

AMENDMENT OF TECHNICAL STANDARDS

CARcom has recommended in terms of regulation 11.03.2(7) of the Civil Aviation Regulations, 1997, that the Commissioner for Civil Aviation amend a certain Technical Standard, namely, Document SA-CATS-MR. The Commissioner for Civil Aviation has in terms of regulation 11.04.5 of the said regulations accepted the said recommendation, as it would be in the interests of aviation safety. The stated Technical Standard as contained in the Schedule is herewith amended and the amendment shall come into operation on 01 February 2010.

Capt. Colin Jordaan
Commissioner for Civil Aviation
Date: _____

SCHEDULE 1

Amendment of colour vision requirements for Class I medical certificates

1. Document SA-CATS-MR is hereby amended by the substitution for paragraph 3.6 of the following paragraph:

“3.6 Class I colour perception standards

- (1) Applicants must be able to demonstrate ability to perceive readily those colours the perception of which is necessary for the safe performance of duties. The use of tinted lenses to obtain adequate colour perception is not permitted.
- (2) Applicants must be tested for the ability to correctly identify a series of pseudo-isochromatic plates (tables) in daylight or in artificial light of the same colour temperature such as that provided by Illuminant "C" or "D" as specified by the International Commission on Illumination (ICl).
- (3) Applicants shall be deemed to have scored satisfactorily in these tests if they have committed no errors on the test.
- (4) Applicants who fail to obtain a satisfactory score in such a test may nevertheless be assessed as fit if the applicants are able to readily and correctly identify aviation coloured lights displayed by means of a recognised colour perception lantern, i.e. Farnsworth, Beyenne, Holmes-Wright type A or Spectrolux.

- (5) The procedure for the performance of a Farnsworth Lantern test shall be as detailed in this document (Note: The Farnsworth D15 is not an acceptable test).
- (6) Applicants who obtain a satisfactory score in any of the tests in (4) above shall be deemed to be Grade II colour-safe.
- (7) Applicants who are deemed to be Grade II colour-safe shall repeat steps (2) to (4) as necessary on an annual basis, provided the Commissioner reserves the right to extend such period as necessary.
- (8) Applicants who fail to obtain a satisfactory score in any of the tests detailed in (4) above may nevertheless be assessed as fit, provided the following criteria are met:
 - (a) Applicants must submit a satisfactory report from an ophthalmologist declaring the applicant deuteranomalous (Red/ Green colour deficient);
 - (b) Applicants with any abnormality of colour perception other than deuteranomaly shall be assessed as unfit;
 - (c) Guidelines for Ophthalmologists as detailed in this document shall be adhered to by the examining ophthalmologist;
 - (d) Applicants must undergo a practical flight test with an instructor designated by the Commissioner;
 - (e) The procedure for the practical flight test shall be as detailed in this document;
 - (f) A satisfactory report declaring that the applicant can safely identify all the aviation lights necessary for the safe performance of duties must be submitted;
- (9) Applicants who submit satisfactory reports related to paragraph (8) above shall be deemed to be Grade II colour-safe.
- (10) Such restriction shall appear on the applicant's medical certificate permanently.
- (11) Applicants who are deemed to be Grade II colour-safe in accordance with paragraph (10) shall submit an ophthalmologist report on an annual basis.
- (12) Any deterioration in any of the visual parameters shall result in an applicant being deemed unfit to fly, and being required to repeat step (9) above in its entirety.
- (13) Stereopsis and NPC testing will be required.

(14) Full visual fields will be required.”.

