(2)

62 / CAA UK

Comment

Page 1-B-7 CS-VLA 201 (d)(2) - words missing from the requirement. Text should read ‘However, the power used to regain level flight may not be applied until flying control is regained’.

Response

Carried.

Para. (f)(5)

62 / CAA UK

Comment

Page 1-B-7 CS-VLA 201 (f)(5) – Vsi should be VS1

Response

Carried (SI should be S1 and S1 should be subscript).

B1-SUB B-CS-VLA 203

Para. (a)(1)

62 / CAA UK

Comment

19)Page 1-B-7 CS-VLA 203(a)(1)
SI units not included

Response

Noted. Text will be corrected.

Para. (a)(2)

62 / CAA UK

Comment

Page 1-B-7 CS-VLA 203a) (2)
SI units not included

Response

Noted. Text will be corrected.

Para. (c)(5)

62 / CAA UK

Comment

Page 1-B-7 CS-VLA 203(c)(5) - Vsi should be VS1

Response

Carried (si should be S1 and S1 should be subscript).

Para. Page 1-B-7

62 / CAA UK

Comment

Page 1-B-7 CS-VLA 203 – Words missing from title. Title should be ‘Turning Flight and Accelerated Stalls’

Response

Carried.

B1-SUB B-CS-VLA 207

Para. (c)

62 / CAA UK

Comment

Page 1-B-7 CS-VLA 207(c) - Incorrect conversions to SI units. Text should read '...by a margin of not less than 9.3 km/h (5 knots), but not more than 18.5 km/h (10 knots).... '

Response

Carried.

B1-SUB B-CS-VLA 221

Para.

3 / AOPA Italy Member

Comment

CS-VLA.221 Spinning

[(a) A normal category aeroplane shall meet the requirements of CS-VLA 221.

(b) A utility category aeroplane shall meet the requirements of CS-VLA 221. In addition, the requirements of paragraph (c) of this section shall be met if approval for spinning is requested.

(c) Aircraft Approved for Spinning.

(1) The aeroplane shall recover from any point in a spin, in not more than one and onehalf additional turns after normal recovery application of the controls. Prior to normal recovery application of the controls, the spin test shall proceed for six turns or 3 seconds, whichever takes longer, with flaps retracted, and one turn or 3 seconds, whichever takes longer, with flaps extended. However, beyond 3 seconds, the spin may be discontinued when spiral characteristics appear with flaps retracted.

(2) For both the flaps-retracted and flaps-extended conditions, the applicable airspeed limit and positive limit manoeuvring load factor shall not be exceeded. For the flapsextended condition, the flaps may be retracted during recovery, if a placard is installed prohibiting intentional spins with flaps extended.

(3) It shall be impossible to obtain unrecoverable spins with any use of the flight or engine power controls either at the entry into or during the spin.

Response

Deferred. The concern related to categories and operation is recognised. The Agency is recommended to review the matter with urgency.

Para. General

52 / AOPA Italy Member

Comment

CS-VLA.221 Spinning

[(a) A normal category aeroplane shall meet the requirements of CS-VLA 221.

(b) A utility category aeroplane shall meet the requirements of CS-VLA 221. In addition, the requirements of paragraph (c) of this section shall be met if approval for spinning is requested.

(c) Aircraft Approved for Spinning.

(1) The aeroplane shall recover from any point in a spin, in not more than one and onehalf additional turns after normal recovery application of the controls. Prior to normal recovery application of the controls, the spin test shall proceed for six turns or 3 seconds, whichever takes longer, with flaps retracted, and one turn or 3 seconds, whichever takes longer, with flaps extended. However, beyond 3 seconds, the spin may be discontinued when spiral characteristics appear with flaps retracted.

(2) For both the flaps-retracted and flaps-extended conditions, the applicable airspeed limit and positive limit manoeuvring load factor shall not be exceeded. For the flapsextended condition, the flaps may be retracted during recovery, if a placard is installed prohibiting intentional spins with flaps extended.

(3) It shall be impossible to obtain unrecoverable spins with any use of the flight or engine power controls either at the entry into or during the spin.

Response

Deferred. The concern related to categories and operation is recognised. The Agency is recommended to review the matter with urgency.

B1-SUB B-CS-VLA 251

Para. Page 1-B-8

62 / CAA UK

Comment

Page 1-B-8 CS-VLA 251 - VD should be VD

Response

Carried (D should be subscript).

B1-SUB C-CS-VLA 333

Para. (b)(1)

62 / CAA UK

Comment

Page 1-C-2 CS-VLA 333 (b)(1) - VD should be VD and VC should be VC

Response

Carried (D and C should be subscript).

Para. (b)(2)

62 / CAA UK

Comment

Page 1-C-2 CS-VLA 333 (b)(2) and - VD should be VD and VC should be VC

Response

Carried (D and C should be subscript).

Para. (b)(3)

62 / CAA UK

Comment

Page 1-C-2 CS-VLA 333 (b)(3) - VD should be VD and VC should be VC

Response

Carried (D and C should be subscript).

Para. (c)(1)

62 / CAA UK

Comment

Page 1-C-2 CS-VLA 333 (c)(1) - VD should be VD and VC should be VC

Response

Carried (D and C should be subscript).

Para. (c)(2)(i)

62 / CAA UK

Comment

Page 1-C-2 CS-VLA 333 (c)(2)(i) – the equation is missing.

Response

Noted. This will be corrected.

Para. (c)(2)(ii)

62 / CAA UK

Comment

Page 1-C-2 CS-VLA 333 (c)(2)(ii) – VD should be VD and VC should be VC

Response

Carried (D and C should be subscript).

Para. (a)(1)

62 / CAA UK

Comment

- Page 1-C-2 CS-VLA 335(a)(1) - VC and Vc should be VC and VH should be VH

- Equation for VC is incorrect. As currently written VC is 2.4 to the power of v(Mg/S) not multiplied by v(Mg/S).

Response

- Carried (C and H should be subscript).

- Noted. The equation will be corrected.

Para. (a)(2)

62 / CAA UK

Comment

Page 1-C-2 CS-VLA 335(a (2) - VC and Vc should be VC and VH should be VH

Response

Carried (C and H should be subscript).

Para. (b)

62 / CAA UK

Comment

Page 1-C-3 CS-VLA 335(b)-- VD should be VD and Vc should be VC and v_{min} should be V_{min}

Response

Carried (D and C should be subscript and c_{min} should be C min in subscript).

Para. (c)

62 / CAA UK

Comment

30)Page 1-C-3 CS-VLA 335(c) – VA should be VA, VC should be VC and CAN should be CAN

Response

Carried (A and C should be subscript and NA in CNA should be subscript).

62 / CAA UK

Comment

31)Page 1-C-3 CS-VLA 335(c) – equation for VA is incorrect. As currently written VA is VS to the power of v_n not multiplied by v_n.

Response

Noted. The equation will be corrected.

Para.

3 / AOPA Italy Member

Comment

CS-VLA.337 Limit Manoeuvring Load Factor

(a) The positive limit manoeuvring load factor n shall not be less than:

- (1) 3.8 for normal category aeroplanes; or
- (2) 4.4 for utility category aeroplanes.

(b) The negative limit manoeuvring load factor shall not be less than -1.5.

Response

Deferred. The concern related to categories is recognised. The Agency is recommended to review the matter with urgency.

B1-SUB C-CS-VLA 337

Para. (a)

52 / AOPA Italy Member

Comment

(a) The positive limit manoeuvring load factor n shall not be less than:

- (1) 3.8 for normal category aeroplanes; or
- (2) 4.4 for utility category aeroplanes.

Response

Deferred. The concern related to categories is recognised. The Agency is recommended to review the matter with urgency.

Para. (b)

52 / AOPA Italy Member

Comment

(b) The negative limit manoeuvring load factor shall not be less than -1.5.

Response

Noted. No change required.

B1-SUB C-CS-VLA 341

Para. Page 1- C-3

62 / CAA UK

Comment

- Page 1-C-3 CS-VLA 341 – equation is incorrect – V_a should be V_{a_0} .

- Page 1-C-3 CS-VLA 341 definitions are incorrect

- a) K_g should be K_g
- b) P_0 should be ρ_0
- c) P should be ρ
- d) In the definition for a, C_{AN} should be C_{AN} and C_L should be C_L

Response

- Carried. The equation will be corrected. " a " subscript should be changed to " a_0 ".

-

- a) Noted. Already subscript.
- B) P_0 should read " ρ_0 ".
- c) P should read " ρ ".
- D) N_A in C_{NA} and L in C_L should be subscript

B1-SUB C-CS-VLA 345

Para. (a)

62 / CAA UK

Comment

Page 1-C-3 CS-VLA 345 (a) V_F should be V_{F_0}

Response

Carried (F should be in subscript).

Para. (a)(1)

62 / CAA UK

Comment

Page 1-C-3 CS-VLA 345 (a)(1) words missing. Text should read: 'Manoeuvring to a positive limit load factor of 2.0; and '

Response

Carried.

B1-SUB C-CS-VLA 361

Para. (a)(1)

62 / CAA UK

Comment

Page 1-C-4 CS-VLA 361(a)(1) CS-CS should be CS-VLA

Response

Carried.

B1-SUB C-CS-VLA 369

Para. (b)

62 / CAA UK

Comment

Page 1-C-4 CS-VLA 369(b) CL should be CL

Response

Carried (L should be subscript).

B1-SUB C-CS-VLA 395

Para. (a)(2)

62 / CAA UK

Comment

Page 1-C-5 CS-VLA 395(a)(2) 'down- wind' should be 'downwind'

Response

Carried.

B1-SUB C-CS-VLA 397

Para. Title

62 / CAA UK

Comment

Page 1-C-5 CS-VLA 397 title is incorrect and should be 'Limit Control Forces and Torques'

Response

Carried.

B1-SUB C-CS-VLA 415

Para.

72 / Transport Canada

Comment

JAR-VLA lists the limit factor for the elevator as ± 0.75 , CS-VLA lists it as ± 0.50 .

Transport Canada is not aware of an amendment to this requirement, therefore we believe that the changed number needs to be confirmed.

Response

Noted. This will be corrected.

Para. (b)

62 / CAA UK

Comment

Page 1-C-6 CS-VLA 415(b) Value of K in table for conditions (c) and (d) should be ± 0.75 not ± 0.50 .

Response

Carried.

Para. Title

62 / CAA UK

Comment

Page 1- C-6 CS-VLA 415 Title 'Ground Gust Conditions' is shown in column 2.

Response

Noted. This will be corrected.

B1-SUB C-CS-VLA 423

Para. (b)

62 / CAA UK

Comment

Page 1-C-7 CS-VLA 423(b) 'A sudden downward deflection...' should be 'A sudden upward deflection' and VA should be VA

Response

Carried (and A should be subscript).

B1-SUB C-CS-VLA 423

Para. (b)(1)

62 / CAA UK

Comment

Page 1-C-7 CS-VLA 423(b)(1) nm should be nm

Response

Carried (m should be subscript).

Para. (d)

62 / CAA UK

Comment

Page 1-C-7 CS-VLA 423(d) VA should be VA

Response

Carried (A should be subscript).

Para. (d)(3)

62 / CAA UK

Comment

- Page 1-C-7 CS-VLA 423(d)(3) ?o should be ?o

- Page 1-C-7 CS-VLA 423(d)(3) definitions:

- a) G should be g
- b) ?o should be ?o
- c) It (i.e. uppercase i) should be It (i.e. lowercase L)
- d) A should be a

Response

- Carried ("o" should be subscript).

-

- a) Carried.
- B) "o" should be subscript.
- C) Carried.
- D) Carried.

B1-SUB C-CS-VLA 425

Para. (d)

62 / CAA UK

Comment

Page 1-C-8 CS-VLA 425 (d) the formatting (i.e. normal text and subscript) for parameters within the equation and definitions are not consistent.

Response

Noted. Text will be corrected.

Para. Page 1-C-8

62 / CAA UK

Comment

Page 1-C-8 CS-VLA 425 VF, Vc and VD should be VF, VC and VD

Response

Carried (F, C and D should be subscript).

B1-SUB C-CS-VLA 427

Para. (b)(2)

62 / CAA UK

Comment

Page 1-C-8 CS-VLA 427(b)(2) 'mort' should be 'more'

Response

Carried.

B1-SUB C-CS-VLA 441

Para. (a)

62 / CAA UK

Comment

Page 1-C-9 CS-VLA 441(a) VA should be VA

Response

Carried (A should be subscript).

Para. (b)

62 / CAA UK

Comment

Page 1-C-9 CS-VLA 441(b) 'By' should be 'B,'

Response

Carried.

B1-SUB C-CS-VLA 443

Para. (a)

62 / CAA UK

Comment

Page 1-C-9 CS-VLA 443(a) VC should be VC

Page 1-C-9 CS-VLA 443(a) definitions

- a) Unit for Ude should be m/s
- b) P should be ?
- c) Unit for Svt should be m²
- d) Unit for V should be m/s

Response

- Carried ("c" should be subscript).

-

- a) Carried.
- B) "p" should be "rho".
- C) Carried (surface expressed in square meters).
- D) Carried.

B1-SUB C-CS-VLA 447

Para. Page 1-C-10

62 / CAA UK

Comment

Page 1-C-10 CS-VLA 447 'CS-VLA 44 1' should be 'CS-VLA 441'

Response

Carried.

B1-SUB C-CS-VLA 449

Para. Page 1-C-10

62 / CAA UK

Comment

Page 1-C-10 CS-VLA 449 VE should be VE

Response

Carried (E should be subscript).

B1-SUB C-CS-VLA 455

Para. Page 1-C-10

62 / CAA UK

Comment

Page 1-C-10 CS-VLA 455 VA and VD should be VA and VD

Response

Carried (A, D should be subscript).

B1-SUB C-CS-VLA 477

Para. Page 1-C-11

62 / CAA UK

Comment

Page 1-C-11 CS-VLA 477 'Cy' should be 'C.'

Response

Carried.

B1-SUB C-CS-VLA 493

Para. (c)

62 / CAA UK

Comment

Page 1-C-12 CS-VLA 493(c) 0-8 should be 0.8

Response

Carried.

B1-SUB D-CS-VLA 629

Para. Page 1-D-3

62 / CAA UK

Comment

Page 1-D-3 CS-VLA 629 all occurrences of VD should be VD

Response

Carried (D should be subscript).

Para. (d)(1)

62 / CAA UK

Comment

Page 1-D-3 CS-VLA 629(d)(1) 'as' in second line is not in the standard font.

Response

Carried.

