SOUTH AFRICAN CIVIL AVIATION AUTHORITY

CIVIL AVIATION ACT, 2009 (ACT NO. 13 OF 2009)

AMENDMENT SACATS 1/2017

The Director of Civil Aviation has, in terms of section 163(1) of the Civil Aviation Act, 2009 (Act No. 13 of 2009) read with Part 11 of the Civil Aviation Regulations, 2011, amended the South African Civil Aviation Technical Standards as reflected in the Schedule hereto. The Amendment as contained in the Schedule shall come into operation on 1 June 2017.

Poppy Khoza
Director of Civil Aviation
Date:

GENERAL EXPLANATORY NOTE:

[ ] Words in bold type in square brackets indicate omissions from existing technical standards.

_____ Words underlined with a solid line indicate insertions in existing technical standards.

SCHEDULE

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Amendment of Technical Standard 21.02.3

1. Technical standard 21.02.3 is hereby amended in section 1 by the substitution for sub-section 1.7 of the following sub-section:

"**21.02.3 AIRWORTHINESS DESIGN STANDARDS**

1. Type certification

1.7 Manned free balloons

Federal Aviation Administration (FAA) airworthiness requirements as stated in FAR Part **[23]** 31".

Amendment of Technical Standard 43.02.3

2. Technical standard 43.02.3 is hereby amended by the substitution for sections 1 and 2 of the following sections:

"**43.02.3 CARRYING OUT OF MAINTENANCE**

1. Maintenance control manual

(1) The MCM prescribed by CAR 43.02.3(1) may be issued in separate parts and shall contain the following information:

(a) a description of the procedures required to ensure that –

(i) each aircraft, covered by the MCM, is maintained in an airworthy condition;
(ii) the operational and emergency equipment necessary for an intended flight is serviceable; and
(iii) the certificate of airworthiness and the certificate of release to service remains valid for each aircraft covered by the MCM;

(b) the administrative arrangements between the operator and the AMO;

(c) the maintenance procedures and the procedures for completion and signing of maintenance that is based on a system other than that of an AMO;

(d) names and duties of the person or persons who are required by the MCM to ensure that all maintenance is carried out in accordance with the MCM;

(e) a reference to the approved maintenance programme for each aircraft type, containing the information as prescribed in subsection (2);

(f) a description of the methods used for the completion and retention of the maintenance records;

(g) a description of the procedure for monitoring, assessing and reporting maintenance and operational experience to the Director;

(h) a description of the procedures for complying with the service information reporting requirements to the organisation responsible for the type design of the aircraft and to the Director;

(i) a description of the procedures for implementing action resulting from mandatory continuing airworthiness information and procedures for assessing continuing airworthiness information, issued by the organisation responsible for the type design of the aircraft covered by the MCM;

(j) a description of establishing and maintaining a system of analysis and continued monitoring of the performance and efficiency of the maintenance programme in order to correct any deficiency in that programme;

(k) a description of procedures for ensuring that unserviceable items affecting airworthiness are recorded in the flight folio and rectified or deferred in the flight folio in accordance with the MEL;

(l) a description of procedures for controlling deferred defects, clearing them on return to base, or extending them for a time period acceptable to the Director;

(m) a description of extending deferred defects over and above the time period acceptable to the Director, and the number of times an extension may be applied for, taking into account the category of severity in each case;

(n) a description of procedures for controlling recurring defects, the reporting system to be established, and system to effect corrective action;

(o) a description of procedures for controlling the removal and use of parts from other aircraft, the control and certification of such action and the controlling of TBO records when this occurs;

(p) a description of the procedure for advising the Director of significant in-service occurrences;

(q) a description of aircraft types and models to which the manual applies;

(r) a description of and procedures for completing and signing a maintenance release for aircraft and parts thereof that have undergone maintenance;

(s) a description of the procedures to ensure the aircraft is maintained in accordance with the maintenance programme;

(t) a description of the training programme for the maintenance personnel employed by the air service operator applicable to their assigned duties and responsibilities;

(u) a description of the air service operator's SMS;

(v) a description of the procedure to ensure that modifications and repairs comply with the airworthiness requirements prescribed under this Part; and

(w) a description of the procedure used for the MCM revision and control.

Note.— Where an operator's SMS is already addressed in some other document, an appropriate reference to such document together with its relevant interfaces with the MCM can be described instead.

2. Maintenance programme

(1) The maintenance programme for each aircraft referred to in **[paragraph 1(d)]** subsection 1(d) **[above]** shall contain the following information:

(a) maintenance tasks and the intervals at which these are to be performed, taking into account the anticipated utilisation of the aircraft;
(b) when applicable, a continuing structural integrity programme;
(c) procedures for changing, or deviating from, (a) and (b) above; and
(d) when applicable, condition monitoring and reliability programme descriptions for aircraft systems and powerplants.

(2) The design and application of the maintenance programme shall take into account human factors principles. The basic aspects requiring human factors manual optimization include –

(a) written language, which involves not only correct vocabulary and grammar, but also the manner in which they are used;
(b) typography, including the form of letters and printing and the layout, which has a significant impact on the comprehension of the written material;

(c) the use of photographs, diagrams, charts or tables replacing long descriptive text to help comprehension and maintain interest. The use of colour in illustrations reduces the discrimination workload and has a motivational effect;

(d) consideration of the working environment in which the document is going to be used, when print and page size are determined; and

(e) the principles of human factor as applicable to the aviation safety discipline shall be included into the human factors manual and shall describe, among others, the following key elements:

(i) human capability and limitation;
(ii) machine capability and limitations;
(iii) human - machine interface; and
(iv) physical and organisational environmental condition.".

