Schweizerische Eidgenossenschaft
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Federal Department of the
Environment, Transport, Energy and Communications DETEC

Federal Office of Civil Aviation FOCA
Division Safety Division - Flight Operations
Aeromedical Section (AMS)

Federal Office of Civil Aviation Switzerland

Safety Division

Aeromedical Section

Notification of Alternative Means of Compliance

Regulation Reference: COMMISSION REGULATION (EU) No 1178/2011 Annex: IV Part MED

Subject: Colour Vision

Summary: The advanced methods of colour vision do not include the most reliable, validated test, the Colour Assessment and Diagnosis (CAD) Test, which needs to be included.

Implementing Rule: MED.B.075 Colour vision

MED.B.075 Colour vision

(a) Applicants shall be required to demonstrate the ability to perceive readily the colours that are necessary for the safe performance of duties.

(b) *Examination*

(1) Applicants shall pass the Ishihara test for the initial issue of a medical certificate.

(2) Applicants who fail to pass in the Ishihara test shall undergo further colour perception testing to establish whether they are colour safe.

(c) In the case of Class 1 medical certificates, applicants shall have normal perception of colours or be colour safe. Applicants who fail further colour perception testing shall be assessed as unfit. Applicants for a Class 1 medical certificate shall be referred to the licensing authority.

(d) In the case of Class2 medical certificates, when the applicant does not have satisfactory perception of colours, his/her flying privileges shall be limited to daytime only.

Existing Acceptable Means of Compliance:

AMC1 MED.B.075 Colour vision

(a) At revalidation, colour vision should be tested on clinical indication

(b) The Ishihara test (24 plate version) is considered passed if the first 15 plates, presented in a random order, are identified without error.

(c) Those failing the Ishihara test should be examined either by:

(1) anomaloscopy (Nagel or equivalent). This test is considered passed if the colour match is trichromatic and the matching range is 4 scale units or less; or by

(2) lantern testing with a Spectrolux, Beynes or Holmes-Wright lantern. This test is considered passed if the applicant passes without error a test with accepted lanterns.

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FOCA Switzerland Alternative Means of Compliance:

Alternative AMC1 MED.B.075 Colour vision

(a) At revalidation, colour vision should be tested on clinical indication.

(b) The Ishihara test (24 plate version) is considered passed if the first 15 plates, presented in a random order, are identified without error.

(c) Those failing the Ishihara test should be examined either by:

(1) anomaloscopy (Nagel or equivalent). This test is considered passed if the colour match is trichromatic and the matching range is 4 scale units or less: or by

(2) lantern testing with a Spectrolux, Beynes or Holmes-Wright lantern. This test is considered passed if the applicant passes without error a test with accepted lanterns; or by

(3) Colour Assessment ad Diagnosis (CAD) Test. This is considered passed if the threshold is less than 6 SU for deutan deficiency , or less than 12 SU for protan deficiency. A threshold greater than 2 SU for tritan deficiency indicates an acquired cause which should be investigated.

Assessment:

Assessed as meeting the Implementing Rule MED.B.075

There is a wide diversity of colour testing methods employed and standards used for the assessment of flight crew colour vision throughout the world, including between European States. Colour vision requirements based on historical lantern tests are open to interpretation, are not reliable and are not appropriate for aviation use.

The Colour Assessment and Diagnosis Test developed at the Applied Vision Research Centre at City University, London, UK provides an accurate assessment of an applicant's colour vision meets the requirement to perceive correctly and rapidly the colour of lights involved in aviation colour-critical tasks.

The relevant research papers are:

(1) CAA Paper 2006/04 Part 1: Minimum Colour Vision Requirements for Flight Crew: The Use of Colour Signals and the Assessment of Colour Vision Requirements in Aviation
http://www.caa.co.uk/application.aspx?catid=33&pagetype=65&appid=11&mode=detail&id=2407

(2) CAA Paper 2006/4 Part 2: Minimum Colour Vision requirements for Professional Flight Crew: Task Analysis
http://www.caa.co.uk/application.aspx?catid=33&pagetype=65&appid=11&mode=detail&id=2408

(3) CAA Paper 2009/04 Minimum Colour Vision Requirements for Professional Flight Crew: Recommendations for new colour vision standard
http://www.caa.co.uk/application.aspx?catid=33&pagetype=65&appid=11&mode=detail&id=3560

Approved for submission to the Agency by: Dr. Severin Muff, Chief Medical Officer

Signature: 

Date: 10.03.2014