

## **Description of the proposed General Directions: Colour Vision Deficiency 2019**

This introductory information is not part of the proposed General Directions (GD) proper but intended as support and explanation to better understand the GD.

### **Contents of the proposed GD**

This proposed GD (*Colour Vision Deficiency*) is a revision of the similarly named draft GD that underwent public consultation during 2004, 2006, 2009 and 2013-2015. The purpose of the revision is to incorporate previous consultation feedback and to update the provisions of the proposed General Directions. Changes from the previous versions of this draft GD are:

- the use of the standard (H53.5 ICD-10) term Colour Vision Deficiency (CVD) where appropriate;
- simplification of the screening and workup of applicants with colour vision deficiency;
- inclusion of an option for restricted certification in the absence of further colour vision testing;
- an update of the conditions applied to those Colour Vision Deficient applicants who are issued restricted medical certificates;
- inclusion of additional secondary screening options for all Colour Vision Deficient applicants, including the Colour Assessment and Diagnosis (CAD) test and Farnsworth DIS test;
- inclusion of an operational colour vision assessment (OCVA) comprising a practical flight assessment, and
- ensuring a similar approach to screening and workup of applicants with colour vision deficiency is applied for Class 1 or Class 2 medical certificates. This has allowed the "Decision flow-diagram" for each class to be incorporated into a single flow-diagram at Annex A to the GD.

### **How this GD works as an element of the medical certification system**

Schedule 2, clause 25(1) of the Civil Aviation Act 2023 provides for the Director to issue General Directions in relation to –

(a) conducting examination of applicants and licence holders, and reporting the results of those examinations to the Director; and

(c) specifying the requirements of examinations or other clinical matters, which must be reasonable, including, but not limited to –

(i) the medical content of examinations;

(ii) the interpretation and analysis of results of examinations;

(iii) the significance of results of examinations for the purpose of determining whether or not an applicant is eligible for a medical certificate under Schedule 2, clauses 2 and 5 .

Civil Aviation Rule 67.3 includes the definition of the term aeromedical significance. A medical condition is of aeromedical significance if, having regard to any relevant general direction, it interferes or is likely to interfere with the safe exercise of the privileges or the safe performance of the duties to which the relevant medical certificate relates.

Most of the medical standards in Part 67 refer directly or indirectly to a requirement that an applicant have no medical condition that is of aeromedical significance.

This statutory construct allows for General Directions (GDs) to be used to describe requirements relating to the 'examinations and other clinical matters' necessary for determining whether an applicant is eligible for the issue of a medical certificate. The Part 67 reference in the medical standards to the GDs also allows GDs to be used to define how 'examinations and other clinical matters' can be interpreted for the purpose of determining whether an applicant meets the medical standards published in the Rules.

This particular GD describes the requirements for the medical certification of applicants who are colour vision deficient. It specifies several options and the certification outcomes that apply to each of those options.

By formalising this policy as a GD, the administrative processing of most colour vision deficient applicants will occur in accordance with Schedule 2, clauses 2 and 5 of the Act. This will avoid direct CAA involvement (in most cases) and obviate the need for an Accredited Medical Conclusion (AMC) under the flexibility provisions in the Act.

This GD introduces the City of London Colour Assessment and Diagnosis (CAD) colour vision test and the Farnsworth DIS test as secondary screening options, both of which are used by other regulatory authorities.

This GD also introduces an Operational Colour Vision Assessment (OCVA) for applicants who fail clinical screening and testing procedures, but wish to demonstrate competency in a practical flight assessment. This assessment is aligned to that utilised by the US FAA for the same purposes.

The GD updates the restrictions that are applied to those who fail initial screening and then either fail, or elect to not undertake, secondary screening. Restrictions against instrument flying (Class 1 and 2) are no longer applied to the certificate. For those who pass the daytime component of an OCVA, restrictions against the carriage of passengers (Class 1) may be removed. For applicants who also pass the night component, restrictions against night flying (Class 1 and 2) may be removed.

Such was the significance of material considered in the development of this GD, the CAA established a CVD GD Assessment Panel comprising specialists in aviation medicine, vision science, general aviation, airline operations, regulatory oversight and law. The panel considered written and verbal submissions from various international contributors and experts, empirical evidence, and clinical research relating to colour vision deficiency in pilots. The panel noted that current clinical test methods and restrictions result in significant limitations for some applicants who would be able to operate unrestricted in some other jurisdictions. Therefore, the panel produced a report recommending the adoption of a practical demonstration of competency as well as alternative secondary screening tests that allow these individuals to demonstrate competency. These recommendations have been accepted by the Director.