Amendment of Technical Standard 47.01.3

3. Technical standard 47.01.3 is hereby amended by –

(a) the substitution for sections 2 and 4 of the following sections:

"47.01.3 REQUIREMENTS FOR AIRCRAFT MARKING

2. Allocation of marks

(1) The nationality marks shall be selected from the series of nationality symbols included in the radio call signs allocated to the Republic by the International Telecommunication Union.

(2) The Director shall allocate marks from the South African nationality marks, which are letters ZS, ZT and ZU and the registration mark from a group consisting of three letters appearing after and separated from the nationality marks by a hyphen.

(3) No combination shall be used which might be confused with:

(a) the five-letter combinations used in the International Code of Signals – Part II;
(b) the three-letter combinations beginning with Q used in the Q Code;

(c) the distress signal SOS, or other similar urgent signals, e.g. XXX, PAN and TTT; and

(d) the three- letter combination which might be interpreted as or may have a vulgar connotation.

(4) No nationality marks containing the letter Q (Quebec) may be allocated.

(5) The Director shall notify ICAO of any changes to the existing allocated nationality marks prescribed in this technical standard.

(6) The registration mark format shall be as follows:

(a) type certified aircraft;

Fixed wings		Fixed wings		Rotorcraft		Hot-air balloons	Gliders
ZS-A	ZS-B	ZT-A	ZT-B	ZS-H	ZS-R	ZS-H	ZS-G
ZS-C	ZS-D	ZT-C	ZT-D	ZT-H	ZT-R	ZT-H	ZT-G
ZS-E	ZS-F	ZT-E	ZT-F				
ZS-I	ZS-J	ZT-I	ZT-J				
ZS-K	ZS-L	ZT-K	ZT-L				
ZS-M	ZS-N	ZT-M	ZT-N				
ZS-O	ZS-P	ZT-O	ZT-P				
ZS-S	ZS-T	ZT-S					
ZS-X	ZS-W						
ZS-Y	ZS-Y						
ZS-Z							

(b) non-type certified aircraft

Fixed wing		Rotorcraft	Hot-air Balloons	Gliders
ZU-A	ZU-B	ZU-H	ZU-H	ZU-G
ZU-C	ZU-D	ZU-R		
ZU-E	ZU-F			
ZU-I	ZU-J			
ZU-K	ZU-L			
ZU-M	ZU-N			
ZU-O	ZU-P			
ZU-S	ZU-U			
ZU-V	ZU-W			
ZU-X	ZU-Y			
ZU-Z				

(c) airport vehicles fitted with a transponder = ZT-V;

(d) RPAS = ZT-T, U, W, X, Y and Z;

(e) locally manufactured aircraft which are undergoing test flights = ZS-TE and ZU-TE.

4. Display of marks

(1) The nationality and registration marks must be –

(a) painted on the aircraft or affixed by any other approved means ensuring a similar degree of permanence;

(b) legible;

(c) displayed to the best possible advantage having regard to the construction or features of the aircraft; and

(d) kept clean and visible at all times.

(2) The letters and hyphen must be formed by solid lines and must be of a colour which contrasts clearly with the background on which they are painted. The thickness of the lines shall be one-sixth of the height of the characters.";

(b) the insertion after section 2 of the following section:

"2A Transitional provision

(1) An aircraft classified as non-type certificated aircraft and registered with ZS registration markings on or before November 2016, may retain registration marks allocated except when the owner applies to change to the ZU registration letters.";

(c) the addition in section 6 of the following subsection (10):

"6. Location of marks: Heavier-than-air aircraft

(10) The marks on the ornithopter shall –

(a) be affixed by an appropriate means so as to ensure that such marks will not detached from the ornithopter in the event of an accident or destruction of the ornithopter;

(b) be displayed to the best possible advantage having regard to the construction or features of the ornithopter; and

(c) appear on both sides of a vertical surface.".

Amendment of Technical Standard 67.00.2

4. Technical standard 67.00.2 is hereby amended by –

(a) the substitution in section 2 for subsection 1.2 of the following subsection:

"1.2 Visual standards

1.2.1 General

(1) An applicant may not have –

(a) any condition or congenital abnormality of either eye or its attachments likely to impede the safe exercise of the privileges of the licence;

(b) any abnormality of visual fields or significant defect of binocular function;

(c) any manifest squint, or large errors of eye muscle balance (phoria); **[The acceptable limits for ocular muscle balance are 12 prism dioptres for exophoria, 6 dioptres for esophoria; and 1.5 dioptre for hyperphoria measured at distance. If corrective lenses are required, phoria must be measured while using the appropriate corrective lenses;]**

(d) any anatomical or functional monocularity or substandard vision in one eye at initial issue of a Class 1 medical certificate. However, medical conclusion may permit experienced licence holders who develop monocularity or substandard vision to be granted a medical certificate with appropriate restrictions **[following a period sufficient to permit adjustment to this condition]** after an adaptation period of at least 6 months following the loss of vision.

(2) Monocularity means that either an eye is absent, or its vision cannot be corrected to better than 6/24. An applicant with such condition requires evaluation by an opthalmologist to determine the cause of the visual loss. Fitness to fly will be determined on a case by case basis. The assessment will include practical flight testing by Authority.

