



Completion of UK CAA Comprehensive Ophthalmology Examination Report Form (MED 162) and Guidance for Ophthalmology Examinations

The Med 162 form is used for comprehensive ophthalmology examinations required for initial Class 1, 2 (on clinical indication) and 3 medical certification (Class 1 and 3 examinations are conducted at an Aeromedical Centre), and otherwise on clinical indication or if required due to high refraction (Class 1 and 3). The information below is also designed to assist the aeromedical examiner (AME) in conducting routine Class 1 and 3 renewal and Class 2 initial and renewal examinations.

303) Ophthalmological history

Include whether spectacles / contact lenses are currently or were previously worn, any current ocular symptoms. Include details of any previous ocular history (surgery, laser eye treatment, ocular injury or infection) or family ocular history. Include details of current spectacle prescription and corrected visual acuities with that correction, if applicable.

304 / 305) External Eye examination

Examination by slit lamp is required for Class 1 and 3 initial examination and when clinically indicated. For Class 1 and 3 renewal or Class 2 initial and renewal examinations, external eye examination can be carried out with a handheld ophthalmoscope with a plus lens appropriate for working distance or a magnifying loupe and appropriate light source. Any abnormality of eyelids, eyelashes, sclera, conjunctiva, cornea, media or anterior chambers should be documented in box 321.

306) Eye position and movements

Ocular motility should be carried out using an appropriate target such as an N5 equivalent letter or pen torch light so that corneal reflex position can be assessed. Target should be moved to elicit function of the six extraocular muscles. Any deviation and / or diplopia should be documented. Any restriction of ocular movements or any abnormal head position should be recorded in box 321.

307) Visual fields (confrontation)

Automated visual field examination using Esterman monocular programmes on a Humphrey or Octopus visual field analyser is required for Class 1 and 3 initial examination and when clinically indicated. For Class 1 and 3 renewal or Class 2 initial and renewal examinations, visual fields can be assessed by confrontation. Confrontation should be conducted at around 1 metre testing distance tested at a plane equal distance between the examiner and applicant. Appropriate targets include finger counting, finger identification or round/spherical target identification. To increase sensitivity, an assessment of central fields on confrontation should be considered. Any abnormal findings on confrontation should be recorded and would indicate further automated visual field examination.

308) Pupillary reflexes

Direct, consensual and near reflexes should be checked. Any anisocoria (difference in pupil size) or relative afferent pupil defects recorded in box 321.

309) Fundi (ophthalmoscopy)

Fundi should be examined with reference to optic disc appearance, blood vessel appearance, maculae and general retinal appearance including periphery. Any abnormal findings should be recorded in box 321.

310) Convergence

Convergence is normally assessed using the RAF rule and is the nearest point at which convergence is maintained and is recorded in cm from the eyes. It should be conducted with any reading glasses and can be assessed subjectively by applicant reporting the point of diplopia or objectively by observing eye movements.

312) Ocular muscle balance

Assessment of eye muscle balance should be undertaken. For Class 2 examination, this would normally be carried out using cover test with an estimation of the movement seen to the degree of imbalance present. Any manifest deviation (tropia) should be documented together with whether constant or intermittent, alternating or monocular, concomitant or incomitant, whether diplopia present and whether suppression or binocularity present.

With higher phorias, an assessment of compensation by phoria recovery should be undertaken and fusional reserve testing conducted.

313) Colour perception

Colour vision examination is conducted at all initial examinations and only if clinically indicated at renewal. Screening is conducted using the 24 plate Ishihara book. The first 15 plates are shown therefore the type of Pseudo-isochromatic plates will always be recorded as 'Ishihara' and No. of plates recorded as '15'. To prevent learning of book, the plates should be randomised (each plate can be removed and re-inserted so can be shuffled prior to use). The test should otherwise be conducted as per manufacturer's instructions tested at 75cm with plates presented at right angles to line of sight under daylight or daylight equivalent lighting allowing up to 3 seconds per plate for response. Any errors should be recorded and will result in further colour vision testing being required.

If further colour testing is required, this would be conducted using the Colour Assessment & Diagnosis (CAD) test which will determine the degree of colour vision deficiency present. Up to certain levels of colour vision deficiency are accepted for unrestricted certification and the CAD result should be recorded together with an assessment of whether applicant is colour vision safe documented in the appropriate boxes.

Note that some Class 2 initial applicants who make errors on Ishihara may elect not to undertake further colour vision testing and may be issued a medical certificate with a VCL limitation (flights by day only) which can be removed by the CAA if they subsequently pass a CAD test at a later date.

314) Distant vision / visual acuity measurement

Testing distance should be conducted using a Snellen letter chart at 6 metres. Where consulting room constraints do not allow a full 6 metre viewing distance, testing should be conducted with the use of a mirror approximately midway between applicant and letter chart and should be arranged so that total distance (patient to mirror and mirror to test chart) is 6 metres (a reduced size 3 metre test chart is not considered acceptable). If using a mirror, a reversed Snellen letter chart must be used. The mirror should be of appropriate ophthalmic testing quality and clean so as not to interfere with acuity measurements. Where a mirror is used, the chart should be arranged so that

viewing angle to the mirror is as close to normal (90°) as possible. Test chart should be at near eye level with the applicant.