**Civil Aviation  
(Colour Vision Deficiency)  
General Directions Notice 2019**

Pursuant to Schedule 2, clause 25 of the Civil Aviation Act 2023, the Director, after having consulted the persons, health professionals with aviation medical experience, representative groups within the aviation industry and elsewhere, government departments, and Crown agencies that the Director considers appropriate, gives the following notice.

**Contents**

**I. General Directions**

1. Title
2. Commencement
3. Purpose
4. Definitions
5. Interpretation
6. Status of Examples and Notes
7. Interpreting a Discrepant Result
8. Screening an applicant with a colour vision deficiency that has become apparent since the applicant's last colour vision screening examination (Ishihara)
9. Relevant colour vision screening examination (Ishihara) results to interpret and analyse
10. Relevant non-routine examination results to interpret and analyse
11. Significance of examination results
12. Practical demonstration of ability in an operational colour vision assessment
13. Information to be made available for an Accredited Medical Conclusion

**II. Annex A to Part 2, Schedule 13 - Operational Colour Vision Assessment - Guidance for Candidates.**

Appendix 1 to Annex A – Operational Colour Vision Flow Diagram

Appendix 2 to Annex A – Operational Colour Vision Assessment Form

Appendix 3 to Annex A – Guidance Notes for Instructors completing an Operational Colour Vision Assessment

**III. Consequential Amendments to Advisory Circular AC 61-20 rule paragraph 61.357(b)(4)(iv) Colour Vision**

**IV. Consequential Amendments to Medical Information Sheet MIS 006**

**V. Consequential Amendments to Examination Procedures General Directions**

1. Civil Aviation (Examination Procedures) General Directions Notice
  - (a) Part 1, Purpose and interpretation, Section 5.
  - (b) Part 2, Schedule 1 (various provisions in Section 11).
  - (c) Part 2, Schedule 13 (various provisions in Sections 1, 2, 3, 4, 5, and 6).

## I. General Directions

### 1. Title

These General Directions are the Civil Aviation {Colour Vision Deficiency} General Directions 2019.

### 2. Commencement

These General Directions come into force on 31 May 2019.

### 3. Purpose

The purpose of these General Directions is to specify the requirements for examinations or other clinical matters, for applicants for Class 1 and Class 2 medical certificates who have, or may have, any colour vision deficiency, including, but not limited to,-

- (a) the medical content of examinations:
- (b) the interpretation and analysis of results of examinations:
- (c) the significance of results of examinations for the purpose of determining whether or not an applicant is eligible for a medical certificate under Schedule 2, clauses 2 and 5 of the Act.

### 4. Definitions

In these General Directions, unless the context otherwise requires,-

**Act** means the Civil Aviation Act 2023.

**Applicant** means an applicant for a Class 1 or Class 2 medical certificate issued under Part 2A of the Act.

**Colour Vision Deficiency**, in relation to an applicant, means a colour vision impairment (or deficit of colour vision) that results in the applicant failing the colour vision screening examination {Ishihara}.

**Medical certificate** means:

- a medical certificate issued by the Director under Schedule 2 of the Act to an applicant or licence holder; or
- a medical certificate recognised by the Director under the rules.

**Rules** means the Civil Aviation Rules.

### 5. Interpretation

A term or expression that is defined in the Act, the Civil Aviation Rules, or the Civil Aviation {Examination Procedures} General Directions Notice and used but not defined in these General Directions has the same meaning as in the Act, the Civil Aviation Rules, or the Civil Aviation {Examination Procedures} General Directions Notice.

## **6. Status of Examples and Notes**

{1} An example or note used in this notice is only illustrative of the provision to which it relates. It does not limit the provision.

{2} If an example or a note and the provisions to which it relates are inconsistent, the provision prevails.

## **7. Interpretation of discrepant results**

(1) Colour vision screening must be undertaken as required by the Civil Aviation Timetable for Routine Examinations General Directions Notice 2009.

(2) If there is a significant discrepancy between the results of a recent vision examination and any past colour vision examinations, then the medical examiner should resolve the discrepancy by –

(a) consulting the applicant's CAA medical file to assist in determining which results should be relied upon; or

(b) seeking further colour vision examinations to assist in determining which results should be relied upon.

## **8. Screening an applicant with a colour vision deficiency that has become apparent since the applicant's last colour vision screening examination (Ishihara)**

(1) If, since the applicant's last colour vision screening examination (Ishihara), an applicant's medical condition has changed in any way that suggests the presence of a colour vision deficiency that may be of aeromedical significance, then the medical examiner must consider the results of a colour vision screening examination (Ishihara) undertaken since the change in the applicant's medical condition.