Amendment of colour vision requirements for Class II medical certificates

2. Document SA-CATS-MR is hereby amended by the substitution for paragraph 3.6 of the following paragraph:

“3.6 Class II colour perception standards

- (1) Applicants must be able to demonstrate ability to perceive readily those colours the perception of which is necessary for the safe performance of duties. The use of tinted lenses to obtain adequate colour perception is not permitted.
- (2) Applicants must be tested for the ability to correctly identify a series of pseudo-isochromatic plates (tables) in daylight or in artificial light of the same colour temperature such as that provided by Illuminant "C" or "D" as specified by the International Commission on Illumination (ICI).
- (3) Applicants shall be deemed to have scored satisfactorily in these tests if they have committed no errors on the test.
- (4) Applicants who fail to obtain a satisfactory score in such a test may nevertheless be assessed as fit if the applicants are able to readily and correctly identify aviation coloured lights displayed by means of a recognised colour perception lantern, i.e. Farnsworth, Beyenne, Holmes-Wright type A or Spectrolux.
- (5) The procedure for the performance of a Farnsworth Lantern test shall be as detailed in this document (Note: The Farnsworth D15 is not an acceptable test).
- (6) Applicants who obtain a satisfactory score in any of the tests in (4) above shall be deemed to be Grade II colour-safe.
- (7) Applicants who are deemed to be Grade II colour-safe shall repeat steps (2) to (4) as necessary on an annual basis, provided the Commissioner reserves the right to extend such period as necessary.
- (8) Applicants who fail to obtain a satisfactory score in any of the tests detailed in (4) above may nevertheless be assessed as fit, provided the following criteria are met:
 - (a) Applicants must submit a satisfactory report from an ophthalmologist declaring the applicant deuteranomalous (Red/ Green colour deficient);

- (b) Applicants with any abnormality of colour perception other than deuteranomaly shall be assessed as unfit, provided:
 - (i) The applicant is declared an anomalous trichomat (Protanomaly, Deuteranomaly and Tritanomaly). Dichromats (Protanopia, Deuteranopia and Tritanopia) and Monochromats (Atypical cone monochromats and typical rod monochromats) shall be declared Grade III colour-unsafe and unfit;
 - (ii) A medical certificate may be issued if medical conclusion indicates that the applicant has a minor colour perception defect which is compatible with the safe exercise of the privileges of the license, provided the certificate is endorsed with the following limitations:
 - (aa) "For private pilot license privileges only";
 - (bb) "Not valid for flight in the vicinity of a controlled aerodrome (unless the aircraft is in radio contact with aerodrome control)";
 - (cc) "Not valid for night flying, IFR flying or flying of EFIS equipped aircraft";
 - (dd) The applicant shall submit a satisfactory report from an ophthalmologist on an annual basis;
 - (c) Guidelines for Ophthalmologists as detailed in this document shall be adhered to by the examining ophthalmologist.
 - (d) Applicants must undergo a practical flight test with an instructor designated by the Commissioner;
 - (e) The procedure for the practical flight test shall be as detailed in this document;
 - (f) A satisfactory report declaring that the applicant can safely identify all the aviation lights necessary for the safe performance of duties must be submitted;
- (9) Applicants who submit satisfactory reports related to (9) above shall be deemed to be Grade II colour-safe.
- (10) Such restriction shall appear on the applicant's medical certificate permanently.
- (11) Applicants who are deemed to be Grade II colour-safe in accordance with paragraph (10) shall submit an ophthalmologist report on an annual basis.

- (12) Any deterioration in any of the visual parameters shall result in an applicant being deemed unfit to fly, and being required to repeat step (9) above in its entirety.
- (13) Applicants who fail to obtain a satisfactory report from an instructor designated by the Commissioner shall be unfit.
- (14) Stereopsis and NPC testing will be required.
- (15) Full visual fields will be required.”.