Computer generated letter charts are acceptable and have the advantage of optotype (letter) randomisation and the ability to be calibrated for a specific testing distance. For the purposes of aviation medical examination, if using this type of test chart, a testing distance of between 5 to 6 metres is acceptable provided system appropriately calibrated.

A standard Snellen card is subject to greater variability in results dependent on ambient room lighting conditions (normal recommended office levels are around 500 lux). Results from backlit Snellen charts and computer-based test charts are far more independent of ambient room lighting. LCD or tablet screens are also more uniform and not affected by ageing bulbs behind a backlit chart. If using a tablet-based chart, it is recommended that the luminance of the display be set to at least 50% and there should be no glare or reflection on the screen. The AME should ensure that any app / programme used and display settings are equivalent to the standard Snellen chart.

Visions / visual acuities should be recorded in standard 6/ format and recorded as the last complete line read correctly without error.

315 / 316) Intermediate and near vision / visual acuity measurement

Near (30-50cm) and intermediate (100cm) vision are recorded on a standard near point chart and recorded in N point format. Charts should be clean and of high contrast. Standards require that this be read comfortably at the appropriate distance binocularly (therefore standards would still be considered met if only one eye met the requirement). For near vision testing, N5 should be read somewhere within the comfortable reading distance range of between 30 and 50 cm.

317) Refraction

Those applicants who require or use spectacle correction should provide a copy of an up-to-date prescription from their local optometrist. The AME may request the CAA ophthalmology form be completed in its entirety by an optometrist. This is acceptable and an optometrist or ophthalmologist can sign the bottom of the ophthalmology form. It should be documented in the appropriate box whether the actual refraction was assessed (required for initial Class 1 and 3 medical examination) or whether refraction findings were taken from the spectacle prescription.

318) Spectacles

The appropriate box should be ticked to indicate if the visual requirements are met with or without spectacles. If spectacles are required, the type needs to be recorded. If standards are not met for distance without glasses and all distances can be achieved with a single prescription, then type should be recorded 'S/V distance' and a VDL placed on the medical certificate. Where the distance requirements are met without correction, but a prescription is required for near (+/- intermediate) vision (after the onset of presbyopia), the type is recorded as 'S/V near' and a VNL placed on the medical certificate. Where an applicant requiring distance correction reaches presbyopia, then either 'bifocal' or 'varifocal' spectacle correction would be recorded and a VML limitation placed on the medical certificate.

Spectacle wearers must have an untinted prescription plus at least one pair of back-up spectacles available, which can be tinted or untinted but must be suitable for the overall light conditions of the entire flight or duty shift.

319) Contact lenses

If contact lenses are habitually worn comfortably and the pilot / air traffic controller wishes to use them operationally, corrected visual acuities should be measured with lenses in and appropriate box ticked that contact lenses are worn. The type of contact lenses used should be documented. The vast majority of contact lens wearers will be using soft disposable contact lenses (usually either daily or monthly disposable). However, a minority of applicants may be using rigid gas permeable (RGP) or scleral contact lenses and should be documented accordingly. If standards are met with contact lenses, applicants with a VDL limitation do not require a change to this limitation if using contact lenses. Presbyopic pilots with a VML limitation will also require a VNL limitation to use look-over near spectacles when required if wearing contact lenses. Those pilots who can only meet the vision requirements with contact lenses and not spectacles (for example those with corneal injury or disease such as keratoconus) would require a CCL limitation to wear contact lenses.

Note that contact lens correction of monovision (one eye corrected for distance vision and one eye corrected for reading) is not acceptable for certification unless the 'reading eye' can achieve the required distance vision requirement. Additionally, multifocal or tinted (cosmetic coloured) contact lenses are not acceptable for certification. OrthoK lenses (reverse geometry lenses used to flatten cornea and reduce myopia and usually worn overnight) are not acceptable. Any applicant using these lenses must discontinue use and be reassessed once refraction stabilised (usually at least 1 week after discontinuing).

320) Intraocular pressure

This is required for Class 1 and 3 initial examinations for applicants over 40 or when otherwise clinically indicated. It would also be measured where extended ongoing eye examinations are required and again when clinically indicated. The values for each eye should be recorded together with the method used (for example applanation or non-contact). IOPs above 22mmHg would be considered abnormal and should (if a new finding) in first instance be repeated on another day at a different time of day.

321) Ophthalmic remarks and recommendations

This free text box should be used to document any abnormal findings, additional tests carried out and recommendations for certification including spectacle limitations where appropriate.

322) Examiner's declaration

The examiner (AME, optometrist or ophthalmologist) should complete details of the date and place of examination, examiner's contact details and provide a signature.