### **Note:**

*It is relatively rare for colour vision status to change. However medical conditions such as diabetic (or other) retinopathy, the use of some medications, or the implantation of intraocular lenses can lead to a change in colour vision status.*

{2} Subclause (1) applies despite anything to the contrary in the-

(a) Civil Aviation {Timing for Routine Examinations} General Directions Notice; or

(b) Civil Aviation (Examination Procedures) General Directions Notice.

## **9. Relevant colour vision screening examination (Ishihara) results to interpret and analyse**

For the purpose of these General Directions, the determination of whether an applicant is colour vision deficient relies on the interpretation and analysis of the results of a colour vision screening examination (Ishihara) undertaken by the applicant. The medical examiner must consider the most recent colour vision screening examination (Ishihara) but should not ignore or discount any previous colour vision screening examinations (Ishihara) undertaken by the applicant.

## **10. Relevant non-routine examination results to interpret and analyse**

If an applicant has colour vision deficiency, the medical examiner must either assess the applicant as described in clause 11(3), or analyse and interpret the results from the most recent test undertaken by the applicant according to the following-

- (a) Holmes-Wright lantern type A or Type B colour vision test;; or
- (b) Farnsworth lantern (FALANT) colour vision test and Anomaloscope (Nagel or Neitz) colour vision test; or
- (c) Colour Assessment and Diagnosis (CAD) colour vision test; or
- (d) Farnsworth D15 test.

Refer to the Civil Aviation (Examination Procedures) GD Notice for test details.

## **11. Significance of examination results**

(1) If the applicant has colour vision deficiency and passes any of the tests in clause 10, the medical examiner may assess the applicant as having a colour vision deficiency that is not of aeromedical significance.

(2) If the applicant is colour vision deficient and:

- (a) fails the Holmes-Wright lantern colour vision test; or
- (b) fails the Farnsworth lantern (FALANT) colour vision test; or
- (c) passes the Farnsworth lantern (FALANT) colour vision test and has any result indicating a colour vision deficiency that is either protanopic or protanomalous in nature; or
- (d) fails the CAD test; or
- (e) fails the Farnsworth DIS test; the medical examiner must assess the applicant as described in paragraph (3).

(3) An applicant who either:

- (a) does not undertake the further colour vision testing as described in clause 10; or
- (b) fails the further colour vision testing as described in paragraph (2); must be assessed as follows –

## **Class 1 and Class 2**

Assess the applicant for Class 1 and Class 2 medical certificates as having a colour vision deficiency that is not of aeromedical significance provided the medical certificate is issued with the following restrictions-

*'Not valid for flight in the vicinity of a controlled aerodrome unless the aircraft is in radio contact with aerodrome control.'*

*'Not valid for air operations carrying passengers.'*

*'Not valid for night flying.'*

### **12. Practical demonstration of ability in an operational colour vision assessment**

(1) Applicants, who fail colour vision screening and the further tests listed in clause 10, may undertake an operational colour vision assessment (OCVA). If the applicant passes the daytime component of the OCVA, the restrictions on their medical certificate may be reduced to –

*'Not valid for flight in the vicinity of a controlled aerodrome unless the aircraft is in radio contact with aerodrome control.'*

*'Not valid for night flying.'*

(2) If the applicant passes the dayand night components of the OCVA, the restrictions on their medical certificate may be reduced to –

*'Not valid for flight in the vicinity of a controlled aerodrome unless the aircraft is in radio contact with aerodrome control.'*

(3) The OCVA involves a practical check of an individual's colour vision in the operational aviation environment on the ground and during flight. The assessment is to be carried out by an 'A' Category flying instructor/examiner (who is not CVD) who has received CAA training in the procedures and conduct of the OCVA and is operating within an organisation holding a Part 141 certificate. The day component of OCVA will be undertaken in daylight, while the night component will be undertaken at night. The practical component of the day and night assessment must be carried out in an actual aircraft; a simulator, regardless of certification standard or approvals, cannot be used for the OCVA. The applicant will be required to demonstrate the ability to:

- a) Read and correctly interpret in a timely manner aeronautical charts, including print in various sizes, colours and fonts as well as symbols, lines and terrain markings.
- b) Read and correctly interpret in a timely manner aircraft instrumentation and displays.
- c) Recognise terrain and obstructions in a timely manner.
- d) At night, visually identify in a timely manner the location and significance of aeronautical lights including those associated with other aircraft and airfields.