(3) For monocularity, the appropriate minimum restrictions initially are as follows –

(a) "If flying open cockpit aircraft, protective goggles not restricting visual field must be worn". (This must remain as a permanent restriction);

(b) "Any accompanying pilot must be made aware of the holder's monocular vision". (This must remain as a permanent restriction);

(c) "Not valid for flight as pilot-in-command by day or night until a satisfactory flight test has been completed with a flight examiner in each case". (This restriction may be removed at subsequent assessment, according to the results of the flight test, or amended to the endorsement in (d) below);

(d) "Not valid for flight as pilot-in-command by night until a satisfactory flight test has been completed with a flight examiner". (This restriction may be removed at subsequent assessment, according to the result of the flight test).

(4) Substandard vision in one eye means one eye meets the required standards for a particular class of licence but the visual acuity of the other eye cannot be corrected to the required standards i.e. central vision better than 6/24 but worse than 6/9, with normal visual fields. An applicant with such condition requires evaluation by an opthalmologist to determine the cause of the visual loss. Fitness to fly will be determined on a case by case basis. A practical flight test by Authority, to evaluate visual performance may be required.

(5) For substandard vision in one eye (vision between 6/12 and 6/24), the appropriate minimum restrictions are as follows –

(a) "Any accompanying pilot must be made aware of the holder's substandard vision in one eye". (This must remain as a permanent restriction);

(b) "Not valid for flight as pilot-in-command by night until a satisfactory flight test has been completed with a flight examiner". (This restriction may be removed at subsequent assessment, according to the results of the flight test).

(6) The relevant protocols are contained in Schedules 21 and 22.

1.2.2 Near vision and intermediate vision

(1) Near vision: An applicant must be able to read N5 at a distance of 30-50 cm or have equivalent visual acuity of 6/9, 20/30. **[6/9, N5 at a distance of 33 centimetres. and N14 at a distance of 100 centimetres or have equivalent visual acuity for these distances (6/12, 20/40 at 33 cm; 6/24, 20/80 at 100 cm).]**

(2) Intermediate vision: An applicant must be able to read N14 at a distance of 100 centimetres or have equivalent visual acuity of 6/18, 20/100 at 100 cms.

(3) An applicant who meets this standard only by use of spectacles may be granted a medical certificate provided this is endorsed with the following limitation:

"Suitable corrective lenses must be readily available".

(4) This means that these must be available for immediate use when exercising the privileges of licence. This limitation may be satisfied by the availability of appropriate bifocal, **[or]** trifocal or multifocal spectacles which permit the reading of instruments and a chart or manual held in one hand, without impeding the use of distance vision through the windscreen when wearing the spectacles. Single-vision near correction (full lenses of one power only, appropriate to reading) is not acceptable, since wearing these significantly reduces distance visual acuity.

(5) Near vision and intermediate vision shall be recorded by ticking in the appropriate box if the applicant is able to see N5 at 30 – 50 cms and N14 at a distance of 100 cms respectively.

(6) Near vision and intermediate vision shall be tested using a pocket vision screener.

1.2.3 Distance vision

[(1) Applicants must have a distance visual acuity of not worse than 6/6 or its equivalent (20/30, 1.0) in each eye separately, with or without corrective lenses. When this standard can be met only by the use of corrective lenses, an applicant may be granted a medical certificate provided this is endorsed with the following limitation:

"Suitable corrective lenses must be worn for distance vision".

(2) An applicant with uncorrected distance visual acuity of 6/24 or its equivalent (20/80, 0.25) or worse in either eye is also subject to the following limitation endorsed on the medical certificate:

"Suitable spare corrective spectacles must be readily available".

(3) The visual acuity, with and without correction, must be recorded at each examination.]

(1) Distant vision is to be examined with a 6m Snellen Chart. A different chart is to be used for each eye. Visual acuity with and without correction must be recorded at each examination.

(2) Distant visual acuity with or without correction shall be 6/9 or better in each eye separately, and binocular visual acuity shall be 6/6 or better. No limits apply to uncorrected visual acuity. Where this standard of visual acuity can be obtained only with correcting lenses, the applicant may be assessed as fit provided that –

(a) the medical certificate is endorsed with the following limitation: "Suitable corrective lenses must be worn for distance vision";

(b) such correcting lenses are worn during the exercise of the privileges of the licence or rating applied for or held; and

(c) a pair of suitable correcting spectacles is kept readily available during the exercise of the privileges of the applicant's licence;

(3) In the event it is suspected than an applicant no longer meets the requirements prescribed in this technical standard, the Authority may require an ophthalmic report. Both uncorrected and corrected visual acuity are normally measured and recorded at each re-examination. Conditions which indicate a need to obtain an ophthalmic report include, but not limited to, substantial decrease in the uncorrected visual acuity; decrease in best corrected visual acuity, and the occurrence of eye disease, eye injury or eye surgery.

(4) An applicant may use contact lenses to meet this requirement provided that –

(a) the lenses are monofocal and non-tinted;
(b) the lenses are well tolerated; and
(c) a pair of suitable correcting spectacles is kept readily available during the exercise of the licence privileges.

(5) An applicant who uses contact lenses may not need to have their uncorrected visual acuity measured at each re-examination provided the history of their contact lens prescription is known.

(6) An applicant with a large refractive error shall use contact lenses or high-index spectacle lenses.

(7) An applicant whose uncorrected distant visual acuity in either eye is worse than 6/60 shall be required to provide a full ophthalmic report prior to initial medical assessment and every five years thereafter. The purpose of the required ophthalmic examination is to ascertain normal visual performance, and to identify any significant pathology.