B1-SUB D-CS-VLA 651

Para. Page 1-D-3

62 / CAA UK

Comment

Page 1-D-3 CS-VLA 651 'CONTROL SUR FACES' should be 'CONTROL SURFACES'

Response

Carried.

B1-SUB D-CS-VLA 657

Para. Page 1-D-3

62 / CAA UK

Comment

Page 1-D-3 CS-VLA 657 'bail' should be 'ball'

Response

Carried.

B1-SUB D-CS-VLA 697

Para. Page 1-D-5

62 / CAA UK

Comment

Page 1-D-5 CS-VLA 697 'must-give' should be 'must give'

Response

Carried.

B1-SUB D-CS-VLA 725

Para. Page 1-D-6

62 / CAA UK

Comment

Page 1-D-6 CS-VLA 725 definitions

- a)H should be h
- b)D should be d
- c)MM should be MM
- d)MT should be MT
- e)MN should be MN

Response

- a) Carried.
- B) Carried.
- C) Carried (second M should be subscript).
- D) Carried (T should be subscript).
- E) Carried (N should be subscript).

Para. (d)

62 / CAA UK

Comment

Page 1-D-7 CS-VLA 725(d) We should be We

Response

Carried (e should be subscript). It should be noted that all references to We or W have been replaced by Me and M respectively in 725(d) and (e).

Para. (e)

62 / CAA UK

Comment

Page 1-D-7 CS-VLA 725(e) equation is incorrect - Me should be We and M should be W

Response

Noted. All references to We or W replaced by Me and M respectively in 725(d) and (e).

B1-SUB D-CS-VLA 729

Para. Page 1-D-7

62 / CAA UK

Comment

Page 1-D-7 CS-VLA 729 occurrences of Vsi should be VS1 and VLO should be VLO

Response

Carried (si should be S1 in subscript and LO should be subscript).

B1-SUB D-CS-VLA 735

Para. (b)

62 / CAA UK

Comment

Page 1-D-9 CS-VLA 735(b) 'roiling' should be 'rolling'

Response

Carried.

B1-SUB D-CS-VLA 777

Para.

72 / Transport Canada

Comment

Since JAR-VLA and now CS-VLA are limited to single-engine aircraft only, the wording "For ... single engine aeroplanes..." can be deleted.

Response

Carried.

B1-SUB D-CS-VLA 777

Para. (g)(2)

62 / CAA UK

Comment

Page 1-D-10 CS-VLA 777 (g)(2) text should read 'For electrical or Electronic fuel selector –'

Response

Noted. Text changed accordingly ("electronic" in lower case).

Para. (g)(2)(i)

62 / CAA UK

Comment

Page 1-D-10 CS-VLA 777 (g)(2)(i) text should read 'Digital controls or electrical switches must be properly labelled

Response

Carried.

B1-SUB D-CS-VLA 779

Para.

72 / Transport Canada

Comment

Since JAR-VLA and now CS-VLA are limited to single-engine aircraft only, the wording "For ... single engine aeroplanes..." can be deleted.

Response

Carried.

Para. (a)(2)

62 / CAA UK

Comment

Page 1-D-10 CS-VLA 779 (a)(2) words missing from first paragraph. Text should read '...rearward or down for flaps down or auxiliary device deployed'

Response

Carried.

Para. (b)(1)

62 / CAA UK

Comment

- Page 1-D-11 CS-VLA 779 (b)(1) words missing from first paragraph. Text should read '...and rearward to increase rearward thrust'

- Page 1-D-11 CS-VLA 779 (b)(1) Rotary controls - text should read 'Clockwise from off to full on'

Response

- Carried.

- Carried.

B1-SUB D-CS-VLA 781

Para. Title

62 / CAA UK

Comment

Page 1-D-11 CS-VLA 781 Title is incorrect should read 'Cockpit Control Knob Shape'

Response

Carried.

B1-SUB D-CS-VLA 853

Para. (e)

62 / CAA UK

Comment

Page 1-D-13 CS-VLA 853(e) 'The average bum length' should be 'The average burn length'

Response

Carried(!)

B1-SUB D-CS-VLA 863

Para. Page 1-D-13

62 / CAA UK

Comment

Page 1-D-13 CS-VLA 863 'area' is not in the standard font.

Response

Noted. This will be corrected.

B1-SUB D-CS-VLA 865

Para. Page 1-D-13

62 / CAA UK

Comment

Page 1-D-13 CS-VLA 865 'will' is not in the standard font.

Response

Noted. This will be corrected.

B1-SUB E-CS-VLA 903

Para.

3 / AOPA Italy Member

Comment

CS-VLA.903 Engines

(a) Engine type certificate.

(1) For aeroplanes that are limited to VFR day operation, the engine shall have a type certificate and / or shall meet the applicable requirements of CS-E

(2) For aeroplanes intended for VFR night or IFR operation, the engine shall have a type certificate in accordance with CS-E and / or equivalent certificate issued by an primary Authority (FAA Part 33, TC Canada).

(b) Restart envelope. An altitude and airspeed envelope shall be established for the aeroplane for inflight engine restarting and the installed engine shall have a restart capability within that envelope.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

72 / Transport Canada

Comment

JAR-VLA 903 stated: "The engine must have a type certificate" and the corresponding ACJ-VLA stated: "The engine may be type certificated under JAR-E, JAR-22 Subpart H, or FAR Part 33." CS-VLA 903 only requires that: "The engine must meet the requirements of CS-22 Subpart H". A corresponding AMC-VLA is no longer available.

This poses several problems.

•The wording: "Meet the requirements of CS-22", would not appear to mean the same thing as "be type certified" under JAR-22. An engine could be shown to meet the requirements of CS-22 without an engine type certificate being issued. Is that what it is intended to mean? If so, it would appear that CS-VLA is applying a lower standard of airworthiness than did JAR-VLA.

JAR-VLA 903 offered the possibility of using a JAR 22, JAR E or FAR 33 certified engine. Under the proposed EASA regulations, there is no AMC-VLA associated with CS-VLA 903 allowing for any other option. In contrast, CS-22, AMC 22.1801 states that: "Engines certificated under CS-E are accepted as complying with Subpart H." One can argue that the CS-22 advisory could be used as the basis to accept a CS-E engine in a VLA but it is rather indirect and would appear that it might require a Finding of Equivalent Safety. In our opinion, the provisions for use of a CS-E engine should be imbedded in CS-VLA.

•Neither CS-VLA nor CS-22 mention the acceptability of FAR 33 engines. Several Canadian VLA products use FAR 33 certified engines. At the present time, the status of these engines concerning a CS-E approval is unknown and it is not known if a FAR 33 engine would be accepted as complying with the requirements of CS-E. If FAR 33 certified engines are acceptable, this should be stated in the aircraft CS-VLA. If they are not acceptable, future foreign (including Canadian and US) products might have difficulty obtaining European certification.

Para.

Response

Noted. CS-22 already accepts CS-E certifications as compliance with Subpart H. An additional AMC will be introduced in CS-VLA to reflect the same position. FAR-33 is excluded as it is not an Agency CS. However, it may be accepted as part of a certification application under 21A.17 of Part 21.

73 / DGAC, France

Comment

Text of CS-VLA 903 (a) currently reads as "CS-VLA 903 Engine (a) The engine must meet the requirements of CS-22 Subpart H."

This implies that only CS-22 subpart H is acceptable for an engine to be installed in a VLA. This is a significant change compared to J AR-VLA which, in the ACJ, considers other engine codes. Indeed, an engine complying with JAR-E (or its equivalent in CS-E) should be acceptable for a VLA. This CS-VLA 903 (a) introduces a limitation to the business.

This also conflicts with Part 21, paragraph 21A.21 (d) which imposes the engineTC prior to aircraft certification together with 21A.17 (a)(1) which states that the Agency will notify the certification basis for the engine.

This clearly gives the Agency the decision on the requirements to be met by the engine for receiving its type certificate. Therefore, CS-VLA 903 (a) should read : "The engine must have a type certificate". Alternatively, because this simply duplicates 21A.21, CS-VLA 903 (a) could be deleted, as done in CS-25.

Response

Noted. CS-22 already accepts CS-E certifications as compliance with Subpart H. An additional AMC will be introduced in CS-VLA to reflect the same position.

Para. (a)

52 / AOPA Italy Member

Comment

(a) Engine type certificate.

(1) For aeroplanes that are limited to VFR day operation, the engine shall have a type certificate and / or shall meet the applicable requirements of CS-E

(2) For aeroplanes intended for VFR night or IFR operation, the engine shall have a type certificate in accordance with CS-E and / or equivalent certificate issued by a primary Authority (FAA Part 33, TC Canada).

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

62 / CAA UK

Comment

Page 1-E-1 CS-VLA 903(a) – only allows Subpart H certification. JAR VLA AMC also allowed CS-E or FAR 33 certification.

Response

Noted. CS-22 already accepts CS-E certifications as compliance with Subpart H. An additional AMC will be introduced in CS-VLA to reflect the same position. FAR-33 is excluded as it is not an Agency CS. However, it may be accepted as part of a certification application under 21A.17 of Part 21.

73 / DGAC, France

Comment

It is noted that the engine requirements, according to the currently proposed CS-VLA 903 (a), are not contained in CS-VLA. Therefore, this re-inforces the arguments in favor of having all engine requirements in the CS-E (certification specifications for engines) and seriously undermines the arguments put forward for keeping them in CS-22.

Response

Noted.

During the consultation for CS-E, CS-P, CS-22, CS-VLA, CS-VLR, the views of the commentators were requested on what is the most appropriate location for the certification specifications to be used for engine and propeller to be installed on powered sailplanes, very light aeroplanes (VLA) and very light rotorcraft (VLR)

The following points should be kept in mind:

The Basic Regulation 1592/2002 requires all products to have a Type Certificate. Engine and propeller of whatever size or design, are defined in the Regulation as products.

It is clear that the levels of safety intended by the current JAR-E (CS-E is based on JAR-E plus CS-22 subpart H plus appendix B of JAR-VLR) are higher than that intended by the engine requirements in JAR-22 and JAR-VLR (Used as the basis for CS-22 and CS-VLR).

It is important both that the Agency maintains this principle of the level of regulation being appropriate to the intended use of the product, and that this is clear to all interested parties.

It is important that the location of the requirements (whether in CS-E or CS-22 etc.) should not affect in any way the rigor with which compliance is both demonstrated and found.

Two solutions were offered:

1) To place such certification specifications in the certification specifications for engines (CS-E) and certification specifications for propellers (CS-P) (Consistency of engine and propeller texts being the main rationale).

2) To place such certification specifications in the aircraft certification specifications either directly (CS-22 and CS-VLR)

B1-SUB E-CS-VLA 903**Para. (a)**

or by cross-reference (CS-VLA) (Use of an aircraft system approach being the main rationale).

It should be noted that the issue was only related to the location : the texts were technically unchanged (only editorial changes).

A careful review of received comments does not show a clear majority in favour of one or the other solution. Both Authorities and Interested Parties are divided on the issue.

To find a solution for the first issue of all CS, the following was agreed:

-Solution 2 should be adopted because it complies with the general principle of transformation of JARs into CS (avoiding changes). Currently, the engine and propeller certification specifications for powered sailplane, VLA and VLR are included directly or by cross-reference in the corresponding JAR.

-However, the appendix B of JAR-VLR should be replaced by the corresponding text that was included into the draft CS-E circulated for comments. The latter is considered more adequate as specifications for a separate engine certification (imposed by EU Regulation 1592 and Part 21), avoiding the confusing numerous cross references to aircraft specifications.

Para. (b)**52 / AOPA Italy Member****Comment**

(b) Restart envelope. An altitude and airspeed envelope shall be established for the aeroplane for inflight engine restarting and the installed engine shall have a restart capability within that envelope.

Response

Noted. No change required.

B1-SUB E-CS-VLA 905**Para.****3 / AOPA Italy Member****Comment**

CS-VLA.905 Propellers

(a) The propeller shall have a type certificate or equivalent approval as follows:

(1) For aeroplanes that are limited to VFR day operation, the engine shall have a type certificate and / or shall meet the applicable requirements of CS-P

(2) For aeroplanes intended for VFR night or IFR operation, the engine shall have a type certificate in accordance with CS-P and / or equivalent certificate issued by an primary Authority (FAA Part 35, TC Canada).

(b) Engine power and propeller shaft rotational speed shall not exceed the limits for which the propeller is certificated or approved.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

73 / DGAC, France**Comment**

Text of CS-VLA 905 (a) currently reads as
"CS-VLA 905 Propeller (a) The propeller must meet the requirements of CS-22 Subpart J".

The intent of the comment made on CS-VLA 903 (a) is valid also here.

Response

Noted. CS-22 already accepts CS-P certifications as compliance with Subpart J. An additional AMC will be introduced in CS-VLA to reflect the same position.

Para. (a)**52 / AOPA Italy Member****Comment**

(a) The propeller shall have a type certificate or equivalent approval as follows:

(1) For aeroplanes that are limited to VFR day operation, the engine shall have a type certificate and / or shall meet the applicable requirements of CS-P

(2) For aeroplanes intended for VFR night or IFR operation, the engine shall have a type certificate in accordance with CS-P and / or equivalent certificate issued by an primary Authority (FAA Part 35, TC Canada).

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

B1-SUB E-CS-VLA 905

Para. (a)

62 / CAA UK

Comment

Page 1-E-1 CS-VLA 905(a) – only allows Subpart J certification. JAR VLA AMC also allowed CS-P or FAR 35 certification

Response

Noted. CS-22 already accepts CS-P certifications as compliance with Subpart J. An additional AMC will be introduced in CS-VLA to reflect the same position. FAR-35 is excluded as it is not an Agency CS. However, it may be accepted as part of a certification application under Part 21.

Para. (b)

52 / AOPA Italy Member

Comment

(b) Engine power and propeller shaft rotational speed shall not exceed the limits for which the propeller is certificated or approved.

Response

Noted. No change required.

B1-SUB E-CS-VLA 925

Para. (c)

62 / CAA UK

Comment

Page 1-E-2 CS-VLA 925(c)(1) should read 'At least 26mm radial clearance between the blade tips ...'

Response

Carried.

B1-SUB E-CS-VLA 965

Para. (a)

62 / CAA UK

Comment

Page 1-E-3 CS-VLA 965(a) and (c) 'nonmetallic' should be 'non-metallic'

Response

Carried.

Para. (c)

62 / CAA UK

Comment

Page 1-E-3 CS-VLA 967 (a) 'axe' should be 'are'

Response

Carried.