(4) As the OCVA requires the applicant to demonstrate satisfactory performance in aviation-related operational activities, it is desirable that the applicant has some aviation experience before undertaking the assessment. It is therefore best undertaken part way through training, probably at or near the point where a pilot would normally undertake the PPL flight test or have some night flying experience prior to completing a night rating. However, it is the applicant's responsibility to decide at what stage they undertake the OCVA. If the applicant undertakes an OCVA before starting, or early within their flight training, it is recommended they seek the advice of an A or B category instructor as to when the assessment should be completed. The OCVA is a stand-alone assessment and cannot be combined with other flight-testing activities such as the issue or renewal of a flight crew licence, the issue or renewal of a flight crew rating, initial or periodic flight crew competency tests or operational checks, or Biennial Flight reviews.

(5) A flow-diagram of the CVD test sequence is attached at Annex A to this GD.

### **13. Information to be made available for AMC**

(1) If the medical examiner assesses the applicant as not meeting the medical standard prescribed in rule 67.103(m)(S) or 67.105(m)(S) and the medical examiner elects to consider the application further under the flexibility provisions of Schedule 2, clauses 2 and 5 of the Act, the medical examiner:

(a) must ensure that the results of all of the colour vision examinations considered by the medical examiner are made available for the purposes of reaching an accredited medical conclusion (AMC); and

(b) should provide the results of the following, or other similar, additional colour vision tests undertaken by the applicant are made available for the purposes of reaching an accredited medical conclusion (AMC) -

(i) Holmes-Wright lantern colour vision test;

(ii) Farnsworth lantern (FALANT) colour vision test and anomaloscope {Nagel or Neitz} colour vision test;

{iii} CAD test;

(iv) Farnsworth D15 test;

(v) Operational colour vision assessment (OCVA).

#### **Note:**

*Detailed information concerning the various colour vision tests and OCVA outlined above can be found in the Civil Aviation (Examination Procedures) General Directions Notice.*



## **II. Annex A to Schedule 13 of the Civil Aviation (Examination Procedures) General Directions Notice - Operational Colour Vision Assessment Guidance for Candidates**

### **Background to colour vision deficiency**

Colour Vision Deficiency (CVD) is a condition that results in individuals being unable to distinguish differences between certain colours. The condition is most commonly inherited, affecting approximately 8% of men and 0.5% of women.

A continuum exists in the severity of CVD. At the most benign end of the continuum, an individual may have near normal colour vision. At the opposite extreme, an individual may be monochromatic but this is extremely rare. Whilst CVD is most usually inherited, it may also be acquired as a result of some medical conditions such as diabetes or eye de-generation.

### **CAA approach to colour vision deficiency**

The CAA approach to assessing CVD pilots is one that constitutes both medical assessment and practical competency assessment in a 3-stage process. A flow chart depicting this process is at Appendix 1.

Pilots with the mildest forms of CVD, as assessed by clinical testing, are eligible for unrestricted medical certification in New Zealand. Those with more severe CVD, may still fly but with restrictions on their medical certificate that prevents them operating to and from controlled aerodromes without a radio, flying at night or carrying passengers on air operations. The last two restrictions may be removed by passing an operational flight assessment. The first cannot be removed because, without a radio, the control tower may use colour light signals to communicate with aircraft in an emergency; misinterpretation due to CVD could therefore constitute a safety risk.

### **Stage 1 - Screening for colour vision deficiency**

The first stage of the colour vision screening test used in New Zealand is the Ishihara Pseudo-Isochromatic Plate test. This is a booklet of coloured plates where applicants are tested by being asked to identify a number or pattern on each page.

In most cases colour vision is only tested once, for initial issue of a medical certificate. It is possible for it to need to be tested again, especially if something changes, but this is very unusual. The pass criteria for the Ishihara assessment differs between the different types of Ishihara tests. Passing the Ishihara test means that the applicant meets the colour vision standard.

### **Stage 2 - Alternative clinical colour vision tests**

Someone who has failed the Ishihara screening test could be issued with a restricted medical certificate without further investigation, but further testing can be carried out to identify the nature and severity of the applicant's colour vision deficit. This may be achieved through a second stage of testing using the Holmes Wright lantern, Farnsworth lantern, CAD test or Farnsworth D15 test. If any one of these second stage tests is passed, the candidate will receive an unrestricted medical certificate. Otherwise, the candidate will receive a medical certificate that includes restrictions preventing them from:

- operating to and from controlled aerodromes without a radio;
- flying at night; or
- working in air operations with passengers.