(8) An applicant who has undergone surgery affecting the refractive status of the eye shall be assessed as medically unfit unless they are free from those sequelae which are likely to interfere with the safe exercise of their licence and rating privileges.

(9) An applicant shall have the ability to read, while wearing the correcting lenses, if any, required by subsection (2), the N5 chart or its equivalent at a distance of 30 to 50 cm and the ability to read the N14 chart or its equivalent at a distance of 100 cm. If this requirement is met only by the use of near correction, the applicant may be assessed as fit provided that this near correction is added to the spectacle correction already prescribed in accordance with subsection (2). If no such correction is prescribed, a pair of spectacles for near use shall be kept readily available during the exercise of the privileges of the licence. When near correction is required, the applicant shall demonstrate that one pair of spectacles is sufficient to meet both distant and near visual requirements.

(10) An applicant who needs near correction to meet this requirement will require "look-over", bifocal or perhaps multifocal lenses in order to read the instruments and a chart or manual held in the hand, and also to make use of distant vision, through the windscreen, without removing the lenses. Single-vision near correction (full lenses of one power only, appropriate for reading) significantly reduces distant visual acuity and is therefore not acceptable. Whenever there is a requirement to obtain or renew correcting lenses, an applicant is expected to advise the refractionist of reading distances for the visual flight deck tasks relevant to the types of aircraft in which the applicant is likely to function.

(11) When near correction is required in accordance with the above paragraph, a second pair of near-correction spectacles shall be kept available for immediate use.

(12) The applicant shall be required to have normal fields of vision.

(13) The applicant shall be required to have normal binocular function.

(14) Reduced stereopsis, abnormal convergence not interfering with near vision, and ocular misalignment where the fusional reserves are sufficient to prevent asthenopia and diplopia need not be disqualifying.

[1.2.4 Combined distance and near vision correction

Applicants requiring distance vision correction must have a near point of accommodation not greater than 33 centimetres, as measured while wearing the required distance vision corrective lenses. Suitable correction for near vision may be necessary in addition to distance vision correction.]

1.2.5 Dioptre limits

A need for corrective lenses for either eye within the range of plus or minus **[3]** 5 dioptres (spherical equivalent) may be accepted, provided that the distance visual acuity without correction is not worse than 6/60 in each eye separately. Spectacle lenses outside this range are not routinely acceptable, but medical conclusion may permit an applicant to be assessed as fit on production of satisfactory specialist reports. The medical certificate will, where appropriate, be endorsed with the following –

(a) "Contact lenses must be worn"; and

(b) "Spare spectacles must be readily available";

(b) the substitution in section 3 for subsection 2.2 of the following subsection:

"2.2 Visual standards

(1) An applicant may not have –

(a) any condition or congenital abnormality of either eye or its attachments likely to impede the safe exercise of the privileges of the licence;

(b) any abnormality of visual fields or binocular function;

(c) any manifest squint, or large errors of eye muscle balance (phoria); **[The acceptable limits for ocular muscle balance are 12 prism dioptres for exophoria, 6 dioptres for esophoria; and 1.5 dioptre for hyperphoria measured at distance. If corrective lenses are required, phoria must be measured while using the appropriate corrective lenses;]**

(d) any anatomical or functional monocularity or substandard vision in one eye at initial issue of a Class 2 medical certificate. However, medical conclusion may permit experienced licence holders who develop monocularity or substandard vision to be granted a medical certificate with appropriate restrictions **[following a period sufficient to permit adjustment to this condition]** after an adaptation period of at least 6 months following the loss of vision.

(2) Monocularity means that either an eye is absent, or its vision cannot be corrected to better than 6/24. An applicant with such condition requires evaluation by an opthalmologist to determine the cause of the visual loss. Fitness to fly will be determined on a case by case basis. The assessment will include practical flight testing by Authority.

(3) For monocularity, the appropriate minimum restrictions initially are as follows –

(a) "If flying open cockpit aircraft, protective goggles not restricting visual field must be worn". (This must remain as a permanent restriction);

(b) "Any accompanying pilot must be made aware of the holder's monocular vision". (This must remain as a permanent restriction);

(c) "Not valid for flight as pilot-in-command by day or night until a satisfactory flight test has been completed with a flight examiner in each case". (This restriction may be removed at subsequent assessment, according to the results of the flight test, or amended to the endorsement in (d) below);

(d) "Not valid for flight as pilot-in-command by night until a satisfactory flight test has been completed with a flight examiner". (This restriction may be removed at subsequent assessment, according to the result of the flight test).

(4) Substandard vision in one eye means one eye meets the required standards for a particular class of licence but the visual acuity of the other eye cannot be corrected to the required standards i.e. central vision better than 6/24 but worse than 6/18, with normal visual fields. An applicant with such condition requires evaluation by an opthalmologist to determine the cause of the visual loss. Fitness to fly will be determined on a case by case basis. In doubtful cases, a practical flight test by Authority, to evaluate visual performance may be required.

(5) For substandard vision in one eye (vision between 6/18 and 6/24), the appropriate minimum restrictions are as follows –

(a) "Any accompanying pilot must be made aware of the holder's substandard vision in one eye". (This must remain as a permanent restriction);

(b) "Not valid for flight as pilot-in-command by night until a satisfactory flight test has been completed with a flight examiner". (This restriction may be removed at subsequent assessment, according to the results of the flight test).

(6) The relevant protocols are contained in Schedules 21 and 22.