B1-SUB E-CS-VLA 967

Para. (a)

62 / CAA UK

Comment

Page 1-E-3 CS-VLA 967 (a) 'axe' should be 'are'

Response

Carried.

Para. (a)(2)

62 / CAA UK

Comment

Page 1-E-3 CS-VLA 967 (a)(2) 'nonabsorbent should be 'non-absorbent'

Response

Carried.

B1-SUB E-CS-VLA 971

Para. (a)

62 / CAA UK

Comment

Page 1-E-4 CS-VLA 971 (a) 'or120cm3' should be 'or 120 cm3'

Response

Carried. (3 should be superscript).

Para. (a)(1)

62 / CAA UK

Comment

Page 1-E-4 CS-VLA 971 (a)(1) '25 cm3" should be '25 cm3'

Response

Carried. (3 should be superscript).

B1-SUB E-CS-VLA 1011

Para. (c)

62 / CAA UK

Comment

Page 1-E-6 CS-VLA 1011(c) 'See AMC 101 1(c)' should be 'See AMC 1011(c)'

Response

Carried.

B1-SUB E-CS-VLA 1019

Para. Page 1-E-6

62 / CAA UK

Comment

Page 1-E-6 CS-VLA 1019 'Oil Strainer of Filter' should be 'Oil Strainer or Filter'

Response

Noted ('oil strainer or filter').

B1-SUB E-CS-VLA 1093

Para.

3 / AOPA Italy Member

Comment

CS-VLA.1093 Induction System Icing Protection

The reciprocating engine air induction system shall have means to prevent and eliminate icing. Unless this is done by other means, it shall be shown that, in air free of visible moisture at a temperature of -10C:

- (1) each aeroplane with a sea-level engine using a conventional venturi carburetor has a preheater that can provide a heat rise of 50 oC with the engine at 75% of maximum continuous power;
 - (2) each aeroplane with an altitude engine using a conventional venturi carburetor has a preheater that can provide a heat rise of 67 oC with the engine at 75% of maximum continuous power;
 - (3) each aeroplane with an altitude engine using a carburetor tending to prevent icing has a preheater that, with the engine at 60% of maximum continuous power, can provide a heat rise of 56 oC.
- (b) [No variation.]

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

52 / AOPA Italy Member

Comment

CS-VLA.1093 Induction System Icing Protection

The reciprocating engine air induction system shall have means to prevent and eliminate icing.

Unless this is done by other means, it shall be shown that, in air free of visible moisture at a temperature of -10C:

- (1) each aeroplane with a sea-level engine using a conventional venturi carburetor has a preheater that can provide a heat rise of 50 oC with the engine at 75% of maximum continuous power;
- (2) each aeroplane with an altitude engine using a conventional venturi carburetor has a preheater that can provide a heat rise of 67 oC with the engine at 75% of maximum continuous power;
- (3) each aeroplane with an altitude engine using a carburetor tending to prevent icing has a preheater that, with the engine at 60% of maximum continuous power, can provide a heat rise of 56 oC.

(b) [No variation.]

B1-SUB E-CS-VLA 1093

Para.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

72 / Transport Canada

Comment

We understand that JAR-VLA was modelled on FAR 23 and contains some identical text but uses SI units. FAR 23.1093(a)(1), (a)(2) and (a)(3) specify carburetor heat rises of 90, 120 and 100 degrees Fahrenheit, respectively. These are temperature changes and convert to Celsius as 50, 67 and 56 Celsius degrees. JAR-VLA appears to have treated these temperature changes as actual temperatures and publishes the required heat rises as 32 C, 50 C and 38 C. Transport Canada was made aware of this problem and amended the Canadian Airworthiness Manual 523-VLA to reflect this change. However, CS-VLA contains the same wording as JAR-VLA did. It is our position that this wording is in error and should be corrected.

Response

Carried.

B1-SUB E-CS-VLA 1103

Para. Page 1-E-9

62 / CAA UK

Comment

Page 1-E-9 CS-VLA 1103 The font of the title is not in the standard font.

Response

Noted. This will be corrected.

B1-SUB E-CS-VLA 1147

Para. Page 1-E-10

62 / CAA UK

Comment

Page 1-E-10 CS-VLA 1147 - The title should read 'CS-VLA 1147 Mixture Control'

Response

Carried.

B1-SUB E-CS-VLA 1191

Para. (f)(2)

62 / CAA UK

Comment

Page 1-E-11 CS-VLA 1191 (f)(2) '64 cm²' should be '64 cm²'

Response

Carried. (2 should be superscript).

B1-SUB F-CS-VLA 1301

Para. (a)

62 / CAA UK

Comment

Page 1-F-1 CS-VLA 1301 (a) should read 'Be of a kind and design...'

Response

Carried.

Para. (b)

62 / CAA UK

Comment

Page 1-F-1 CS-VLA 1301 (b) should read 'Be labelled as to its identification, function or operating limitations ...'

Response

Carried.

Para.

3 / AOPA Italy Member

Comment

CS-VLA.1309 Equipment, Systems, and Installations

Aeroplanes limited to VFR operation shall meet the requirements of CS-VLA 1309, for aeroplanes intended for IFR operation the following requirements shall be met:

(a) each item of equipment, each system, and each installation:

(1) when performing its intended function, shall not adversely affect the response, operation, or accuracy of any:

(i) equipment essential to safe operation, or

(ii) other equipment unless there is a means to inform the pilot of the effect;

and

(2) shall be designed to minimize hazards to the aeroplane in the event of a probable malfunction or failure.

(b) The design of each item of equipment, each system, and each installation shall be examined separately and in relationship to other aeroplane systems and installations to determine if the aeroplane is dependent upon its function for continued safe flight and landing and if failure of a system would significantly reduce the capability of the aeroplane or the ability of the crew to cope with adverse operating conditions. Each item of equipment, each system, and each installation identified by this examination as one upon which the aeroplane is dependent for proper functioning to ensure continued safe flight and landing, or whose failure would significantly reduce the capability of the aeroplane or the ability of the crew to cope with adverse operating conditions, shall be designed to comply with the following additional requirements:

(1) it shall perform its intended function under any foreseeable operating condition;

(2) when systems and associated components are considered separately and in relation to other systems:

(i) the occurrence of any failure condition that would prevent the continued

safe flight and landing of the aeroplane shall be extremely improbable, and

(ii) the occurrence of any other failure condition that would significantly reduce the capability of the aeroplane or the ability of the crew to cope with adverse operating conditions shall be improbable.

(3) Warning information shall be provided to alert the crew to unsafe system operating conditions and to enable them to make appropriate corrective action. Systems, controls, and associated monitoring and warning means shall be designed to minimize crew errors that could create additional hazards.

(4) Compliance with the requirements of paragraph (b)(2) of this section shall be shown by analysis and where necessary, by appropriate ground, flight, or simulator tests. The analysis shall consider:

(i) possible modes of failure, including malfunctions and damage from external sources;

(ii) the probability of multiple failures, and the probability of undetected faults;

(iii) the resulting effects on the aeroplane and occupants, considering the stage of flight and operating conditions; and

(iv) the crew warning cues, corrective action required, and the crew's capability of determining faults.

(c) Each item of equipment, each system, and each installation whose functioning is required by this manual and that requires a power supply is an "essential load" on the power supply. The power sources and the system shall be able to supply the following power loads in probable operating combinations and for probable durations:

(1) loads connected to the power distribution system with the system functioning normally;

(2) essential loads after failure of any power converter or energy storage device;

(3) essential loads for which an alternate source of power is required, as applicable, by any applicable operating rules after any failure or malfunction in any one power supply system, distribution system, or other utilisation system.

(d) In determining compliance with paragraph (c)(2) of this section, the power loads shall be assumed to be reduced under a monitoring procedure consistent with safety in the kinds of operations authorized.

(e) In showing compliance with this section with regard to the electrical power system and to equipment design and installation, critical environmental and atmospheric conditions, including radio frequency energy and the effects (both direct and indirect) of lightning strikes, shall be considered. For electrical generation, distribution, and utilisation equipment required by or used in complying with this manual, the ability to provide continuous, safe service under foreseeable environmental conditions shall be shown by environmental tests, design analysis, or reference to previous comparable service experience on other aeroplanes.

(f) As used in this section, "system" refers to all pneumatic systems, fluid systems, electrical systems, mechanical systems, and powerplant systems included in the aeroplane design, except for the following:

(1) powerplant systems provided as part of the certificated engine; and

(2) the flight structure (such as wing, empennage, control surfaces and their systems,

Para.

the fuselage, engine mounting, and landing gear and their related primary attachments) whose requirements are specific in this CS-VLA

Information Note: Aircraft designs that contain extensive use of non-metallic materials in the structure and use electrical and electronic systems to perform critical functions, may be subject to special conditions to limit susceptibility to high intensity radiated fields.

(b) [No variation.]

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

52 / AOPA Italy Member

Comment

CS-VLA.1309 Equipment, Systems, and Installations

Aeroplanes limited to VFR operation shall meet the requirements of CS-VLA 1309, for aeroplanes intended for IFR operation the following requirements shall be met:

(a) each item of equipment, each system, and each installation:

(1) when performing its intended function, shall not adversely affect the response, operation, or accuracy of any:

(i) equipment essential to safe operation, or

(ii) other equipment unless there is a means to inform the pilot of the effect;

and

(2) shall be designed to minimize hazards to the aeroplane in the event of a probable malfunction or failure.

(b) The design of each item of equipment, each system, and each installation shall be examined separately and in relationship to other aeroplane systems and installations to determine if the aeroplane is dependent upon its function for continued safe flight and landing and if failure of a system would significantly reduce the capability of the aeroplane or the ability of the crew to cope with adverse operating conditions. Each item of equipment, each system, and each installation identified by this examination as one upon which the aeroplane is dependent for proper functioning to ensure continued safe flight and landing, or whose failure would significantly reduce the capability of the aeroplane or the ability of the crew to cope with adverse operating conditions, shall be designed to comply with the following additional requirements:

(1) it shall perform its intended function under any foreseeable operating condition;

(2) when systems and associated components are considered separately and in relation to other systems:

(i) the occurrence of any failure condition that would prevent the continued safe flight and landing of the aeroplane shall be extremely improbable, and

(ii) the occurrence of any other failure condition that would significantly reduce the capability of the aeroplane or the ability of the crew to cope with adverse operating conditions shall be improbable.

(3) Warning information shall be provided to alert the crew to unsafe system operating conditions and to enable them to make appropriate corrective action. Systems, controls, and associated monitoring and warning means shall be designed to minimize crew errors that could create additional hazards.

(4) Compliance with the requirements of paragraph (b)(2) of this section shall be shown by analysis and where necessary, by appropriate ground, flight, or simulator tests. The analysis shall consider:

(i) possible modes of failure, including malfunctions and damage from external sources;

(ii) the probability of multiple failures, and the probability of undetected faults;

(iii) the resulting effects on the aeroplane and occupants, considering the stage of flight and operating conditions; and

(iv) the crew warning cues, corrective action required, and the crew's capability of determining faults.

(c) Each item of equipment, each system, and each installation whose functioning is required by this manual and that requires a power supply is an "essential load" on the power supply. The power sources and the system shall be able to supply the following power loads in probable operating combinations and for probable durations:

(1) loads connected to the power distribution system with the system functioning normally;

(2) essential loads after failure of any power converter or energy storage device;

(3) essential loads for which an alternate source of power is required, as applicable, by any applicable operating rules after any failure or malfunction in any one power supply system, distribution system, or other utilisation system.

(d) In determining compliance with paragraph (c)(2) of this section, the power loads shall be assumed to be reduced under a monitoring procedure consistent with safety in the kinds of operations authorized.

(e) In showing compliance with this section with regard to the electrical power system and to equipment design and installation, critical environmental and atmospheric conditions,

B1-SUB F-CS-VLA 1309

Para.

including radio frequency energy and the effects (both direct and indirect) of lightning strikes, shall be considered. For electrical generation, distribution, and utilisation equipment required by or used in complying with this manual, the ability to provide continuous, safe service under foreseeable environmental conditions shall be shown by environmental tests, design analysis, or reference to previous comparable service experience on other aeroplanes.

(f) As used in this section, "system" refers to all pneumatic systems, fluid systems, electrical systems, mechanical systems, and powerplant systems included in the aeroplane design, except for the following:

- (1) powerplant systems provided as part of the certificated engine; and
- (2) the flight structure (such as wing, empennage, control surfaces and their systems, the fuselage, engine mounting, and landing gear and their related primary attachments) whose requirements are specific in this CS-VLA

Information Note: Aircraft designs that contain extensive use of non-metallic materials in the structure and use electrical and electronic systems to perform critical functions, may be subject to special conditions to limit susceptibility to high intensity radiated fields.

(b) [No variation.]

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

B1-SUB F-CS-VLA 1321

Para.

3 / AOPA Italy Member

Comment

CS-VLA.1321 Arrangement and Visibility

Aeroplanes limited to VFR day operation shall meet the requirements of CS-VLA 1321, for aeroplanes intended for VFR night or IFR operation the following requirements shall be met:

(a) each flight, navigation, and power plant instrument for use by any required pilot during takeoff, initial climb, final approach, and landing shall be located so that any pilot seated at the controls can monitor the aeroplane's flight path and these instruments with minimum head and eye movement. The power plant instruments for these flight conditions are those needed to set power within power plant limitations;

(b) instrument panel vibration shall not damage, or impair the accuracy of, any instrument;

(c) for each aeroplane the flight instruments required by CS-VLA 1303, and, as applicable, by any applicable operating rules, shall be grouped on the instrument panel and centred as nearly as practicable about the vertical plane of each required pilot's forward vision. In addition:

- (1) the instrument that most effectively indicates the attitude shall be on the panel in the top centre position;
- (2) the instrument that most effectively indicates airspeed shall be adjacent to and directly to the left of the instrument in the top centre position;
- (3) the instrument that most effectively indicates altitude shall be adjacent to and directly to the right of the instrument in the top centre position;
- (4) the instrument that most effectively indicates direction of flight, other than the magnetic direction indicator required by CS-VLA 1303 (c), shall be adjacent to and directly below the instrument in the top centre position; and
- (5) electronic display indicators may be used for compliance with paragraphs (c)(1) through (c)(4) of this section when such displays comply with requirements in CS-VLA. 1311; and

(d) if a visual indicator is provided to indicate malfunction of an instrument, it shall be effective under all probable cockpit lighting conditions.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

Para. Propose different text

52 / AOPA Italy Member

Comment

CS-VLA.1321 Arrangement and Visibility

Aeroplanes limited to VFR day operation shall meet the requirements of CS-VLA 1321, for aeroplanes intended for VFR night or IFR operation the following requirements shall be met:

(a) each flight, navigation, and power plant instrument for use by any required pilot during takeoff, initial climb, final approach, and landing shall be located so that any pilot seated at the controls can monitor the aeroplane's flight path and these instruments with minimum head and eye movement. The power plant instruments for these flight conditions are those needed to set power within power plant limitations;

(b) instrument panel vibration shall not damage, or impair the accuracy of, any instrument;

(c) for each aeroplane the flight instruments required by CS-VLA 1303, and, as applicable, by any applicable operating rules, shall be grouped on the instrument panel and centred as nearly as practicable about the vertical plane of each required pilot's forward vision. In addition:

(1) the instrument that most effectively indicates the attitude shall be on the panel in the top centre position;

(2) the instrument that most effectively indicates airspeed shall be adjacent to and directly to the left of the instrument in the top centre position;

(3) the instrument that most effectively indicates altitude shall be adjacent to and directly to the right of the instrument in the top centre position;

(4) the instrument that most effectively indicates direction of flight, other than the magnetic direction indicator required by CS-VLA 1303 (c), shall be adjacent to and directly below the instrument in the top centre position; and

(5) electronic display indicators may be used for compliance with paragraphs (c)(1) through (c)(4) of this section when such displays comply with requirements in CSVLA. 1311; and

(d) if a visual indicator is provided to indicate malfunction of an instrument, it shall be effective under all probable cockpit lighting conditions.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

Para. Page 1-F-2

62 / CAA UK

Comment

Page 1-F-2 CS-VLA 1323 VSI should be VS1, VNE should be VNE, VFE should be VFE and VS0 should be VS0

Response

Carried (all but the 'V' should be subscript).