### **Stage 3 - Operational colour vision assessment**

Noting that the listed clinical tests are conservative in nature and hence are difficult to pass with anything more than mild colour vision deficiency, in stage 3 of the testing the applicant may seek to have the restrictions against night flying and working in air operations with passengers removed by undertaking an operational colour vision assessment (OCVA). This consists of a ground and flight assessment, in which the candidate must demonstrate the ability to read and interpret charts, instrumentation, displays, aeronautical lighting, and terrain and conditions. The assessment is carried out initially by day and may be repeated at night for those candidates wishing to remove the night limitation.

As this is a flight assessment, it is desirable that applicants have some experience in piloting aircraft. It is therefore best undertaken part way through training, probably at or near the point where a pilot would normally undertake the PPL flight test or have some night flying experience prior to completing a night rating. A decision regarding when the assessment should be undertaken is best made in consultation with an A or B Cat flight instructor, with the final decision on timing to be made by the candidate. Prior to the commencement of an assessment the applicant must produce evidence of their identity.

The applicant may choose to undertake the assessment in the day time only or during the day time and night time. The day OCVA must be completed before the night assessment. If the applicant passes the day time component of the OCVA, they will be permitted to undertake air operations with passengers (if otherwise appropriately licenced) and will have restrictions on their medical certificate reduced to –

*'Not valid for flight in the vicinity of a controlled aerodrome unless the aircraft is in radio contact with aerodrome control.'*

*'Not valid for night flying.'*

If the applicant passes both the day and night time component of the OCVA, they will be permitted to undertake air operations with passengers and to fly at night (if otherwise appropriately licenced and rated) and will have restrictions on their medical certificate reduced to –

*'Not valid for flight in the vicinity of a controlled aerodrome unless the aircraft is in radio contact with aerodrome control.'*

### **Conduct of operational colour vision assessment**

The assessment is to be carried out by an 'A' Category flying instructor/examiner (who is not CVD) who has received CAA training in the procedures and conduct of the OCVA, and is operating within an organisation holding a Part 141 certificate. The OCVA is to be conducted during the day time if the applicant seeks only the privilege to carry passengers on air operations by day. The OCVA must be repeated or extended into the night if the applicant seeks a night flying privilege.

The assessment must be conducted independently and cannot be combined with other flight testing/assessment activities such as the issue or renewal of a flight crew licence, the issue or

renewal of a flight crew rating, initial or periodic flight crew competency tests or operational checks, and biennial flight reviews. The airborne element of the assessment by day and night must be flown in an aircraft; the use of a simulator, regardless of its certification or approval, is not permitted. The day and night OCVA must be conducted at an airport certified under Civil Aviation Rule Part 139. The night assessment must be completed at an airport where a fully representative range of permanent runway, taxiway and ground lighting is available.

In the day time, the applicant is required to:

- Read and correctly interpret in a timely manner aeronautical charts, including print in various sizes, colours and fonts, symbols, lines and terrain markings. Aeronautical chart reading may be performed in daylight or artificial light conditions where the chart would normally be read.
- Read and correctly interpret in a timely manner aircraft instrumentation and displays, particularly those with coloured markings, warning lights and coloured displays.
- Recognise terrain and obstructions in a timely manner including the surface condition of several emergency landing fields. The applicant should be able to describe surface features and obstructions.

During the transition to night, and at night, the applicant is required to:

- Read and correctly interpret in a timely manner aeronautical charts, including print in various sizes, colours and fonts, symbols, lines and terrain markings. Aeronautical chart reading may be performed under any light conditions where the chart would normally be read.
- Read and correctly interpret in a timely manner aircraft instrumentation and displays, particularly those with coloured markings, warning lights and coloured displays.
- Visually identify in a timely manner the location and significance of lights on other aircraft or airfields. This includes:
  - o The location and direction of travel of other aircraft in the vicinity.
  - o Runway approach aids relevant to the type of aircraft.
  - o Runway edge.
  - o Runway ends.
  - o In runway lights (centreline, touchdown zone, taxiway lead off lights).
  - o Taxiways.
  - o Holding points.
  - o Obstacles.
  - o Airport beacons.

In all cases, the objective is not to name colours but rather to correctly interpret the meaning of information conveyed by charts, instruments or lights, or to assess terrain conditions or obstructions. The assessment is not a check of aviation knowledge or flying ability; for example, the use of keys, notes and glossaries on maps, charts and plates is permitted.