3.2.2 Near vision and Intermediate vision

(1) Near vision: An applicant must be able to read N5 at a distance of 30-50 cms or have equivalent visual acuity of 6/9, 20/30. **[6/9 N5 at a distance of 33 centimetres and N14 at a distance of 100 centimetres or have equivalent visual acuity for these distances (6/12, 20/40 at 33 cm; 6/24, 20/80 at 100 cm).]**

(2) Intermediate vision: An applicant must be able to read N14 at a distance of 100 centimetres or have equivalent visual acuity of 6/18, 20/100 at 100 cms.

(3) An applicant who meets this standard only by use of spectacles may be granted a medical certificate provided this is endorsed with the following limitation: "Suitable corrective lenses must be readily available".

(4) This means that these must be available for immediate use when exercising the privileges of licence. This limitation may be satisfied by the availability of appropriate bifocal, **[or]** trifocal or multifocal which permit the reading of instruments and a chart or manual held in one hand, without impeding the use of distance vision through the windscreen when wearing the spectacles. Single-vision near correction (full lenses of one power only, appropriate to reading) is not acceptable, since wearing these significantly reduces distance visual acuity.

(5) Near vision and intermediate vision should be recorded by ticking in the appropriate box if the pilot is able to see N5 at 30 – 50 cms and N14 at a distance of 100 cms respectively.

(6) Near vision and intermediate vision should be tested using a pocket vision screener.

2.2.3 Distance vision

(1) [Applicants must have distance visual acuity of not worse than 6/6 or its equivalent (20/30, 1.0) in each eye separately with or without corrective lenses. When this standard can be obtained only by the use of corrective lenses, an applicant may be assessed as fit subject to the following endorsement on the medical certificate:

"Suitable corrective lenses (distance vision) must be worn".

(2) This endorsement means that these lenses must be worn when the applicant exercises the privileges of the licence.

(3) An applicant with uncorrected distance visual acuity of 6/24 or its equivalent (20/80, 0.25) or worse in either eye is also subject to the following limitation endorsed on the medical certificate:
"Suitable spare corrective spectacles must be readily available".

(4) The visual acuity, with and without correction, must be recorded at each examination.]

(1) Distant vision is to be examined with a 6m Snellen Chart. A different chart is to be used for each eye. Visual acuity with and without correction must be recorded at each examination.

(2) Distant visual acuity with or without correction shall be 6/12 or better in each eye separately, and binocular visual acuity shall be 6/9 or better. No limits apply to uncorrected visual acuity. Where this standard of visual acuity can be obtained only with correcting lenses, the applicant may be assessed as fit provided that:

(a) the medical certificate is endorsed with the following limitation: "Suitable corrective lenses must be worn for distance vision";
(b) such correcting lenses are worn during the exercise of the privileges of the licence or rating applied for or held; and
(c) a pair of suitable correcting spectacles is kept readily available during the exercise of the privileges of the applicant's licence.

(3) In the event it is suspected than an applicant no longer meets the requirements prescribed in this technical standard, the Authority may require an ophthalmic report. Both uncorrected and corrected visual acuity are normally measured and recorded at each re-examination. Conditions which indicate a need to obtain an ophthalmic report include, but not limited to, substantial decrease in the uncorrected visual acuity; decrease in best corrected visual acuity, and the occurrence of eye disease, eye injury or eye surgery.

(4) An applicant may use contact lenses to meet this requirement provided that:

(a) the lenses are monofocal and non-tinted;
(b) the lenses are well tolerated; and
(c) a pair of suitable correcting spectacles is kept readily available during the exercise of the licence privileges.

(5) An applicant who use contact lenses may not need to have their uncorrected visual acuity measured at each re-examination provided the history of their contact lens prescription is known.

(6) An applicant with a large refractive error shall use contact lenses or high-index spectacle lenses.

(7) An applicant whose uncorrected distant visual acuity in either eye is worse than 6/60 shall be required to provide a full ophthalmic report prior to initial medical assessment and every five years thereafter. The purpose of the required ophthalmic examination is to ascertain normal visual performance, and to identify any significant pathology.

(8) An applicant who has undergone surgery affecting the refractive status of the eye shall be assessed as unfit unless they are free from those sequelae which are likely to interfere with the safe exercise of their licence and rating privileges.

(9) An applicant shall have the ability to read, while wearing the correcting lenses, if any, required by subsection (2), the N5 chart or its equivalent at a distance of 30 to 50 cm. If this requirement is met only by the use of near correction, the applicant may be assessed as fit provided that this near correction is added to the spectacle correction already prescribed in subsection (2); if no such correction is prescribed, a pair of spectacles for near use shall be kept readily available during the exercise of the privileges of the licence. When near correction is required, the applicant shall demonstrate that one pair of spectacles is sufficient to meet both distant and near visual requirements.

(10) An applicant who needs near correction to meet this requirement will require "look-over", bifocal or perhaps multifocal lenses in order to read the instruments and a chart or manual held in the hand, and also to make use of distant vision, through the windscreen, without removing the lenses. Single-vision near correction (full lenses of one power only, appropriate for reading) significantly reduces distant visual acuity and is therefore not acceptable. Whenever there is a requirement to obtain or renew correcting lenses, an applicant is expected to advise the refractionist of reading distances for the visual flight deck tasks relevant to the types of aircraft in which the applicant is likely to function.

(11) When near correction is required in accordance with the above paragraph, a second pair of near-correction spectacles shall be kept available for immediate use.

(12) The applicant shall be required to have normal fields of vision.