Para.

3 / AOPA Italy Member

Comment

CS-VLA.1351 General

Aeroplanes limited to VFR day operation shall meet the requirements of CS-VLA 1351, for aeroplanes intended for VFR night or IFR operation the following requirements shall be met:

(a) Electrical system capacity. Each electrical system shall be adequate for the intended use.

In addition:

(1) electric power sources, their transmission cables, and their associated control and protective devices, shall be able to furnish the required power at the proper voltage to each load circuit essential for safe operation, and

(2) compliance with paragraph (a)(1) of this section shall be shown by an electrical load analysis or by electrical measurements that account for the electrical loads applied to the electrical system in probable combinations and for probable durations.

(b) Function. For each electrical system, the following requirements apply:

(1) each system, when installed, shall be:

(i) free from hazards in itself, in its method of operation, and in its effects on the other parts of the aeroplane;

(ii) Protected from fuel, oil water, other detrimental substances, and mechanical damage;

(iii) So designed that the risk of electrical shock to crew, passengers, and ground personnel is reduced to a minimum; and

(2) electric power sources shall function properly when connected in combination or independently;

(3) no failure or malfunction of any electric power source shall impair the ability of any remaining source to supply load circuits essential for safe operation.

(c) Generating system. There shall be at least one generator/alternator if the electrical system supplies power to load circuits essential for safe operation. In addition:

(1) each generator/alternator shall be able to deliver its continuous rated power, or such power as is limited by its regulation system;

(2) generator/alternator voltage control equipment shall be able to dependably regulate the generator/alternator output within rated limits;

(3) automatic means shall be provided to prevent damage to any generator/alternator and adverse effects on the aeroplane electrical system due to reverse current. A means shall also be provided to disconnect each generator/alternator from the battery and other generators/alternators;

(4) there shall be a means to give immediate warning to the flight crew of a failure of any generator/ alternator;

(5) each generator/alternator shall have an over-voltage control designed and installed to prevent damage to the electrical system, or to equipment supplied by the electrical system that could result if that generator/alternator were to develop an over-voltage condition.

(d) Instruments. A means shall exist to indicate to appropriate flight crewmembers the electric power system quantities essential for safe operation. For aeroplanes with direct current systems, an ammeter that can be switched into each generator feeder may be used and, if only one generator exists, the ammeter may be in the battery feeder.

(e) Fire resistance. Electrical equipment shall be so designed and installed that in the event of a fire in the engine compartment, during which the surface of the firewall adjacent to the fire is heated to 1366 °K (1093 °C / 2000 °F) for 5 minutes or to a lesser temperature substantiated by the applicant, the equipment essential to continued safe operation and located behind the firewall will function satisfactorily and will not create an additional fire hazard.

(f) External power. If provisions are made for connecting external power to the aeroplane, and that external power can be electrically connected to equipment other than that used for engine starting, means shall be provided to ensure that no external power supply having a reverse polarity, or a reverse phase sequence, can supply power to the aeroplane's electrical system. The external power connection shall be located so that its use will not result in a hazard to the aeroplane or ground personnel.

(g) It shall be shown by analysis, tests, or both, that the aeroplane can be operated safely in VFR conditions, for a period of not less than five minutes, with the normal electrical power (electrical power sources excluding the battery and any other standby electrical sources) inoperative, with critical type fuel (from the standpoint of flameout and restart capability), and with the aeroplane initially at the maximum certificated altitude. Parts of the electrical system may remain on if:

(1) a single malfunction, including a wire bundle or junction box fire, cannot result in loss of the part turned off and the part turned on, and

(2) the parts turned on are electrically and mechanically isolated from the parts turned off.

Response

Para.

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

Para. General

52 / AOPA Italy Member

Comment

CS-VLA.1351 General

Aeroplanes limited to VFR day operation shall meet the requirements of CS-VLA 1351, for aeroplanes intended for VFR night or IFR operation the following requirements shall be met:

(a) Electrical system capacity. Each electrical system shall be adequate for the intended use.

In addition:

(1) electric power sources, their transmission cables, and their associated control and protective devices, shall be able to furnish the required power at the proper voltage to each load circuit essential for safe operation, and

(2) compliance with paragraph (a)(1) of this section shall be shown by an electrical load analysis or by electrical measurements that account for the electrical loads applied to the electrical system in probable combinations and for probable durations.

(b) Function. For each electrical system, the following requirements apply:

(1) each system, when installed, shall be:

(i) free from hazards in itself, in its method of operation, and in its effects on the other parts of the aeroplane;

(ii) Protected from fuel, oil water, other detrimental substances, and mechanical damage;

(iii) So designed that the risk of electrical shock to crew, passengers, and ground personnel is reduced to a minimum; and

(2) electric power sources shall function properly when connected in combination or independently;

(3) no failure or malfunction of any electric power source shall impair the ability of any remaining source to supply load circuits essential for safe operation.

(c) Generating system. There shall be at least one generator/alternator if the electrical system supplies power to load circuits essential for safe operation. In addition:

(1) each generator/alternator shall be able to deliver its continuous rated power, or such power as is limited by its regulation system;

(2) generator/alternator voltage control equipment shall be able to dependably regulate the generator/alternator output within rated limits;

(3) automatic means shall be provided to prevent damage to any generator/alternator and adverse effects on the aeroplane electrical system due to reverse current. A means shall also be provided to disconnect each generator/alternator from the battery and other generators/alternators;

(4) there shall be a means to give immediate warning to the flight crew of a failure of any generator/ alternator;

(5) each generator/alternator shall have an over-voltage control designed and installed to prevent damage to the electrical system, or to equipment supplied by the electrical system that could result if that generator/alternator were to develop an over-voltage condition.

(d) Instruments. A means shall exist to indicate to appropriate flight crewmembers the electric power system quantities essential for safe operation. For aeroplanes with direct current systems, an ammeter that can be switched into each generator feeder may be used and, if only one generator exists, the ammeter may be in the battery feeder.

(e) Fire resistance. Electrical equipment shall be so designed and installed that in the event of a fire in the engine compartment, during which the surface of the firewall adjacent to the fire is heated to 1366 °K (1093 °C / 2000 °F) for 5 minutes or to a lesser temperature substantiated by the applicant, the equipment essential to continued safe operation and located behind the firewall will function satisfactorily and will not create an additional fire hazard.

(f) External power. If provisions are made for connecting external power to the aeroplane, and that external power can be electrically connected to equipment other than that used for engine starting, means shall be provided to ensure that no external power supply having a reverse polarity, or a reverse phase sequence, can supply power to the aeroplane's electrical system. The external power connection shall be located so that its use will not result in a hazard to the aeroplane or ground personnel.

(g) It shall be shown by analysis, tests, or both, that the aeroplane can be operated safely in VFR conditions, for a period of not less than five minutes, with the normal electrical power (electrical power sources excluding the battery and any other standby electrical sources) inoperative, with critical type fuel (from the standpoint of flameout and restart capability), and with the aeroplane initially at the maximum certificated altitude. Parts of the electrical system may remain on if:

(1) a single malfunction, including a wire bundle or junction box fire, cannot result in loss of the part turned off and the part turned on, and

(2) the parts turned on are electrically and mechanically isolated from the parts turned off.

Response

Para. General

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

Para.

3 / AOPA Italy Member

Comment

CS-VLA.1357 Circuit Protective Devices

Aeroplanes limited to VFR day operation shall meet the requirements of CS-VLA 1357, for aeroplanes intended for VFR night or IFR operation the following requirements shall be met:

(a) protective devices, such as fuses or circuit breakers, shall be installed in all electrical circuits other than:

- (1) main circuits of starter motors used during starting only, and
- (2) circuits in which no hazard is presented by their omission;

(b) a protective device for a circuit essential to flight safety shall not be used to protect any other circuit;

(c) each resettable circuit protective device ("trip free" device in which the tripping mechanism cannot be overridden by the operating control) shall be designed so that:

- (1) a manual operation is required to restore service after tripping, and
- (2) if an overload or circuit fault exists, the device will open the circuit regardless of the position of the operating control; and

(d) If the ability to reset a circuit breaker or replace a fuse is essential to safety in flight, that circuit breaker or fuse shall be so located and identified that it can be readily reset or replaced in flight;

(e) for fuses identified as replaceable in flight:

- (1) there shall be one spare of each rating or 50 percent spare fuses of each rating, whichever is greater, and
- (2) the spare fuse(s) shall be readily accessible to any required pilot.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

52 / AOPA Italy Member

Comment

CS-VLA.1357 Circuit Protective Devices

Aeroplanes limited to VFR day operation shall meet the requirements of CS-VLA 1357, for aeroplanes intended for VFR night or IFR operation the following requirements shall be met:

(a) protective devices, such as fuses or circuit breakers, shall be installed in all electrical circuits other than:

- (1) main circuits of starter motors used during starting only, and
- (2) circuits in which no hazard is presented by their omission;

(b) a protective device for a circuit essential to flight safety shall not be used to protect any other circuit;

(c) each resettable circuit protective device ("trip free" device in which the tripping mechanism cannot be overridden by the operating control) shall be designed so that:

- (1) a manual operation is required to restore service after tripping, and
- (2) if an overload or circuit fault exists, the device will open the circuit regardless of the position of the operating control; and

(d) If the ability to reset a circuit breaker or replace a fuse is essential to safety in flight, that circuit breaker or fuse shall be so located and identified that it can be readily reset or replaced in flight;

(e) for fuses identified as replaceable in flight:

- (1) there shall be one spare of each rating or 50 percent spare fuses of each rating, whichever is greater, and
- (2) the spare fuse(s) shall be readily accessible to any required pilot.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

B1-SUB G-CS-VLA 1505

Para. Page 1-G-1

62 / CAA UK

Comment

Page 1-G-1 CS-VLA 1505 VNE should be VNE, VD should be VD and VNO should be VNO

Response

Carried (all but V should be subscript).

B1-SUB G-CS-VLA 1507

Para. Page 1-G-1

62 / CAA UK

Comment

Page 1-G-1 CS-VLA 1507 VA should be VA

Response

Carried (A should be subscript).

B1-SUB G-CS-VLA 1511

Para. Page 1-G-1

62 / CAA UK

Comment

Page 1-G-1 CS-VLA 1511 VFE should be VFE and VF should be VF

Response

Carried (F and FE should be subscript).

B1-SUB G-CS-VLA 1521

Para. (a)

62 / CAA UK

Comment

Page 1-G-1 CS-VLA 1521 (a) 'T h e' should be 'The'

Response

Carried.

B1-SUB G-CS-VLA 1525

Para.

3 / AOPA Italy Member

Comment

CS-VLA.1525 Kinds of Operation

The kinds of operation authorized (e.g. VFR, IFR, day or night) and the meteorological conditions (e.g. icing) to which the operation of the aeroplane is limited or from which it is prohibited, shall be established appropriate to the installed equipment.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

Para. General

52 / AOPA Italy Member

Comment

The kinds of operation authorized (e.g. VFR, IFR, day or night) and the meteorological conditions (e.g. icing) to which the operation of the aeroplane is limited or from which it is prohibited, shall be established appropriate to the installed equipment.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

Para.

3 / AOPA Italy Member

Comment

CS-VLA.1541 General

(a) The aeroplane shall contain:

- (1) the markings and placards specified in CS-VLA 1545 through CS-VLA 1555, CSVLA 1561 and CS-VLA.1557 through CS-VLA.1567, and
- (2) any additional information, instrument markings, and placards required for the safe operation if it has unusual design, operating, or handling characteristics.

(b) Each marking and placard prescribed in paragraph (a) of this section:

- (1) shall be displayed in a conspicuous place; and
- (2) shall not be easily erased, disfigured, or obscured.

(c) The units of measurement used on the placards shall be the same as those used on the indicators.

(d) For aeroplanes which are to be certificated in more than one category:

- (1) the applicant shall select one category upon which the placards and markings are to be based; and
- (2) the placards and markings information for all categories in which the aeroplane is to be certificated shall be furnished in the Aeroplane Flight Manual.

Response

Deferred. The concern related to category and operation is recognised. The Agency is recommended to review the matter with urgency.

Para. General

52 / AOPA Italy Member

Comment

CS-VLA.1541 General

(a) The aeroplane shall contain:

- (1) the markings and placards specified in CS-VLA 1545 through CS-VLA 1555, CSVLA 1561 and CS-VLA.1557 through CS-VLA.1567, and
- (2) any additional information, instrument markings, and placards required for the safe operation if it has unusual design, operating, or handling characteristics.

(b) Each marking and placard prescribed in paragraph (a) of this section:

- (1) shall be displayed in a conspicuous place; and
- (2) shall not be easily erased, disfigured, or obscured.

(c) The units of measurement used on the placards shall be the same as those used on the indicators.