Insertion of Schedule 24 in Document SA-CATS-MR

3. Document SA-CATS-MR is hereby amended by the insertion of Schedule 24 after Schedule 23:

“Schedule 24: Procedure for Farnsworth lantern testing

The procedure for testing for colour deficiency using the Farnsworth lantern shall be as follows:

Note: Only the Farnsworth lantern will be acceptable

1. The test shall be conducted in a completely dark room;
2. Applicants shall be seated at a distance of 3m from the lantern;
3. Three runs comprising nine pairs of lights shall be conducted;
4. Lights shall be flashed for a maximum period of 3 seconds only, and the applicant shall be expected to give a verbal answer during this time;
5. The first run is to familiarise the applicant with the test;
6. The assessor shall inform the applicant that only three colours will be accepted as correct answers: White, Red or Green;
7. All answers given by the applicant during the first (practice) run shall be duly disregarded;
8. In the next two test runs, only one error will be permitted per run;
9. Applicants who do not commit any errors in the first test run do not have to undergo a second test run;
10. If an applicant commits one error in the first test run, a second test run will be given;
11. Any errors more than one per test run will be declared a fail;
12. Applicants who obtain a satisfactory score in the Farnsworth lantern test shall be deemed to be Grade II colour-safe;
13. Applicants who fail to obtain a satisfactory score in the test shall be deemed to be Grade III colour-unsafe, unless they submit satisfactory reports from an ophthalmologist and a flight instructor designated by the Commissioner.”.

Insertion of Schedule 25 in Document SA-CATS-MR

4. Document SA-CATS-MR is hereby amended by the insertion of Schedule 25 after Schedule 24:

“Schedule 25: Procedure for practical flight testing in colour vision deficiency

Applicants who fail to obtain a satisfactory score in the Farnsworth lantern, Beyenne, Holme-Wright type A or Spectrolux colour perception lanterns, as the case may be, shall undergo a practical flight test with an instructor designated by the Commissioner in accordance with the following requirements:

1. The test may be conducted in a simulator or aircraft;
2. If conducted in a simulator, the simulator shall be of the same Class as the aircraft to be flown by the applicant;
3. All tests shall be conducted in an EFIS-equipped aircraft, or EFIS cockpit simulator;
4. The procedure and environmental requirements detailed below shall be approximated as far as is practicable in a simulator test;
5. The test shall be undertaken by two (2) instructors, one of whom shall be an instructor designated by the Commissioner for the assessment of applicants during a practical flight test for colour perception purposes;
6. An instructor designated by the Commissioner for the assessment of applicants during a practical flight test for colour perception purposes shall have normal colour vision;
7. The instructor designated by the Commissioner shall administer the test to the applicant, while the second instructor shall pilot the aircraft during the test;
8. The test shall be conducted at dusk;
9. The test shall be conducted in a small airfield with minimal lighting;
10. The instructors shall communicate with tower operators prior to undertaking the test;
11. On the ground, the applicant shall be requested to identify ground lights, taxi lights etc;
12. The tower shall be requested to flash lights at the aircraft;
13. Red, Green and White lights shall be flashed by the tower in a random manner, and the applicant shall be requested to identify the lights as they are being flashed by the tower;
14. Lights shall be flashed a minimum of eighteen (18) times, and the applicant shall be requested to provide a correct answer within three (3) seconds of any light being flashed;
15. After take-off, the aircraft shall conduct low-level flying circuits at a maximum height of 3 miles for a minimum period of thirty (30) minutes while the tower continues to flash lights at the aircraft;
16. A minimum of eighteen (18) lights shall be identified by the applicant during this period;
17. The applicant shall also be requested to identify landscape features at this stage;
18. The instructor piloting the aircraft shall then fly to a pre-determined point and do a turn-around;

19. At 13 miles from the final destination, the applicant shall be requested to identify the runway;
20. At 11 miles from the final destination, on a long and high final approach, the applicant shall be requested to identify the PAPI lights;
21. At 7 miles from the final destination, the applicant shall be requested to identify the runway lights;
22. At 5 miles from the final destination, with White PAPI lights, a rapid descent shall be undertaken, and the applicant shall be requested to identify the PAPI lights as they change colour;
23. At all stages during the flight and on the ground, the applicant shall be requested identify various colours and shades on the EFIS screen, and all difficulties shall be noted;
24. The test shall be a minimum of one and a half (1 ½) hour duration;
25. An applicant shall be deemed to have performed satisfactorily in the test if they are able to identify all the parameters they are being tested on.