(13) The applicant shall be required to have normal binocular function.

(14) Reduced stereopsis, abnormal convergence not interfering with near vision, and ocular misalignment where the fusional reserves are sufficient to prevent asthenopia and diplopia need not be disqualifying.

[2.2.4 Combined distance and near vision correction

Applicants requiring distance vision correction must have a near point of accommodation not greater than 33 centimetres, as measured while wearing the required distance vision corrective lenses. Suitable correction for near vision may be necessary in addition to distance vision correction.]

2.2.5 Dioptre limits

A need for corrective lenses for either eye within the range of plus or minus 5 dioptres (spherical equivalent) may be accepted, provided that the visual acuity without correction is not worse than 6/60 in each eye separately. Spectacle lenses outside this range are not routinely acceptable, but medical conclusion may permit an applicant to be assessed as fit on production of satisfactory specialist reports. The medical certificate will be, where appropriate, endorsed with the following:

(a) "Contact lenses only must be worn"; and

(b) "Spare spectacles must be readily available";

(c) the substitution in section 4 for subsection 3.2 of the following subsection:

"3.2 Visual standards

3.2.1 General

(1) An applicant may not have –

(a) any condition or congenital abnormality of either eye or its attachments likely to impede the safe exercise of the privileges of the licence;

(b) any abnormality of visual fields or binocular function;

(c) any manifest squint, or large errors of eye muscle balance (phoria); **[The acceptable limits for ocular muscle balance are 12 prism dioptres for exophoria, 6 dioptres for esophoria; and 1.5 dioptre for hyperphoria measured at distance. If corrective lenses are required, phoria must be measured while using the appropriate corrective lenses;]**

(d) any anatomical or functional monocularity or substandard vision in one eye at initial issue of a Class 3 medical certificate. However, medical conclusion may permit experienced licence holders who develop monocularity or substandard vision to be granted a medical certificate with appropriate restrictions **[following a period sufficient to permit adjustment to this condition]** after an adaptation period of at least 6 months following the loss of vision.

(2) Monocularity means that either an eye is absent, or its vision cannot be corrected to better than 6/24. Such applicants require evaluation by an opthalmologist to determine the cause of the visual loss. Fitness to be licensed will be determined on a case by case basis. Practical testing in the air traffic control environment is a requirement.

(3) Substandard vision in one eye means one eye meets the required standards for a particular class of licence but the visual acuity of the other eye cannot be corrected to the required standards i.e. central vision better than 6/24 but worse than 6/12, with normal visual fields. Such applicants require evaluation by an opthalmologist to determine the cause of the visual loss. Fitness will be determined on a case by case basis. Practical testing in the air traffic control environment may be required.

(4) The relevant protocols are contained in Schedules 21 and 22.

3.2.2 Near vision and intermediate vision

(1) Near vision: An applicant must be able to read N5 at a distance of 30-50 cms or have equivalent visual acuity of 6/9, 20/30. **[6/9 N5 at a distance of 33 centimetres and N14 at a distance of 100 centimetres or have equivalent visual acuity for these distances (6/12, 20/40 at 33 cm; 6/24, 20/80 at 100 cm).]**

(2) Intermediate vision: An applicant must be able to read N14 at a distance of 100 centimetres or have equivalent visual acuity of 6/18, 20/100 at 100 cms.

(3) An applicant who meets this standard only by use of spectacles may be granted a medical certificate provided this is endorsed with the following limitation: "Suitable corrective lenses must be readily available".

(4) This means that these must be available for immediate use when exercising the privileges of licence. This limitation may be satisfied by the availability of appropriate bifocal, **[or]** trifocal or multifocal spectacles which permit the reading of displays and a chart or manual held in one hand, without impeding the use of distance vision when wearing the spectacles. The wearing of single vision near correction (full lenses of one power only, appropriate to reading), significantly reduces distance visual acuity, and is not acceptable in an air traffic control tower. Nevertheless, full lenses may be acceptable in a radar room in which case the medical certificate must be endorsed with the following:

"Suitable corrective lenses must be readily available (full lenses permitted in radar room)",

to indicate this option has been permitted. Whenever there is a requirement to obtain or renew corrective lenses, an applicant must advise the refractionist of reading distances for the air traffic service unit in which the applicant is likely to function.

(5) Near vision and intermediate vision should be recorded by ticking in the appropriate box if the pilot is able to see N5 at 30 – 50 cms and N14 at a distance of 100 cms respectively.

(6) Near vision and intermediate vision should be tested using a pocket vision screener.

3.2.3 Distance vision

(1) [Applicants must have distance visual acuity of not worse than 6/6 or its equivalent (20/30, 1.0) in each eye separately with or without corrective lenses. When this standard can be obtained only by the use of corrective lenses, an applicant may be assessed as fit subject to the following endorsement on the medical certificate:

"Suitable corrective lenses (distance vision) must be worn".

(2) This endorsement means that these lenses must be worn when the applicant exercises the privileges of the licence.

(3) An applicant with uncorrected distance visual acuity of 6/24 or its equivalent (20/80, 0.25) or worse in either eye is also subject to the following limitation endorsed on the medical certificate:

"Suitable spare corrective spectacles must be readily available".

(4) The visual acuity, with and without correction, must be recorded at each examination.]

(1) Distant vision is to be examined with a 6m Snellen Chart. A different chart is to be used for each eye. Visual acuity, with and without correction must be recorded at each examination.