(d) For aeroplanes which are to be certificated in more than one category:

- (1) the applicant shall select one category upon which the placards and markings are to be based; and
- (2) the placards and markings information for all categories in which the aeroplane is to be certificated shall be furnished in the Aeroplane Flight Manual.

Response

Deferred. The concern related to category and operation is recognised. The Agency is recommended to review the matter with urgency.

Para. (b)(1)

62 / CAA UK

Comment

Page 1-G-2 CS-VLA 1545(b)(1) VNE should be VNE

Response

Carried (NE should be subscript).

B1-SUB G-CS-VLA 1545

Para. (b)(3)

62 / CAA UK

Comment

Page 1-G-3 CS-VLA 1545(b)(3) Vsi should be VS1 and VNO should be VNO

Response

Carried (si should be S1 and NO and S1 should be subscript).

Para. (b)(4)

62 / CAA UK

Comment

Page 1-G-3 CS-VLA 1545(b)(4) VSO should be VS0 and VFE should be VFE

Response

Carried (SO should be S0 and FE should be subscript).

B1-SUB G-CS-VLA 1557

Para.

3 / AOPA Italy Member

Comment

CS-VLA.1557 Miscellaneous Markings and Placards

(a) Baggage and cargo compartments, and ballast location. Each baggage and cargo compartment, and each ballast location, shall have a placard stating any limitations on contents, including weight, that are necessary under the loading requirements.

(b) Fuel and oil filler openings. The following apply:

(1) fuel filler openings shall be marked at or near the filler cover with the minimum fuel grade, fuel designation, fuel capacity of the tank, and for each 2-stroke engine without a separate oil system, fuel/oil mixture ratio;

(2) oil filler openings shall be marked at or near the filler cover:

(i) with the grade, and

(ii) if the oil is detergent or non-detergent; and

(3) where placards and markings at the fuel or oil filler openings include tank capacity, the capacity shall be specified in litres. Imperial or U.S. gallons may also be included.

(c) Fuel tanks. The usable fuel capacity in volumetric units of each tank shall be marked at the selector and on the fuel quantity indicator. Units used on the fuel quantity indicator shall be consistent with (b)(3).

(d) When an emergency exit is provided in compliance with CS-VLA 807, each operating control shall be red. The placards shall be near each control and shall clearly indicate its method of operation.

(e) The system voltage of each direct current installation shall be clearly marked adjacent to its external power connection.

Response

Deferred.

Para. (b)(3) and last sentence of (c) are new requirements compared with JAR-VLA. The Agency may further review the need for such requirements.

Para. (a)

52 / AOPA Italy Member

Comment

(a) Baggage and cargo compartments, and ballast location. Each baggage and cargo compartment, and each ballast location, shall have a placard stating any limitations on contents, including weight, that are necessary under the loading requirements.

Response

Noted. No change required.

Para. (b)

52 / AOPA Italy Member

Comment

(b) Fuel and oil filler openings. The following apply:

(1) fuel filler openings shall be marked at or near the filler cover with the minimum fuel grade, fuel designation, fuel capacity of the tank, and for each 2-stroke engine without a separate oil system, fuel/oil mixture ratio;

(2) oil filler openings shall be marked at or near the filler cover:

(i) with the grade, and

(ii) if the oil is detergent or non-detergent; and

(3) where placards and markings at the fuel or oil filler openings include tank capacity, the capacity shall be specified in litres. Imperial or U.S. gallons may also be included.

Response

Deferred.

Para. (b)(3) is a new requirement compared with JAR-VLA. The Agency may further review the need for such a requirement.

Para. (c)

52 / AOPA Italy Member

Comment

(c) Fuel tanks. The usable fuel capacity in volumetric units of each tank shall be marked at the selector and on the fuel quantity indicator. Units used on the fuel quantity indicator shall be consistent with (b)(3).

Response

Deferred.

Last sentence of (c) is a new requirement compared with JAR-VLA. The Agency may further review the need for such a requirement.

Para. (d)

52 / AOPA Italy Member

Comment

(d) When an emergency exit is provided in compliance with CS-VLA 807, each operating control shall be red. The placards shall be near each control and shall clearly indicate its method of operation.

Response

Noted. No change required.

Para. (e)

52 / AOPA Italy Member

Comment

(e) The system voltage of each direct current installation shall be clearly marked adjacent to its external power connection.

Response

Noted. No change required.

Para.

3 / AOPA Italy Member

Comment

CS-VLA.1559 Operating Limitations Placard

(a) There shall be a placard in clear view of the pilot stating:

(1) that the aeroplane shall be operated in accordance with the Aeroplane Flight Manual; and

(2) the certification category of the aeroplane to which the placards apply.

(b) For aeroplanes certificated in more than one category, there shall be a placard in clear view of the pilot stating that other limitations are contained in the Aeroplane Flight Manual.

(c) There shall be a placard in clear view of the pilot that specifies the kind of operations to which the operation of the aeroplane is limited or from which it is prohibited under CSVLA. 1525.

Response

Deferred. The concern related to categories and operation is recognised. The Agency is recommended to review the matter with urgency.

Para.

70 / Aquila GmbH

Comment

CS-VLA 1559 Operating limitations placards

The following placards must be plainly visible to the pilot:

(a) A placard stating the following airspeeds (IAS):

(1) Design manoeuvring speed, VA;

(2) The maximum landing gear operating speed, VLO.

(b) A placard stating 'This aeroplane is classified as a very light aeroplane approved for day- and night- VFR only, in non-icing conditions. All aerobatic manoeuvres including intentional spinning are prohibited. See Flight Manual for other limitations'.

COMMENT:

Two seaters are mainly used as primary trainers, so the typical customers for these aircraft are flight training schools and flight clubs. These aircraft should meet the requirements of a modern training philosophy and the requirements of licensing under JAR-FCL. VLA-two seater training aircraft will be certified in future under the European Airworthiness code CS-VLA but do not fulfill the requirements for night VFR of JAR-FCL. Customers then are forced to purchase a second type of aircraft which has got a type certificate according to CS-23.

For operations in the US the FAA took notice and is according to Advisory Circular (AC) 23-11 upgrading these aircraft for night-VFR in the US, if they are equipped with the required lights (see also CS-VLA 1384) but only for north American manufacturers. European designs relying on a validation of the European or national Type Certificate by the FAA (validated following BASA) are excluded from this upgrade and are not competitive in the US-market. (see also comment CS-VLA 1)

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

Para. Page 1-G-4

62 / CAA UK

Comment

Page 1-G-4 CS-VLA 1559 VA should be VA, VLO should be VLO, and VER should be VFR

Response

Carried (A and LO should be subscript and VER should read VFR).

Para. (a)

52 / AOPA Italy Member

Comment

(a) There shall be a placard in clear view of the pilot stating:

(1) that the aeroplane shall be operated in accordance with the Aeroplane Flight Manual; and

(2) the certification category of the aeroplane to which the placards apply.

Response

Deferred. The concern related to categories and operation is recognised. The Agency is recommended to review the matter with urgency.

Para. (b)

52 / AOPA Italy Member

Comment

(b) For aeroplanes certificated in more than one category, there shall be a placard in clear view of the pilot stating that other limitations are contained in the Aeroplane Flight Manual.

Response

Deferred. The concern related to categories and operation is recognised. The Agency is recommended to review the matter with urgency.

Para. (c)

52 / AOPA Italy Member

Comment

(c) There shall be a placard in clear view of the pilot that specifies the kind of operations to which the operation of the aeroplane is limited or from which it is prohibited under CS-VLA. 1525.

Response

Deferred. The concern related to categories and operation is recognised. The Agency is recommended to review the matter with urgency.

Para.

3 / AOPA Italy Member

Comment

(a) Airspeed limitations. The following information shall be furnished:

- (1) information necessary for the marking of the airspeed limits on the indicator as required in CS-VLA 1545, and the significance of each of the colour coding used on the indicator; and
- (2) the speeds VA, VLE, and VLO where appropriate.

(b) Weights. The following information shall be furnished:

- (1) the maximum weight;
- (2) any other weight limits, if necessary.

(c) Centre of gravity. The established centre of gravity limits required by CS-VLA 23.

(d) Manoeuvres. The following authorized manoeuvres, appropriate airspeed limitations, and unauthorized manoeuvres, as prescribed in this section.

- (1) Normal category aeroplanes. No aerobatic manoeuvres, including spins, are authorized; and
- (2) Utility category aeroplanes. A list of authorized manoeuvres demonstrated in the type flight tests, together with recommended entry speeds and any other associated limitations. No other manoeuvre is authorized.

(e) Flight load factor. Manoeuvring load factors; the following shall be furnished:

- (1) the factors corresponding to point A and point C of figure 1 of CS-VLA 333 (b), stated to be applicable at VA ;
- (2) the factors corresponding to point D and point E of figure 1 of CS-VLA 333(b) to be applicable at VNE ;
- (3) the factor with wing flaps extended as specified in CS-VLA 345.

(f) Kinds of operation. A list of the kinds of operation to which the aeroplane is limited or from which it is prohibited under CS-VLA.1525, and also a list of installed equipment that affects any operating limitation and identification of the required operational status of the equipment for the kinds of operation for which approval has been given.

(g) Systems. Any limitations on the use of aeroplane systems and equipment.

(h) Power plant limitations. The following information shall be furnished:

- (1) limitations required by CS-VLA 1521;
- (2) information necessary for marking the instruments required by CS-VLA 1549 through CS-VLA 1553;
- (3) fuel and oil designation;
- (4) for two-stroke engines, fuel / oil ratio.

(i) Placards The placards required by CS-VLA.1541 shall be presented.

Response

Deferred. The concern related to categories, mass and operation is recognised. The Agency is recommended to review the matter with urgency.

Para. (a)

52 / AOPA Italy Member

Comment

(a) Airspeed limitations. The following information shall be furnished:

- (1) information necessary for the marking of the airspeed limits on the indicator as required in CS-VLA 1545, and the significance of each of the colour coding used on the indicator; and

- (2) the speeds VA, VLE, and VLO where appropriate.

Response

Noted. No change required.

Para. (a)(2)

62 / CAA UK

Comment

Page 1-G-4 CS-VLA 1583(a)(2) VA, VLO and VLE should be VA, VLO, and VLE respectively

Response

Carried (A, LO and LE should be subscript).

Para. (b)

52 / AOPA Italy Member

Comment

(b) Weights. The following information shall be furnished:

- (1) the maximum weight;
- (2) any other weight limits, if necessary.

Response

Noted. No change required.

Para. (c)

52 / AOPA Italy Member

Comment

(c) Centre of gravity. The established centre of gravity limits required by CS-VLA 23.

Response

Noted. No change required.

Para. (d)

52 / AOPA Italy Member

Comment

(d) Manoeuvres. The following authorized manoeuvres, appropriate airspeed limitations, and unauthorized manoeuvres, as prescribed in this section.

- (1) Normal category aeroplanes. No aerobatic manoeuvres, including spins, are authorized; and
- (2) Utility category aeroplanes. A list of authorized manoeuvres demonstrated in the type flight tests, together with recommended entry speeds and any other associated limitations. No other manoeuvre is authorized.

Response

Deferred. The concern related to categories is recognised. The Agency is recommended to review the matter with urgency.

62 / CAA UK

Comment

Page 1-G-5 CS-VLA 1583(d) 'withCS-VLA' should be 'with CS-VLA'

Response

Carried.

Para. (e)

52 / AOPA Italy Member

Comment

(e) Flight load factor. Manoeuvring load factors; the following shall be furnished:

- (1) the factors corresponding to point A and point C of figure 1 of CS-VLA 333 (b), stated to be applicable at VA ;
- (2) the factors corresponding to point D and point E of figure 1 of CS-VLA 333(b) to be applicable at VNE ;
- (3) the factor with wing flaps extended as specified in CS-VLA 345.

Response

Noted. No change required.

62 / CAA UK

Comment

Page 1-G-5 CS-VLA 1583(e) VA and VNE should be VA and VNE respectively

Response

Carried (A, NE should be subscript).

Para. (f)

52 / AOPA Italy Member

Comment

(f) Kinds of operation. A list of the kinds of operation to which the aeroplane is limited or from which it is prohibited under CS-VLA.1525, and also a list of installed equipment that affects any operating limitation and identification of the required operational status of the equipment for the kinds of operation for which approval has been given.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

Para. (g)

52 / AOPA Italy Member

Comment

(g) Systems. Any limitations on the use of aeroplane systems and equipment.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

Para. (h)

52 / AOPA Italy Member

Comment

(h) Power plant limitations. The following information shall be furnished:

- (1) limitations required by CS-VLA 1521;
- (2) information necessary for marking the instruments required by CS-VLA 1549 through CS-VLA 1553;
- (3) fuel and oil designation;
- (4) for two-stroke engines, fuel / oil ratio.

Response

Noted. No change required (remains (g)).

Para. (i)

52 / AOPA Italy Member

Comment

(i) Placards The placards required by CS-VLA.1541 shall be presented.

Response

Noted. No change required (remains (h)).

Para.

3 / AOPA Italy Member

Comment

CS-VLA.1585 Operating data and procedures

Information concerning normal and emergency procedures and other pertinent information necessary for safe operation shall be furnished, including:

- (a) the stall speed in the various configurations;
- (b) any loss of altitude more than 30 m or any pitch attitude more than 30° below the horizon occurring during the recovery part of the manoeuvre prescribed in CS-VLA 201;
- (c) any loss of altitude of more than 30 m occurring in the recovery part of the manoeuvre prescribed in CS-VLA 203;
- (d) recommended recovery procedure to recover from an inadvertent spin;
- (e) special procedures to start the engine in flight, if necessary;
- (f) information on the total quantity of usable fuel, and conditions under which the full amount of usable fuel in each tank can safely be used;
- (g) for each aeroplane showing compliance with CS-VLA 1353(g)(2) or (g)(3), the operating procedures for disconnecting the battery from its charging source shall be furnished.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

Para. General

52 / AOPA Italy Member

Comment

CS-VLA.1585 Operating data and procedures

Information concerning normal and emergency procedures and other pertinent information necessary for safe operation shall be furnished, including:

- (a) the stall speed in the various configurations;
- (b) any loss of altitude more than 30 m or any pitch attitude more than 30° below the horizon occurring during the recovery part of the manoeuvre prescribed in CS-VLA 201
- (c) any loss of altitude of more than 30 m occurring in the recovery part of the manoeuvre prescribed in CS-VLA 203;
- (d) recommended recovery procedure to recover from an inadvertent spin;
- (e) special procedures to start the engine in flight, if necessary;
- (f) information on the total quantity of usable fuel, and conditions under which the full amount of usable fuel in each tank can safely be used;
- (g) for each aeroplane showing compliance with CS-VLA 1353(g)(2) or (g)(3), the operating procedures for disconnecting the battery from its charging source shall be furnished.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

Para. (c)(1)

62 / CAA UK

Comment

Page 1-G-6 CS-VLA 1587(c)(1) text 'The airspeeds, procedures, and information pertinent to the use of the following airspeeds:' should be sub-paragraph (2)

Response

Carried.