There is no requirement to interpret signals from a signal light or gun as all applicants will retain a restriction on their medical certificate of:

*'Not valid for flight in the vicinity of a controlled aerodrome unless the aircraft is in radio contact with aerodrome control.'*

## **Results of the OCVA**

The flight assessor is to assess the applicant's ability to reliably undertake all listed tasks for their type of aircraft in either the day time or at night. The candidate must achieve a satisfactory assessment in all elements of the OCVA.

An inability to undertake the listed day time tasks would indicate that the applicant should not be afforded air operations with passenger privileges. An inability to undertake the listed night time tasks would indicate that the applicant should not be afforded night flying privileges.

## **Reporting requirements of the flight assessor**

The results of the OCVA must be reported on the form at Appendix 2. At the conclusion of the assessment, the assessor must sign an entry in the applicant's logbook as follows:

*'Operational colour vision assessment completed on [date]. Satisfactory performance in day operations demonstrated/not demonstrated\* to allow air operations with passengers when appropriately licenced. Satisfactory performance in night flying demonstrated/not demonstrated/not undertaken\* to allow night flying, when appropriately rated. Restrictions not valid until confirmed on a medical certificate by an AME.*

Signed:                      Name:                      Inst Cat:                      CAA Nos:                      ,

*(\* Delete as required)*

Provide a copy of the completed OCVA form to the applicant to forward to their medical examiner for action.

## **Reporting requirements of the medical examiner**

If sections 13-15 of OCVA form indicate a satisfactory performance by the applicant only in day time operations, and subject to the applicant having no other relevant medical conditions, it is appropriate for the AME to amend the applicant's medical certificate restrictions to:

*'Not valid for flight in the vicinity of a controlled aerodrome unless the aircraft is in radio contact with aerodrome control.'*

*'Not valid for night flying.'*

If sections 13-15 of the OCVA form indicate a satisfactory performance by the applicant in both day and night time operations, and subject to the applicant having no other relevant medical conditions, it is appropriate for the AME to amend the applicant's medical certificate restrictions to read:

*'Not valid for flight in the vicinity of a controlled aerodrome unless the aircraft is in radio contact with aerodrome control.'*

In both the cases above, the revised medical certificate should be re-issued to the applicant.

The medical examiner is to forward a copy of the amended medical certificate and the completed OCVA form to the CAA Aviation Medicine Team, CAA, PO Box 3555, Wellington 6140.

### **Period of validity of results**

The results of an OCVA are valid for an indefinite period. Multiple attempts at the OCVA are permitted. A pilot is responsible for reporting any perceived or clinically confirmed changes in their colour vision deficiency to CAA medical staff.

### **Risk of pilots flying with a colour vision deficiency**

Empirical and clinical evidence indicates that applicants with CVD are able to operate safely provided they have successfully completed the applicable level of training and testing to demonstrate their competence and comply with any restrictions imposed.

### **Foreign pilots seeking certification in New Zealand**

New Zealand's colour vision standards may be different to other countries who may issue unrestricted medical certificates to some colour vision defective applicants that New Zealand would not.

Foreign applicants seeking medical certification in New Zealand must have their colour vision assessed according to the New Zealand CAA medical standards and procedures. It is possible this assessment may have a different outcome to one completed under another country's jurisdiction.

## APPENDIX 1 to ANNEX A- FLOW DIAGRAM FOR COLOUR VISION ASSESSMENT

**START (Class 1 or 2)**

### Routine examination:

Colour vision screening examination (Ishihara)

Pass colour vision screening examination (Ishihara)

Yes

Colour vision deficiency is not of aeromedical significance. Meets the medical standard of rule 67.103(m)(S) or rule 67.105(m)(S).

No

### Further non-routine examinations:

Holmes-Wright lantern  
Farnsworth lantern and anomaloscope  
CAD test  
Farnsworth DIS test

Passes Farnsworth lantern; or  
Passes Farnsworth lantern and anomaloscope; or  
Passes CAD test; or  
Passes Farnsworth DIS test

Yes

Colour vision deficiency is not of aeromedical significance. Meets the medical standard of rule 67.103(m)(S) or rule 67.105(m)(S).

No

Class 1 or 2 medical certificate application

Yes

Colour vision deficiency is not of aeromedical significance for class 1 or class 2 providing certificate is endorsed:  
- {Class 1} Not valid for air operations carrying passengers; and  
- {Class 1 and 2} Not valid for night flying; and  
- {Class 1 and 2} Not valid for flight in the vicinity of a controlled aerodrome unless the aircraft is in radio contact with aerodrome control

No

Deficit of colour vision is of aeromedical significance. Does not meet the medical standard of rule 67.103(m)(S) or rule 67.105(m)(S)

Operational colour vision assessment (OCVA) taken?