(2) Distant visual acuity with or without correction shall be 6/9 or better in each eye separately, and binocular visual acuity shall be 6/6 or better. No limits apply to uncorrected visual acuity. Where this standard of visual acuity can be obtained only with correcting lenses, the applicant may be assessed as fit provided that:

(a) the medical certificate is endorsed with the following limitation: "Suitable corrective lenses must be worn for distance vision";
(b) such correcting lenses are worn during the exercise of the privileges of the licence or rating applied for or held; and
(c) a pair of suitable correcting spectacles is kept readily available during the exercise of the privileges of the applicant's licence.

(3) In the event it is suspected than an applicant no longer meets the requirements prescribed in this technical standard, the Authority may require an ophthalmic report. Both uncorrected and corrected visual acuity are normally measured and recorded at each re-examination. Conditions which indicate a need to obtain an ophthalmic report include, but not limited to, substantial decrease in the uncorrected visual acuity; decrease in best corrected visual acuity, and the occurrence of eye disease, eye injury or eye surgery.

(4) An applicant may use contact lenses to meet this requirement provided that:

(a) the lenses are monofocal and non-tinted;
(b) the lenses are well tolerated; and
(c) a pair of suitable correcting spectacles is kept readily available during the exercise of the licence privileges.

(5) An applicant who uses contact lenses may not need to have their uncorrected visual acuity measured at each re-examination provided the history of their contact lens prescription is known.

(6) An applicant with a large refractive error shall use contact lenses or high-index spectacle lenses.

(7) An applicant whose uncorrected distant visual acuity in either eye is worse than 6/60 shall be required to provide a full ophthalmic report prior to initial medical assessment and every five years thereafter. The purpose of the required ophthalmic examination is to ascertain normal visual performance, and to identify any significant pathology.

(8) An applicant who has undergone surgery affecting the refractive status of the eye shall be assessed as unfit unless they are free from those sequelae which are likely to interfere with the safe exercise of their licence and rating privileges.

(9) An applicant shall have the ability to read, while wearing the correcting lenses, if any, required by subsection (2), the N5 chart or its equivalent at a distance of 30 to 50 cm and the ability to read the N14 chart or its equivalent at a distance of 100 cm. If this requirement is met only by the use of near correction, the applicant may be assessed as fit provided that this near correction is added to the spectacle correction already prescribed in subsection (2); if no such correction is prescribed, a pair of spectacles for near use shall be kept readily available during the exercise of the privileges of the licence. When near correction is required, the applicant shall demonstrate that one pair of spectacles is sufficient to meet both distant and near visual requirements.

(10) An applicant who needs near correction to meet this requirement will require "look-over", bifocal or perhaps multifocal lenses in order to read the instruments and a chart or manual held in the hand, and also to make use of distant vision, through the windscreen, without removing the lenses. Single-vision near correction (full lenses of one power only, appropriate for reading) significantly reduces distant visual acuity and is therefore not acceptable. Whenever there is a requirement to obtain or renew correcting lenses, an applicant is expected to advise the refractionist of reading distances for the visual flight deck tasks relevant to the types of aircraft in which the applicant is likely to function.

(11) When near correction is required in accordance with the above paragraph, a second pair of near-correction spectacles shall be kept available for immediate use.

(12) The applicant shall be required to have normal fields of vision.

(13) The applicant shall be required to have normal binocular function.

(14) Reduced stereopsis, abnormal convergence not interfering with near vision, and ocular misalignment where the fusional reserves are sufficient to prevent asthenopia and diplopia need not be disqualifying.

[3.2.4 Combined distance and near vision correction

Applicants requiring distance vision correction must have a near point of accommodation not greater than 33 centimetres, as measured while wearing the required distance vision corrective lenses. Suitable correction for near vision may be necessary in addition to distance vision correction.]

3.2.5 Dioptre limits

A need for corrective lenses for either eye within the range of plus or minus **[3]** 5 dioptres (spherical equivalent) may be accepted, provided that the visual acuity without correction is not worse than 6/60 in each eye separately. Spectacle lenses outside this range are not routinely acceptable, but medical conclusion may permit an applicant to be assessed as fit on production of satisfactory specialist reports. The medical certificate will be, where appropriate, endorsed with the following:

(a) "Contact lenses only must be worn"; and

(b) "Spare spectacles must be readily available".

Amendment of Technical Standard 67.00.2

5. Technical standard 67.00.2 is hereby amended by –

(a) the substitution in section 2 for subsection 1.4 of the following subsection:

"1.4 Electro-cardiography

[Electro-cardiography must form part of the cardiovascular examination for the initial issue of a Class 1 medical certificate, and at recertification at the following intervals: At the first examination after the ages of 25, 30, 35, 38, 40, and annually thereafter.]

The relevant Protocol is contained in Schedule 34.";

(b) the substitution in section 2 for subsection 2.4 of the following subsection:

"2.4 Electro-cardiography

[Electro-cardiography must form part of the cardiovascular examination for the initial issue of a Class 2 medical certificate, and at recertification at the following intervals: At the first examination after the ages of 40, 44, 48, 52, 54, 56, 58, 60 and annually thereafter.]

The relevant Protocol is contained in Schedule 34.";

(c) the substitution in section 2 for subsection 3.4 of the following subsection:

"**3.4 Electro-cardiography**

[Electro-cardiography must form part of the cardiovascular examination for the initial issue of a Class 3 medical certificate, and at recertification at the following intervals: At the first examination after the ages of 25, 30, 35, 38, 40 and annually thereafter.]

