The Colour Assessment & Diagnosis (CAD) Test: An ‘Ishihara Test’ by another name?

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- I have no financial conflict of interest in this matter
- I am a Director of the Colour Vision Defective Pilots Association Pty Ltd (CVDPA)
The role of CASA in maximising safe operation of aircraft

CASA uses various types of tests to do this
Overview of talk

- CASA uses operational tests
- CASA uses screening and quasi-operational tests
- CASA cascade of tests in relation to defective colour vision
- 67.150 (6) (c) – The CAD Test
- Operational test of defective colour
Role of CASA - Operational tests

- Complex perceptual-motor skills are required to fly an aircraft safely
- Operational testing occurs in an aeroplane or in a simulator
Operational test of ability to deal with engine failure and drift down
Role of CASA—Screening tests

- Aviation medical examinations prescribed in Part 67.150 of the regulations
- Purpose? To identify conditions that may lead to unsafe performance
  - Example 1: Hypertension -> stroke -> death -> unsafe performance of duties
  - Example 2: Colour vision deficiencies
Screening tests for defective colour vision 1: The Aviation Colour Vision Standard

- CASR 67.150, Table 1.39: (the applicant)“can readily distinguish the colours that need to be distinguished for the safe exercise of privileges, or performance of duties, under the relevant licence.”

- CASR 67.150 (6): A person must demonstrate that he or she meets the criterion in item 1.39 of table 67.150 by: (a), (b), or (c)
Screening tests for defective colour vision 2:
67.150 (6) (a)– The Ishihara test

- 2 errors allowed
Screening tests for defective colour vision 3: 67.150 (6) (b)—The Farnsworth Lantern Test
Screening tests for defective colour vision 4: 67.150 (6) (c)– Operational

“for somebody who does not satisfy paragraph (a) or (b), correctly identifying all relevant coloured lights in a test, determined by CASA, that simulates an operational situation”.
What is the CAD Test?
What the CAD Test is/is not!

- A sophisticated and powerful screening and diagnostic test for colour vision
- Not an “operational” or “quasi-operational test
“…..that does not make the CAD an operational test”

“…..not intended in any way to use direct information on operational tasks.”

“…….The CAD system wasn’t designed specifically for aviation. It was designed for assessing colour vision.”

“…..which is based on findings from camouflage studies some 25 years ago, [CAD] is an extremely good colour vision test and that’s as far as we go.”
“The information obtained by CASA from [CAD] testing of Mr O’Brien is little more than that to which we were already aware, having had the diagnosis of protanopia confirmed in previous tests.”
So what might an operational test for pilots with CVD look like?

- It must be consistent with Regulation 67.150 (6) (c)
- It must not simply be another colour vision screening test
- Propose the use of existing simulator facilities
Summary and Conclusions

- Safety in aviation is of paramount importance
- Operational testing determines safe performance
- CASA is required by law to include operational test in assessing defective colour vision
- The CAD Test is not an operational test of colour vision in aviation
- Aircraft simulators could form the basis of an appropriate test in an operational environment
- Why has a simulator-based operational test of colour vision not been implemented by CASA?
References:


- Civil Aviation Safety Regulations 1998. Commonwealth of Australia