Para. (c)(2)(i)

62 / CAA UK

Comment

Page 1-G-6 CS-VLA 1587(c)(2)(ii) VX should be V_X

Response

Carried. (X should be subscript)

Para. (d)

62 / CAA UK

Comment

Page 1-G-6 CS-VLA 1587(d) 'format' should be 'from at'

Response

Carried.

B1-Appendix A

Para. Page 1-App A-1 A1(a)

62 / CAA UK

Comment

Page 1-App A -1 A1(a) 'CS--VLA 321 t o 459' should be 'CS-VLA 321 to 459'

Response

Carried.

Para. Page 1-App A-1 A3

62 / CAA UK

Comment

Page 1-App A -1 A3 definition of V_{amin} should read 'Minimum Design Manoeuvring Speed.

Response

Carried. (amin should be subscript)

Para. Page 1-App A-1 A7(e)(2)

62 / CAA UK

Comment

Page 1-App A -1 A7(e)(2) V_{crnin} should be V_{cmin} , V_H should be V_H and n_i should be n₁

Response

Carried. (C_{min} and H should be subscript)

Para. Page 1-App A-2 A9(b)(1)(i)

62 / CAA UK

Comment

Page 1-App A -2 A9(b)(1)(i) V_{dmin} should be V_{dmin}

Response

Carried. (D_{min} should be subscript)

Para. Page 1-App A-2 A9(b)(2)

62 / CAA UK

Comment

Page 1-App A -2 A9(b)(2) V_{fmin} should be V_{fmin}

Response

Carried. (F_{min} should be subscript)

Para. Page 1-App A-2 A9(c)(1)

62 / CAA UK

Comment

Page 1-App A -2 A9(c)(1) 'A1 1(c)' should be 'A11(c)'

Response

Carried.

Para. Page 1-App A-2 A9(c)(3)

62 / CAA UK

Comment

Page 1-App A -2 A9(c)(3) VA should be VA

Response

Carried. (A should be subscript)

Para. Page 1-App A-3 A13(a)(1)

62 / CAA UK

Comment

Page 1-App A -3 A13(a)(1) 'paragraph A1 1' should be 'paragraph A 11'

Response

Carried.

Para. Page 1-App A-3 A9(c)(4)(ii)

62 / CAA UK

Comment

Page 1-App A -3 A9(c)(4)(ii) equation VD2 should be VD₂ and VC2 should be VC₂

Response

Carried. (D and C should be subscript and 2 represents the square of the speeds)

Para. Page 1-App A-3 A9(d)

62 / CAA UK

Comment

Page 1-App A -3 A9(d) 'mustbe' should be 'must be'

Response

Carried.

Para. Page 1-App A-1 A1(b)

62 / CAA UK

Comment

Page 1-App A-1 A1(b) text should read '... the same as the corresponding nomenclature and symbols in CS-VLA.'

Response

Carried.

Para. Page 1-App A-2 A9(b)(1)(ii)

62 / CAA UK

Comment

Page 1-App A -2 A9(b)(1)(ii) CAN and CAN should be CAN and Vamin should be Vamin

Response

Carried. (CNA and Amin should be subscript)

B1-Appendix B

Para. Page 1-App B-1 B11

62 / CAA UK

Comment

Page 1-App B-1 B11

- a) Sub-paragraph (a)(1) F should be w bar, average surface loading
- b) Sub-paragraph (a)(1)(i) 10" should be 10°
- c) Sub-paragraph (a)(1)(ii) 20" should be 20°
- d) Sub-paragraph (a)(1)(iii) 30" should be 30°
- e) Sub-paragraph (a)(2) % should be w bar, average surface loading
- f) Sub-paragraph (b)(1) W should be w bar, average surface loading
- g) Sub-paragraph (b)(2) F should be w bar, average surface loading
- h) Sub-paragraph (b)(3) W should be w bar, average surface loading
- i) Sub-paragraph (c) W should be w bar, average surface loading

Response

All Carried.

Para. Page 1-App B-2

62 / CAA UK

Comment

Page 1-App B-2 equation '(n1 ÷ 1.5)' should be '(n1-1.5)'

Response

Carried.

B1-Appendix C

Para. Page 1-App C-1

62 / CAA UK

Comment

Page 1-App C -1 Column for Tail-down landing Row for reference section should state 'CS-VLA 481(a)(1)'

Response

Carried for the Tail wheel type.

B1-Appendix F

Para. Page 1-App F-1 F4

62 / CAA UK

Comment

Page 1-App F-1 F4 "the bum length" should be "The burn length"

Response

Carried (!).

Para. Page 1-App F-1 F4

62 / CAA UK

Comment

Page 1-App F-1 F4 1550" should be 1550 degrees.

Response

Carried. The figure will be converted.

B2-AMC VLA 1(a)

Para. Page 2-1

62 / CAA UK

Comment

Page 2-1 AMC VLA 1(a) is missing.

Response

Noted. ACJ VLA 1(a) was deliberately omitted because "ultra-light" and "micro-light" aeroplanes are excluded from Regulation 1592/2002 by means of Annex II.

62 / CAA UK

Comment

Page 2-1 AMC VLA 1(a) should be AMC VLA 1(b).

Response

Noted. However, it will be renamed AMC VLA 1.

B2-AMC VLA 21 (d)

Para. Page 2-1 & 2-4

62 / CAA UK

Comment

- Page 2-1 AMC VLA 21(d) Paragraph 2 - VSO should be VSO

- Page 2-4 - incorrect page number in footer

Response

- Carried. (SO should be subscript).

- Noted. This will be corrected.

B2-AMC VLA 572 (a)

Para.

62 / CAA UK

Comment

- Page 2-4 – AMC VLA 572(a) should state 'given in the table in AMC VLA 572(b)'

- Page 2-6 – incorrect page number in footer

- Page 2-8 – incorrect page number in footer

- Page 2-10 – incorrect page number in footer

Response

- Carried.

- Noted. This will be corrected.

- Noted. This will be corrected.

- Noted. This will be corrected.

B2-AMC VLA 1436

Para.

62 / CAA UK

Comment

- Page 2-11 AMC VLA 1436 – title should state 'AMC VLA 1436'

- Page 2-12 – 'Authority' should be 'Agency'

- Page 2-20 Table

a) Row for White arc – '1-1 VSO' should be '1.1 VSO'

b) Row for Green arc – '1.1 Vsi' should be '1.1 VS1'

- Page 2-28 H.5.3.2 should be 'Endurance' and H.5.3.3 should be 'Balked Landing Climb'

Response

- Carried.

- Carried.

-

a) Carried.

b) Carried (si should be S1 and S1 should be subscript)

- Carried.

Para.

52 / Aopa Italy Member

Comment

CS-VLA.1401 Anti-collision Light System

Aeroplanes intended for VFR night or IFR operation shall meet the following requirements:

(a) General. The aeroplane shall have an anti-collision light system that:

- (1) consists of one or more approved anti-collision lights located so that their light will not impair the flight crew members' vision or detract from the conspicuity of the position lights; and
- (2) meets the requirements of paragraphs (b) through (f) of this section.

(b) Field of coverage. The system shall consist of enough lights to illuminate the vital areas around the aeroplane, considering the physical configuration and flight characteristics of the aeroplane. The field of coverage shall extend in each direction within at least 75° above and 75° below the horizontal plane of the aeroplane, except that there may be solid angles of obstructed visibility totalling not more than 0.5 steradians.

(c) Flashing characteristics. The arrangement of the system, that is, the number of light sources, beam width, speed of rotation, and other characteristics, shall give an effective flash frequency of not less than 40, nor more than 100, cycles per minute. The effective flash frequency is the frequency at which the aeroplane's complete anti-collision light system is observed from a distance, and applies to each sector of light including any overlaps that exist when the system consists of more than one light source. In overlaps, flash frequencies may exceed 100, but not 180, cycles per minute.

(d) Colour. Each anti-collision light shall be either aviation red or aviation white and shall meet the applicable requirements of CS-VLA.1397.

(e) Light intensity. The minimum light intensities in any vertical plane, measured with the red filter (if used) and expressed in terms of "effective" intensities, shall meet the requirements of paragraph (f) of this section. The following relation shall be assumed:

SEE HARDCOPY

where:

- le = effective intensity (candles);
- l(t) = instantaneous intensity as a function of time;
- t2-t1 = flash time interval (seconds).

Normally, the maximum value of effective intensity is obtained when t2 and t1 are chosen so that the effective intensity is equal to the instantaneous intensity at t2 and t1.

(f) Minimum effective intensities for anti-collision lights. Each anti-collision light effective intensity shall equal or exceed the applicable values in Table F4.

SEE HARDCOPY FOR :
Table F4

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

Para. Page 1-D-13 CS-VLA

62 / CAA UK

Comment

Page 1-D-13 CS-VLA INTENTIONALLY LEFT BLANK - 'left' is not in the standard font.

Response

Noted. This will be corrected.

Para. Article 5.2(a)

72 / Transport Canada

Comment

EASA Regulation (ER), Article 5.2.(a), stipulates that products shall have a type-certificate and that the type-certificate shall cover the product, including all parts and appliances fitted thereon.

•The explanatory memorandum, with respect to CS-22, states that this requirement means that: "...there is no longer a possibility of certifying the engine as part of the aircraft. Consequently, an engine to be fitted into a sailplane must have its own type certificate." If that is the case, then it should equally apply to VLA products and CS-VLA 903 should be explicit in identifying that a type certificated engine is required and should not just state that it has to meet the requirements of CS-22.

•The ER's wording, that products shall have a type-certificate and that the type-certificate shall cover the product, including all parts and appliances fitted thereon, begs the question: When does something become a product? If an engine is produced and marketed on its own, it is clearly a product and must be certified. But if the engine is part of a VLA, is it still a product? Or can a type certificate be issued for a VLA that covers the VLA as a product and all parts (including engines) and appliances? This scenario would seem to be acceptable under CS-VLA 903(a), which only requires that the engine meet the requirements of CS-22 Subpart H. It could be shown to do that as part of the aircraft compliance process. It does not need a type certificate as proof of compliance.

•Canadian (and US) regulations allow that engines and propellers intended for use on VLAs, powered gliders and airships be certificated as an integral part of the airplane or airship without the issue of a separate type certificate. In future, if EASA is requiring separate type certificates for engines and propellers, foreign VLAs, powered gliders and airships may have difficulties in obtaining European certification.

Response

Noted. Under article 5.2(a) of the regulation 1592/2002 and 21A.21(d) of Part 21, the engine or propeller, or both, must have their own type-certificates distinct from an aircraft type-certificate.

Para. CS VLA 1311

3 / AOPA Italy Member

Comment

CS-VLA.1311 Electronic Display Instrument Systems

Electronic display instrument systems installed in aircraft intended for VFR night or IFR operation shall meet the following requirements:

(a) electronic display indicators, including those with features that make isolation and independence between powerplant instrument systems impractical, shall:

- (1) meet the arrangement and visibility requirements of CS-VLA1321;
- (2) be easily legible under all lighting conditions encountered in the cockpit, including direct sunlight, considering the expected electronic display brightness level at the end of an electronic display indicator's useful life. Specific limitations on display system useful life shall be contained in the Maintenance Manual required by CS-VLA 1529;
- (3) not inhibit the primary display of attitude, airspeed, altitude, or power plant parameters needed by any pilot to set power within established limitations, in any normal mode of operation;
- (4) not inhibit the primary display of engine parameters needed by any pilot to properly set or monitor power plant limitations during the engine starting mode of operation;
- (5) have an independent magnetic direction indicator and either an independent secondary mechanical altimeter, airspeed indicator, and attitude instrument or individual electronic display indicators for the altitude, airspeed, and attitude that are independent from the aeroplane's primary electrical power system. These secondary instruments may be installed in panel positions that are displaced from the primary positions specified by CS-VLA.1321(c), but shall be located where they meet the pilot's visibility requirements of CS-VLA.1321(a);
- (6) incorporate sensory cues for the pilot that are equivalent to those in the instrument being replaced by the electronic display indicators; and
- (7) incorporate visual displays of instrument markings, required by CS-VLA.1541 and CS-VLA 1543 through CS-VLA 1551, or visual displays that alert the pilot to abnormal operational values or approaches to established limitation values, for each parameter required to be displayed by this CS-VLA.

(b) the electronic display indicators, including their systems and installations, and considering other aeroplane systems, shall be designed so that one display of information essential for continued safe flight and landing will remain available to the crew, without need for immediate action by any pilot for continued safe operation, after any single failure or probable combination of failures;

(c) as used in this section, "instrument" includes devices that are physically contained in one unit, and devices that are composed of two or more physically separate units or components connected together (such as a remote indicating gyroscopic direction indicator that includes a magnetic sensing element, a gyroscopic unit, an amplifier, and an indicator connected together). As used in this section, "primary" display refers to the display of a parameter that is located in the instrument panel such that the pilot looks at it first when wanting to view that parameter.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

Para. CS VLA 1381

3 / AOPA Italy Member

Comment

CS-VLA.1381 Instrument Lights

For aeroplanes intended for VFR night or IFR operation instrument lights shall:

- (a) make each instrument and control easily readable and discernible;
- (b) be installed so that their direct rays, and rays reflected from the windshield or other surface, are shielded from the pilot's eyes; and
- (c) have enough distance or insulating material between current carrying parts and the housing so that vibration in flight will not cause shorting.

Information note: A cabin dome light is not an instrument light.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

52 / AOPA Italy Member

Comment

CS-VLA.1381 Instrument Lights

Para. CS VLA 1381

For aeroplanes intended for VFR night or IFR operation instrument lights shall:

- (a) make each instrument and control easily readable and discernible;
- (b) be installed so that their direct rays, and rays reflected from the windshield or other surface, are shielded from the pilot's eyes; and
- (c) have enough distance or insulating material between current carrying parts and the housing so that vibration in flight will not cause shorting.