Pass in both day time and night

Pass in day time only

Colour vision deficiency is not of aeromedical significance for class 1 or class 2 providing certificate is endorsed:

- (Class 1 and 2) Not valid for night flying; and
- (Class 1 and 2) Not valid for flight in the vicinity of a controlled aerodrome unless the aircraft is in radio contact with aerodrome control

flight in the vicinity of a controlled aerodrome unless the aircraft is in radio contact

Colou  
r  
vision  
defici  
ency  
is not  
of  
aerom  
edical  
signifi  
cance  
for  
class  
1 or  
class 2  
providi  
ng  
certific  
ate is  
endors  
ed:

—  
*Class 1  
and 2)*  
*Not  
valid for  
flight in  
the  
vicinity  
of a  
controll  
ed  
aerodro  
me  
unless  
the  
aircraft  
is in  
radio  
contact  
with  
aerodro  
me  
control*  
— —

(

-----



## APPENDIX 2 to ANNEX A - OPERATIONAL COLOUR VISION ASSESSMENT FORM

<b>1. Applicant's Name:</b>		<b>2. CAA Client Nos:</b>	
<b>3. Postal Address:</b>		<b>4. Date of Birth:</b>	
		<b>5. Email:</b>	
<b>6. Licence Held:</b>		<b>7. Experience (hours)</b>	
<b>8. Medical certificate(s) applied for:</b> Class 1                  Class 2		<b>9. Applicant's Signature:</b>	
<b>10. Aircraft type: Registration:</b>		<b>11. Corrective lenses used? Yes/No</b>	
<b>12. Assessment flight details:</b>  a. Airport of departure/other airfieldsused: b. Route: c. Duration - Ground:                                      Air: d. Weather:			
<b>13. Satisfactory/safe performance in day light:</b>  a. On the ground and in the air, read and correctly interpret in a timely manner aeronautical maps, chart and plates, including print in various sizes, colours and fonts, symbols, lines and terrain markings. Aeronautical chart reading may be performed in daylight or under any light conditions where the chart would normally be read.  b. On the ground and in the air, read and correctly interpret in a timely manner aircraft instrumentation and displays, particularly those with coloured markings, warning lights and coloured displays.  c. In the air, recognise terrain and obstructions in a timely manner including the surface condition of several emergency landing fields. The applicant should be able to describe surface features and obstructions.	Yes	No	Comments



		Yes	No	Comment
<b>14. Satisfactory/safe performance at night:</b>  a. On the ground and in the air, read and correctly interpret in a timely manner aeronautical charts, including print in various sizes, colours and fonts, symbols, lines and terrain markings. Aeronautical chart reading may be performed under any light conditions where the chart would normally be read.  b. On the ground and in the air, read and correctly interpret in a timely manner aircraft instrumentation and displays, particularly those with coloured markings, warning lights and coloured displays.  c. Visually identify in a timely manner on the ground and in the air the location and significance of lights on an airfield or other aircraft. This may include: <ul style="list-style-type: none"> <li>- Identifying the location and direction of travel of other aircraft in the vicinity.</li> <li>- Runway approach aids relevant to the type of aircraft.</li> <li>- Runway edge.</li> <li>- Runway ends.</li> <li>- In runway lights (centreline, touchdown zone, taxiway lead off lights).</li> <li>- Taxiways.</li> <li>- Holding points.</li> <li>- Obstacles.</li> <li>- Airport beacons.</li> </ul>				
<b>15. Summary of performance:</b> Satisfactory performance in day time operations to allow removal of medical restrictions relating to the carriage of passengers on air transport operations?  Satisfactory performance in night time operations to allow removal of restrictions concerning night flying?		Yes	No	
<b>16. Additional information/notes:</b>				
<b>17. Instructor Organisation and Address:</b>	<b>18. Instructor Name:</b>			
	Inst Cat:                      CAA Nos:			
<b>19. Instructor declaration:</b> I hereby certify that I have personally identified and assessed the applicant named on this report and that this report, and any attached notes, embodies my examination correctly.				