Information note: A cabin dome light is not an instrument light.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

Para. CS VLA 1383

3 / AOPA Italy Member

Comment

CS-VLA.1383 Taxi and Landing Lights

For aeroplanes intended for VFR night or IFR operation each taxi and landing light shall be designed and installed so that:

- (a) no dangerous glare is visible to the pilots;
- (b) the pilot is not seriously affected by halation;
- (c) it provides enough light for night operations; and
- (d) it does not cause a fire hazard in any configuration.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

52 / AOPA Italy Member

Comment

CS-VLA.1383 Taxi and Landing Lights

For aeroplanes intended for VFR night or IFR operation each taxi and landing light shall be designed and installed so that:

- (a) no dangerous glare is visible to the pilots;
- (b) the pilot is not seriously affected by halation;
- (c) it provides enough light for night operations; and
- (d) it does not cause a fire hazard in any configuration.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

Para. CS VLA 1385

3 / AOPA Italy Member

Comment

CS-VLA.1385 Position Light System Installation

Aeroplanes intended for VFR night or IFR operation shall meet the following requirements:

- (a) General. Each part of each position light system shall meet the applicable requirements of this section and each system as a whole shall meet the requirements of CS-VLA.1387 through CS-VLA.1397;
- (b) Left and right position lights. Left and right position lights shall consist of a red and a green light spaced laterally as far apart as practicable and installed on the aeroplane such that, with the aeroplane in the normal flying position, the red light is on the left side and the green light is on the right side;
- (c) Rear position light. The rear position light shall be a white light mounted as far aft as practicable on the tail or on each wing tip; and
- (d) Light covers and colour filters. Each light cover or colour filter shall be at least flame resistant and shall not change colour or shape or lose any appreciable light transmission during normal use.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

52 / AOPA Italy Member

Comment

CS-VLA.1385 Position Light System Installation

Aeroplanes intended for VFR night or IFR operation shall meet the following requirements:

Para. CS VLA 1385

(a) General. Each part of each position light system shall meet the applicable requirements of this section and each system as a whole shall meet the requirements of CS-VLA.1387 through CS-VLA.1397;

(b) Left and right position lights. Left and right position lights shall consist of a red and a green light spaced laterally as far apart as practicable and installed on the aeroplane such that, with the aeroplane in the normal flying position, the red light is on the left side and the green light is on the right side;

(c) Rear position light. The rear position light shall be a white light mounted as far aft as practicable on the tail or on each wing tip; and

(d) Light covers and colour filters. Each light cover or colour filter shall be at least flame resistant and shall not change colour or shape or lose any appreciable light transmission during normal use.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

Para. CS VLA 1387

3 / AOPA Italy Member

Comment

CS-VLA.1387 Position Light System Dihedral Angles

Aeroplanes intended for VFR night or IFR operation shall meet the following requirements:

(a) except as provided in paragraph (e) of this section, each position light shall, as installed, show unbroken light within the dihedral angles described in this section;

(b) dihedral angle L (left) is formed by two intersecting vertical planes, the first parallel to the longitudinal axis of the aeroplane, and the other at 110° to the left of the first, as viewed when looking forward along the longitudinal axis;

(c) dihedral angle R (right) is formed by two intersecting vertical planes, the first parallel to the longitudinal axis of the aeroplane, and the other at 110° to the right of the first, as viewed when looking forward along the longitudinal axis;

(d) dihedral angle A (aft) is formed by two intersecting vertical planes making angles of 70° to the right and to the left, respectively, to a vertical plane passing through the longitudinal axis, as viewed when looking aft along the longitudinal axis; and

(e) if the rear position light, when mounted as far aft as practicable in accordance with CSVLA. 1385 (c), cannot show unbroken light within dihedral angle A (as defined in paragraph (d) of this section), a solid angle or angles of obstructed visibility totalling not more than 0.04 steradians is allowable within that dihedral angle, if such solid angle is within a cone whose apex is at the rear position light and whose elements make an angle of 30° with a vertical line passing through the rear position light.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

52 / AOPA Italy Member

Comment

CS-VLA.1387 Position Light System Dihedral Angles

Aeroplanes intended for VFR night or IFR operation shall meet the following requirements:

(a) except as provided in paragraph (e) of this section, each position light shall, as installed, show unbroken light within the dihedral angles described in this section;

(b) dihedral angle L (left) is formed by two intersecting vertical planes, the first parallel to the longitudinal axis of the aeroplane, and the other at 110° to the left of the first, as viewed when looking forward along the longitudinal axis;

(c) dihedral angle R (right) is formed by two intersecting vertical planes, the first parallel to the longitudinal axis of the aeroplane, and the other at 110° to the right of the first, as viewed when looking forward along the longitudinal axis;

(d) dihedral angle A (aft) is formed by two intersecting vertical planes making angles of 70° to the right and to the left, respectively, to a vertical plane passing through the longitudinal axis, as viewed when looking aft along the longitudinal axis; and

(e) if the rear position light, when mounted as far aft as practicable in accordance with CSVLA. 1385 (c), cannot show unbroken light within dihedral angle A (as defined in paragraph (d) of this section), a solid angle or angles of obstructed visibility totalling not more than 0.04 steradians is allowable within that dihedral angle, if such solid angle is within a cone whose apex is at the rear position light and whose elements make an angle of 30° with a vertical line passing through the rear position light.

Para. CS VLA 1387

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

Para. CS VLA 1389

3 / AOPA Italy Member

Comment

CS-VLA.1389 Position Light Distribution and Intensities

Aeroplanes intended for VFR night or IFR operation shall meet the following requirements:

(a) General. The intensities prescribed in this section shall be provided by new equipment with each light cover and colour filter in place. Intensities shall be determined with the light source operating at a steady value equal to the average luminous output of the source at the normal operating voltage of the aeroplane. The light distribution and intensity of each position light shall meet the requirements of paragraph (b) of this section.

(b) Position lights. The light distribution and intensities of position lights shall be expressed in terms of minimum intensities in the horizontal plane, minimum intensities in any vertical plane, and maximum intensities in overlapping beams, within dihedral angles L, R, and A, and shall meet the following requirements:

(1) Intensities in the horizontal plane. Each intensity in the horizontal plane (the plane containing the longitudinal axis of the aeroplane and perpendicular to the plane of symmetry of the aeroplane) shall equal or exceed the values in CS-VLA.1391;

(2) Intensities in any vertical plane. Each intensity in any vertical plane (the plane perpendicular to the horizontal plane) shall equal or exceed the appropriate value in CS-VLA.1393, where I is the minimum intensity prescribed in CS-VLA.1391 for the corresponding angles in the horizontal plane; and

(3) Intensities in overlaps between adjacent signals. No intensity in any overlap between adjacent signals shall exceed the values in CS-VLA.1395, except that higher intensities in overlaps may be used with main beam intensities substantially greater than the minima specified in CS-VLA.1391 and CS-VLA.1393, if the overlap intensities in relation to the main beam intensities do not adversely affect signal clarity. When the peak intensity of the left and right position lights is more than 100 candelas, the maximum overlap intensities between them may exceed the values in CS-VLA.1395 if the overlap intensity in Area A is not more than 10 percent of peak position light intensity and the overlap intensity in Area B is not more than 2.5 percent of peak position light intensity.

(c) Rear position light installation. A single rear position light may be installed in a position displaced laterally from the plane of symmetry of an aeroplane if:

(1) the axis of the maximum cone of illumination is parallel to the flight path in level flight; and

(2) there is no obstruction aft of the light and between planes 70° to the right and left of the axis of maximum illumination.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

52 / aopa Italy Member

Comment

CS-VLA.1389 Position Light Distribution and Intensities

Aeroplanes intended for VFR night or IFR operation shall meet the following requirements:

(a) General. The intensities prescribed in this section shall be provided by new equipment with each light cover and colour filter in place. Intensities shall be determined with the light source operating at a steady value equal to the average luminous output of the source at the normal operating voltage of the aeroplane. The light distribution and intensity of each position light shall meet the requirements of paragraph (b) of this section.

(b) Position lights. The light distribution and intensities of position lights shall be expressed in terms of minimum intensities in the horizontal plane, minimum intensities in any vertical plane, and maximum intensities in overlapping beams, within dihedral angles L, R, and A, and shall meet the following requirements:

(1) Intensities in the horizontal plane. Each intensity in the horizontal plane (the plane containing the longitudinal axis of the aeroplane and perpendicular to the plane of symmetry of the aeroplane) shall equal or exceed the values in CS-VLA.1391;

(2) Intensities in any vertical plane. Each intensity in any vertical plane (the plane perpendicular to the horizontal plane) shall equal or exceed the appropriate value in CS-VLA.1393, where I is the minimum intensity prescribed in CS-VLA.1391 for the corresponding angles in the horizontal plane; and

(3) Intensities in overlaps between adjacent signals. No intensity in any overlap between adjacent signals shall exceed the values in CS-VLA.1395, except that higher intensities in overlaps may be used with main beam intensities substantially greater than the minima specified in CS-VLA.1391 and CS-VLA.1393, if the overlap

Para. CS VLA 1389

intensities in relation to the main beam intensities do not adversely affect signal clarity. When the peak intensity of the left and right position lights is more than 100 candles, the maximum overlap intensities between them may exceed the values in CSVLA. 1395 if the overlap intensity in Area A is not more than 10 percent of peak position light intensity and the overlap intensity in Area B is not more than 2.5 percent of peak position light intensity.

(c) Rear position light installation. A single rear position light may be installed in a position displaced laterally from the plane of symmetry of an aeroplane if:

- (1) the axis of the maximum cone of illumination is parallel to the flight path in level flight; and
- (2) there is no obstruction aft of the light and between planes 70° to the right and left of the axis of maximum illumination.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

Para. CS VLA 1391

3 / AOPA Italy Member

Comment

CS-VLA.1391 Minimum Intensities in the Horizontal Plane of Position Lights

For aeroplanes intended for VFR night or IFR operation each position light intensity shall equal or exceed the applicable values in Table F1.

SEE HARDCOPY FOR TABLE F1

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

52 / AOPA Italy Member

Comment

CS-VLA.1391 Minimum Intensities in the Horizontal Plane of Position Lights

For aeroplanes intended for VFR night or IFR operation each position light intensity shall equal or exceed the applicable values in Table F1.

SEE HARDCOPY FOR:
Table F1

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

Para. cs vla 1393

3 / AOPA Italy Member

Comment

CS-VLA.1393 Minimum Intensities in any Vertical Plane of Position Lights

For aeroplanes intended for VFR night or IFR operation each position light intensity shall equal or exceed the applicable values in Table F2.

SEE HARDCOPY FOR TABLE F2

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

52 / AOPA Italy Member

Comment

CS-VLA.1393 Minimum Intensities in any Vertical Plane of Position Lights

For aeroplanes intended for VFR night or IFR operation each position light intensity shall equal or exceed the applicable values in Table F2.

SEE HARDCOPY FOR:
Table F2

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

Para. cs vla 1395

3 / AOPA Italy Member

Comment

CS-VLA.1395 Maximum Intensities in Overlapping Beams of Position Lights

For aeroplanes intended for VFR night or IFR operation no position light intensity shall exceed the applicable values in Table F3, except as provided in CS-VLA.1389 (b)(3).

SEE HARDCOPY FOR TABLE F3

Where:

- (a) area A includes all directions in the adjacent dihedral angle that pass through the light source and intersect the common boundary plane at more than 10° but less than 20°; and
- (b) area B includes all directions in the adjacent dihedral angle that pass through the light source and intersect the common boundary plane at more than 20°.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

52 / AOPA Italy Member

Comment

CS-VLA.1395 Maximum Intensities in Overlapping Beams of Position Lights

For aeroplanes intended for VFR night or IFR operation no position light intensity shall exceed the applicable values in Table F3, except as provided in CS-VLA.1389 (b)(3).

SEE HARDCOPY FOR:
Table F3

Where:

- (a) area A includes all directions in the adjacent dihedral angle that pass through the light source and intersect the common boundary plane at more than 10° but less than 20°; and
- (b) area B includes all directions in the adjacent dihedral angle that pass through the light source and intersect the common boundary plane at more than 20°.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

Para. CS VLA 1397

3 / AOPA Italy Member

Comment

CS-VLA.1397 Colour Specifications

For aeroplanes intended for VFR night or IFR operation each position light colour shall have the applicable International Commission on Illumination chromaticity co-ordinates as follows:

- (a) aviation red:
"y" is not greater than 0.335, and
"z" is not greater than 0.002;
- (b) aviation green:
"x" is not greater than 0.440-0.320 y;
"x" is not greater than y-0.170; and
"y" is not less than 0.390-0.170x;
- (c) aviation white:
"x" is not less than 0.300 and not greater than 0.540;
"y" is not less than "x-0.040" or "yo-0.010", whichever is the smaller; and
"y" is not greater than "x+0.020" nor "0.636-0.400x".

Where "yo" is the "y" co-ordinate of the Planckian radiator for the value of "x" considered.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

52 / AOPA Italy Member

Comment

CS-VLA.1397 Colour Specifications

For aeroplanes intended for VFR night or IFR operation each position light colour shall have the applicable International Commission on Illumination chromaticity co-ordinates as follows:

- (a) aviation red:
"y" is not greater than 0.335, and
"z" is not greater than 0.002;
- (b) aviation green:

Para. CS VLA 1397

"x" is not greater than $0.440 - 0.320y$;
"x" is not greater than $y - 0.170$; and
"y" is not less than $0.390 - 0.170x$;

(c) aviation white:

"x" is not less than 0.300 and not greater than 0.540;
"y" is not less than "x-0.040" or "y-0.010", whichever is the smaller; and
"y" is not greater than "x+0.020" nor "0.636-0.400x".

Where "yo" is the "y" co-ordinate of the Planckian radiator for the value of "x" considered.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

Para. CS VLA 1401

52 / AOPA Italy Member

Comment

CS-VLA.1311 Electronic Display Instrument Systems

Electronic display instrument systems installed in aircraft intended for VFR night or IFR operation shall meet the following requirements:

(a) electronic display indicators, including those with features that make isolation and independence between powerplant instrument systems impractical, shall:

- (1) meet the arrangement and visibility requirements of CS-VLA1321;
- (2) be easily legible under all lighting conditions encountered in the cockpit, including direct sunlight, considering the expected electronic display brightness level at the end of an electronic display indicator's useful life. Specific limitations on display system useful life shall be contained in the Maintenance Manual required by CS-VLA 1529;
- (3) not inhibit the primary display of attitude, airspeed, altitude, or power plant parameters needed by any pilot to set power within established limitations, in any normal mode of operation;
- (4) not inhibit the primary display of engine parameters needed by any pilot to properly set or monitor power plant limitations during the engine starting mode of operation;
- (5) have an independent magnetic direction indicator and either an independent secondary mechanical altimeter, airspeed indicator, and attitude instrument or individual electronic display indicators for the altitude, airspeed, and attitude that are independent from the aeroplane's primary electrical power system. These secondary instruments may be installed in panel positions that are displaced from the primary positions specified by CS-VLA.1321(c), but shall be located where they meet the pilot's visibility requirements of CS-VLA.1321(a);
- (6) incorporate sensory cues for the pilot that are equivalent to those in the instrument being replaced by the electronic display indicators; and
- (7) incorporate visual displays of instrument markings, required by CS-VLA.1541 and CS-VLA 1543 through CS-VLA 1551, or visual displays that alert the pilot to abnormal operational values or approaches to established limitation values, for each parameter required to be displayed by this CS-VLA.

(b) the electronic display indicators, including their systems and installations, and considering other aeroplane systems, shall be designed so that one display of information essential for continued safe flight and landing will remain available to the crew, without need for immediate action by any pilot for continued safe operation, after any single failure or probable combination of failures;

(c) as used in this section, "instrument" includes devices that are physically contained in one unit, and devices that are composed of two or more physically separate units or components connected together (such as a remote indicating gyroscopic direction indicator that includes a magnetic sensing element, a gyroscopic unit, an amplifier, and an indicator connected together). As used in this section, "primary" display refers to the display of a parameter that is located in the instrument panel such that the pilot looks at it first when wanting to view that parameter.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

Para. CS VLA 1563

3 / AOPA Italy Member

Comment

CS-VLA.1563 Airspeed Placards

There shall be an airspeed placard in clear view of the pilot and as close as practicable to the airspeed indicator. This placard shall list:

- (a) the operating manoeuvring speed, VO; and
- (b) the maximum landing gear operating speed VLO.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

52 / AOPA Italy Member

Comment

There shall be an airspeed placard in clear view of the pilot and as close as practicable to the airspeed indicator. This placard shall list:

- (a) the operating manoeuvring speed, VO; and
- (b) the maximum landing gear operating speed VLO.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

Para. CS VLA 1567

3 / AOPA Italy Member

Comment

CS-VLA.1567 Flight Manoeuvre Placard

(a) For normal category aeroplanes, there shall be a placard in front of and in clear view of the pilot stating: "No aerobatic manoeuvres, including spins, approved".

(b) For utility category aeroplanes, there shall be:

(1) a placard in clear view of the pilot stating: "Aerobatic manoeuvres are limited to the following ..." (list approved manoeuvres and the recommended entry speed for each); and

(2) for those aeroplanes that do not meet the spin requirements of CS-VLA.221(c), an additional placard in clear view of the pilot stating: "Spins Prohibited".

(c) for utility category aeroplanes approved for spinning, there shall be a placard in clear view of the pilot:

- (1) listing the control actions for recovery from spinning manoeuvres; and
- (2) stating that recovery shall be initiated when spiral characteristics appear, or after not more than six turns or not more than any greater number of turns for which the aeroplane has been certificated.

Response

Deferred. The concern related to categories and operation is recognised. The Agency is recommended to review the matter with urgency.

Para. CS VLA 1567 (a)

52 / AOPA Italy Member

Comment

(a) For normal category aeroplanes, there shall be a placard in front of and in clear view of the pilot stating: "No aerobatic manoeuvres, including spins, approved".

Response

Deferred. The concern related to categories is recognised. The Agency is recommended to review the matter with urgency.

Para. CS VLA 1567 (b)

52 / AOPA Italy Member

Comment

(b) For utility category aeroplanes, there shall be:

(1) a placard in clear view of the pilot stating: "Aerobatic manoeuvres are limited to the following ... " (list approved manoeuvres and the recommended entry speed for each); and

(2) for those aeroplanes that do not meet the spin requirements of CS-VLA.221(c), an additional placard in clear view of the pilot stating: "Spins Prohibited".

Response

Deferred. The concern related to categories is recognised. The Agency is recommended to review the matter with urgency.

Para. CS VLA 1567 (c)

52 / AOPA Italy Member

Comment

(c) for utility category aeroplanes approved for spinning, there shall be a placard in clear view of the pilot:

(1) listing the control actions for recovery from spinning manoeuvres; and

(2) stating that recovery shall be initiated when spiral characteristics appear, or after not more than six turns or not more than any greater number of turns for which the aeroplane has been certificated.

Response

Deferred. The concern related to categories is recognised. The Agency is recommended to review the matter with urgency.

Para. CS VLA 867

3 / AOPA Italy Member

Comment

CS -VLA.867 Electrical Bonding and Protection Against Lightning and Static Electricity

Aeroplanes intended for IFR operation shall meet the following requirements:

(a) the aeroplane shall be protected against catastrophic effects from lightning;

(b) for metallic components, compliance with paragraph (a) of this section may be shown by:

- (1) bonding the components properly to the airframe, or
- (2) designing the components so that a strike will not endanger the aeroplane.

(c) for non-metallic components, compliance with paragraph (a) of this section may be shown by:

- (1) designing the components to minimize the effect of a strike, or
- (2) incorporating acceptable means of diverting the resulting electrical current so as not to endanger the aeroplane.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

52 / AOPA Italy Member

Comment

CS -VLA.867 Electrical Bonding and Protection Against Lightning and Static Electricity

Aeroplanes intended for IFR operation shall meet the following requirements:

(a) the aeroplane shall be protected against catastrophic effects from lightning;

(b) for metallic components, compliance with paragraph (a) of this section may be shown by:

- (1) bonding the components properly to the airframe, or
- (2) designing the components so that a strike will not endanger the aeroplane.

(c) for non-metallic components, compliance with paragraph (a) of this section may be shown by:

- (1) designing the components to minimize the effect of a strike, or
- (2) incorporating acceptable means of diverting the resulting electrical current so as not to endanger the aeroplane.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

Para. CS VLA 954

3 / AOPA Italy Member

Comment

CS-VLA.954 Fuel System Lightning Protection

The fuel system for aeroplanes intended for IFR operation shall be designed and arranged to prevent the ignition of fuel vapour within the system by:

- (a) direct lightning strikes to areas having a high probability of stroke attachment;
- (b) swept lightning strokes on areas where swept strokes are highly probable; and
- (c) corona or streamer at fuel vent outlets.]

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

52 / AOPA Italy Member

Comment

CS-VLA.954 Fuel System Lightning Protection

The fuel system for aeroplanes intended for IFR operation shall be designed and arranged to prevent the ignition of fuel vapour within the system by:

- (a) direct lightning strikes to areas having a high probability of stroke attachment;
- (b) swept lightning strokes on areas where swept strokes are highly probable; and
- (c) corona or streamer at fuel vent outlets.

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

Para. CS-VLA 1401

3 / AOPA Italy Member

Comment

CS-VLA.1401 Anti-collision Light System

Aeroplanes intended for VFR night or IFR operation shall meet the following requirements:

(a) General. The aeroplane shall have an anti-collision light system that:

(1) consists of one or more approved anti-collision lights located so that their light will not impair the flight crew members' vision or detract from the conspicuity of the position lights; and

(2) meets the requirements of paragraphs (b) through (f) of this section.

(b) Field of coverage. The system shall consist of enough lights to illuminate the vital areas around the aeroplane, considering the physical configuration and flight characteristics of the aeroplane. The field of coverage shall extend in each direction within at least 75° above and 75° below the horizontal plane of the aeroplane, except that there may be solid angles of obstructed visibility totalling not more than 0.5 steradians.

(c) Flashing characteristics. The arrangement of the system, that is, the number of light sources, beam width, speed of rotation, and other characteristics, shall give an effective flash frequency of not less than 40, nor more than 100, cycles per minute. The effective flash frequency is the frequency at which the aeroplane's complete anti-collision light system is observed from a distance, and applies to each sector of light including any overlaps that exist when the system consists of more than one light source. In overlaps, flash frequencies may exceed 100, but not 180, cycles per minute.

(d) Colour. Each anti-collision light shall be either aviation red or aviation white and shall meet the applicable requirements of CS-VLA.1397.

(e) Light intensity. The minimum light intensities in any vertical plane, measured with the red filter (if used) and expressed in terms of "effective" intensities, shall meet the requirements of paragraph (f) of this section. The following relation shall be assumed:

SEE HARDCOPY FOR DETAILS OF EQUATION

where:

I_e = effective intensity (candles);

$I(t)$ = instantaneous intensity as a function of time;

$t_2 - t_1$ = flash time interval (seconds).

Normally, the maximum value of effective intensity is obtained when t_2 and t_1 are chosen so that the effective intensity is equal to the instantaneous intensity at t_2 and t_1 .

(f) Minimum effective intensities for anti-collision lights. Each anti-collision light effective intensity shall equal or exceed the applicable values in Table F4.

SEE HARDCOPY FOR TABLE F4

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.

Para. Editorials

72 / Transport Canada

Comment

•Numerous typographical errors are contained in the draft document; for example, p in place the Greek letter ρ in CS-VLA 341, y in place of a comma in CS-VLA 441(b) and CS-VLA 477, mh in place of m/s in the definition of V in CS-VLA 443. In some cases the errors may not be obvious but may be significant, e.g. changing "need not exceed" to "need to exceed" in the definition of q in CS-VLA 415(2).

•Some errors relate to subscripts or superscripts. e.g. V_{sl} or V^{SI} instead of V_{s1}, cm³ instead of cm₃, throughout Subpart B. In some cases, the meaning is clear, as in cm³ instead of cm₃. But in other cases, an exponent could be confused with a multiplication factor. In some cases this confusion arises because the figures in some of the mathematical calculations are misaligned as compared to JAR-VLA, e.g. the design air load calculations in CS-VLA 335(a)(1) and (c)(1).

•Text has been omitted in some sections, e.g. CS-VLA 201(d)(2) and CS-VLA 345(a)(1), and added, apparently incorrectly in others, e.g. CS-VLA 191(b)(1).

•All units have been converted to SI units. Those conversions and the units of measure need to be verified. CS-VLA 207 refers to a stall speed margin of 18.5 m/s (10 knots), CS-VLA 233 refers to a wind velocity of 18.5 km/h (10 knots). Our conversion suggests the latter figure to be correct and that 18.5 m/s would actually be 37 knots.

Response

Noted. This will be corrected in view of other comments received.

Para. Explanatory Memorandum

72 / Transport Canada

Comment

The explanatory memorandum requests views on whether engine and propeller requirements should remain in CS-22 or be moved to CS-E or CS-P.

•Other than having all the engine specifications in one place, Transport Canada sees little value in moving the CS-22 requirements for engines and propellers to CS-E and CS-P. The application for CS-22 / JAR-22 engines is limited. The only type certified aircraft they are used with are motor-glanders and VLAs. The CS-22 engine or propeller provisions are sparse in comparison with the wide application of JAR-E engines in terms of variety of aircraft and engine types and types of operation and the great difference in the complexity of the regulation. Furthermore, if EASA intends to continue the present practice of allowing the certification of engines and propellers as part of the aircraft certification, prudence would favor these requirements to be in the respective VLA or powered glider regulations.

Response

Noted.

During the consultation for CS-E, CS-P, CS-22, CS-VLA, CS-VLR, the views of the commentators were requested on what is the most appropriate location for the certification specifications to be used for engine and propeller to be installed on powered sailplanes, very light aeroplanes (VLA) and very light rotorcraft (VLR).

The following points should be kept in mind:

The Basic Regulation 1592/2002 requires all products to have a Type Certificate. Engine and propeller of whatever size or design, are defined in the Regulation as products.

It is clear that the levels of safety intended by the current JAR-E (CS-E is based on JAR-E plus CS-22 subpart H plus appendix B of JAR-VLR) are higher than that intended by the engine requirements in JAR-22 and JAR-VLR (Used as the basis for CS-22 and CS-VLR).

It is important both that the Agency maintains this principle of the level of regulation being appropriate to the intended use of the product, and that this is clear to all interested parties.

It is important that the location of the requirements (whether in CS-E or CS-22 etc.) should not affect in any way the rigor with which compliance is both demonstrated and found.

Two solutions were offered:

- 1) To place such certification specifications in the certification specifications for engines (CS-E) and certification specifications for propellers (CS-P) (Consistency of engine and propeller texts being the main rationale).
- 2) To place such certification specifications in the aircraft certification specifications either directly (CS-22 and CS-VLR) or by cross-reference (CS-VLA) (Use of an aircraft system approach being the main rationale).

It should be noted that the issue was only related to the location : the texts were technically unchanged (only editorial changes).

A careful review of received comments does not show a clear majority in favour of one or the other solution. Both Authorities and Interested Parties are divided on the issue.

To find a solution for the first issue of all CS, the following was agreed:

-Solution 2 should be adopted because it complies with the general principle of transformation of JARs into CS (avoiding changes). Currently, the engine and propeller certification specifications for powered sailplane, VLA and VLR are included directly or by cross-reference in the corresponding JAR.

-However, the appendix B of JAR-VLR should be replaced by the corresponding text that was included into the draft CS-E circulated for comments. The latter is considered more adequate as specifications for a separate engine certification (imposed by EU Regulation 1592 and Part 21), avoiding the confusing numerous cross references to aircraft specifications.

Para. VLA 1559

71 / AOPA

Comment

CS-VLA 1559 Operating limitations placards

The following placards must be plainly visible to the pilot:

(a) A placard stating the following airspeeds (IAS):

(1) Design manoeuvring speed, VA;

(2) The maximum landing gear operating speed, VLO.

(b) A placard stating 'This aeroplane is classified as a very light aeroplane approved for day- and night- VFR only, in non-icing conditions. All aerobatic manoeuvres including intentional spinning are prohibited. See Flight Manual for other limitations'.

COMMENT:

Two seaters are mainly used as primary trainers, so the typical customers for these aircraft are flight training schools and flight clubs. These aircraft should meet the requirements of a modern training philosophy and the requirements of licensing under JAR-FCL. VLA-two seater training aircraft will be certified in future under the European Airworthiness code CS-VLA but do not fulfill the requirements for night VFR of JAR-FCL. Customers then are forced to purchase a second type of aircraft which has got a type certificate according to CS-23. For operations in the US the FAA took notice and is according to Advisory Circular (AC) 23-11 upgrading these aircraft for night-VFR in the US, if they are equipped with the required lights (see also CS-VLA 1384) but only for north American manufacturers. European designs relying on a validation of the European or national Type Certificate by the FAA (validated following BASA) are excluded from this upgrade and are not competitive in the US-market.
(see also comment CS-VLA 1)

Response

Deferred. The concern related to operation is recognised. The Agency is recommended to review the matter with urgency.