Telephone:

Signature:

Date:

### **APPENDIX 3 to ANNEX A - Guidance Notes for the Instructor Completing an Operational Colour Vision Assessment**

The operational colour vision assessment (OCVA) is to be carried out by an 'A' Category flying instructor/examiner (who is not CVD) who has received CAA training in the procedures and conduct of the OCVA and is operating within an organisation holding a Part 141 certificate. It is recommended that applicants have some experience in piloting aircraft before taking the assessment, probably at or near the point at which they would normally undertake the PPL flight test (day assessment) or have completed some dual night flying (night assessment). Applicants are advised to seek the guidance of an A or B Cat instructor as to when to take the assessment. Flight examiners carrying out the OCVA should confirm that the applicant has done this; however, it is the applicant's decision on when to take the OCVA. There is no restriction on how many times the applicant may undertake the OCVA. Assessors should ascertain if an applicant has undergone previous assessments and may question the applicant as to what areas of the assessment were previously found to be unsatisfactory, and what remedial training the applicant has completed (if any). The applicant's identity should be confirmed by appropriate photo-ID and the signature of the applicant is to be recorded on the assessment form.

The OCVA must be conducted independently and cannot be combined with other flight testing or assessment activity, such as the issue or renewal of a flight crew licence, the issue or renewal of a flight crew rating, initial or periodic flight crew competency checks, operational checks or biennial flight reviews. The airborne element of the assessment by day and night must be flown in an aircraft; the use of a simulator, regardless of its certification or approval, is not permitted. The day OCVA may be conducted in daylight and under artificial lighting conditions where a chart/map/plate would normally be read. The day OCVA must be completed before the night OCVA. The night OCVA must be completed at night (between ECT and MCT); ground assessment may be done under any light conditions where a chart/map/plate would be read, and under normal cockpit lighting. The OCVA may be flown as a day-into-night exercise provided the night section is completed in full darkness. Both the day and night OCVA must be carried out from an airfield certified under CAR Part 139. The night OCVA must be conducted at an airport where a fully representative range of permanent runway, taxiway and aerodrome lighting is available; assessment of other aircraft operating on the ground and in the air is required as part of the night OCVA.

The assessment must cover all of the areas defined in the OCVA form. The objective of the assessment is not to determine if the applicant can name colours and is not an assessment of flying ability. The instructor carrying out the assessment should confirm that an applicant can correctly and consistently interpret the meaning of information conveyed by maps, charts, plates, instruments or lights, or to assess terrain conditions and obstructions on the ground and in the air. The assessment is not a check of aviation knowledge. For example, the use of keys, notes and glossaries on maps, charts and plates is permitted; the interpretation of warning lights should recognise the nature of the warning, not the actions or drills associated with it. Where lighting is observed, the applicant should be able to recognise it in a way that allows its function to be clearly stated and appropriate action taken. In the air, assessing instructors must analyse whether an applicant's action, say an unstable or unsafe approach, is due to lack of ability or as a result of misinterpreting visual cues (e.g. surface features, PAPIs, or runway lighting). This should be achieved through

questioning what the applicant is seeing and how they are reacting to this information. Manoeuvres can be repeated as necessary to confirm assessments. Correct interpretation should be achieved by the candidate in 'reasonable time'. This is defined as the amount of time appropriate to the given operational assessment scenario to identify correctly, trap and/or action a visual cue such that safety is not compromised. 'Reasonable time' on the ground in a planning scenario will differ from that say of identifying and actioning lights on an aircraft approach.

Once the day or night OCVA is completed, the instructor should fill out the relevant sections of the OCVA assessment form. An applicant must achieve a 'satisfactory' assessment in **all** the categories in sections 13 and 14 to be deemed to have an overall satisfactory performance in section 15. Where the assessment has been unsatisfactory, detail should be included in the report for both the applicant's and the medical examiner's information. The assessor should debrief the applicant on the specific areas of unsatisfactory performance.

At the conclusion of the assessment, the assessor should complete and sign an entry in the applicant's logbook as follows:

*'Operational colour vision assessment completed on [date]. Satisfactory performance in day operations demonstrated/not demonstrated\* to allow air operations with passengers when appropriately licenced. Satisfactory performance in night flying demonstrated/not demonstrated/not undertaken\* to allow night flying, when appropriately rated. Restrictions are not valid until confirmed on a medical certificate by an AME.*

Signed:                      Name:                      Inst Cat:                      CAA Nos:

*(\*Delete as required)*

Provide a completed copy of the form to the applicant to pass to their aviation medical examiner so the doctor can review the applicant's medical certificate. Also, forward a copy of the form to the CAA Aviation Medicine Team, CAA, PO Box 3555, Wellington 6140.

Signed this 14 day of April, 2019 at Wellington



---

Graeme Harris, Director