The relevant Protocol is contained in Schedule 34.";

Amendment of Technical Standard 67.00.2

6. Technical standard 67.00.2 is hereby amended by –

(a) the substitution in section 2 for subsection 1.1.6(2) of the following subsection:

"**2. Class 1 medical certificate**

1.1.6 Cardiovascular

(2)(a) Disorders of cardiac rhythm requiring a pacemaker will be disqualifying unless acceptable and effective treatment has controlled any additional risk of functional disorder or sudden or subtle incapacitation.

(b) An applicant with an abnormal cardiac rhythm shall be assessed as unfit unless the cardiac arrhythmia has been investigated and evaluated in accordance with the best medical practice and is assessed as not likely to interfere with the safe exercise of the privileges of the applicants' license or ratings.

(c) Applicants with evidence strongly suggestive of coronary artery disease, including the presence of excessive cardiovascular risk factors, will be assessed as unfit unless adequate myocardial perfusion can be demonstrated and reversible risk factors controlled.";

(b) the substitution in section 3 for subsection 2.1.6(2) of the following subsection:

"**3. Class 2 medical certificate**

2.1.6 Cardiovascular

(2)(a) Disorders of cardiac rhythm requiring a pacemaker will be disqualifying unless acceptable and effective treatment has controlled any additional risk of functional disorder or sudden or subtle incapacitation.

(b) An applicant with an abnormal cardiac rhythm shall be assessed as unfit unless the cardiac arrhythmia has been investigated and evaluated in accordance with the best medical practice and is assessed as not likely to interfere with the safe exercise of the privileges of the applicants' license or ratings.

(c) Applicants with evidence strongly suggestive of coronary artery disease, including the presence of excessive cardiovascular risk factors, will be assessed as unfit unless adequate myocardial perfusion can be demonstrated and reversible risk factors controlled.";

(c) the substitution in section 4 for subsection 3.1.6(2) of the following subsection:

"4. Class 3 medical certificate

3.1.6 Cardiovascular

(2)(a) Disorders of cardiac rhythm requiring a pacemaker will be disqualifying unless acceptable and effective treatment has controlled any additional risk of functional disorder or sudden or subtle incapacitation.

(b) An applicant with an abnormal cardiac rhythm shall be assessed as unfit unless the cardiac arrhythmia has been investigated and evaluated in accordance with the best medical practice and is assessed as not likely to interfere with the safe exercise of the privileges of the applicants' license or ratings.

(c) Applicants with evidence strongly suggestive of coronary artery disease, including the presence of excessive cardiovascular risk factors, will be assessed as unfit unless adequate myocardial perfusion can be demonstrated and reversible risk factors controlled.";

(d) the substitution in section 5 for subsection 4.1.6(2) of the following subsection:

"5. Class 4 medical certificate

4.1.6 Cardiovascular

(2)(a) Disorders of cardiac rhythm requiring a pacemaker will be disqualifying unless acceptable and effective treatment has controlled any additional risk of functional disorder or sudden or subtle incapacitation.

(b) An applicant with an abnormal cardiac rhythm shall be assessed as unfit unless the cardiac arrhythmia has been investigated and evaluated in accordance with the best medical practice and is assessed as not likely to interfere with the safe exercise of the privileges of the applicants' license or ratings.

(c) Applicants with evidence strongly suggestive of coronary artery disease, including the presence of excessive cardiovascular risk factors, will be assessed as unfit unless adequate myocardial perfusion can be demonstrated and reversible risk factors controlled.".

Amendment of Technical Standard 67.00.9

7. Technical standard 67.00.9 is hereby amended by the substitution for the table in section 2 of the following table:

"TABLE 1

Central Nervous System **Central nervous system stimulants: All pharmacological in this group is unacceptable. The disease condition per se does preclude aviation related activity.**			
Name	**Acceptable**	**Unacceptable**	**Comments**
Benzodiazepines	Temazepam		No flying within **[12 hours]** 72 hours; this drug is addictive and should not be used with alcohol at the same time
Other	Zopiclone Zolpidem Zaleplon		Applicants must wait 24-48 hours after these medications have been taken before flying. These drugs must not be used more than twice a week to avoid habituation
Food supplement		Melatonin (not generally	If considered, it should be given a

		recommended for flight crew and cabin crew)	'ground trial' during a period when the crew member will not be engaged in flying duties and any unwanted side effects can be assessed.
[SSIR] SSRI	Fluoxetine Sertraline Citalopram, or Escitalopram Paroxetine		Selected non-sedating selective serotonin reuptake inhibitors **([SSIR]** SSRI) require a minimum of three (3) months grounding period. The **[CAA]** Authority will evaluate affected applicants on a case-by case basis and will issue medical certificates based on medical findings, refer to the protocol
Barbiturates		These agents are unacceptable	
Anxiolytics		These agents are unacceptable	
Anti-psychotics		These agents are unacceptable	
Anti-epileptics		These agents are unacceptable **[for]** to Pilots & ATC Including Gabapentin which is used for conditions other than epilepsy	These medications may be considered for cabin crew, case-case presentation. A 3 month stabilisation period is required. Refer to Protocol.

Anti-Parkinson agents		These agents are unacceptable	
Anti-vertigo and anti-emetics		These agents are unacceptable	
Anti-migraine agents	**[Triptans]**	Maxalt Triptans	The underlying condition is disqualifying. The Authority will evaluate affected applicants on a case – by case basis and will issue medical certificates based on the medical findings. Applicants allowed on these medications may not fly for 24 hours after being treated with these medications. Beta blockers may be considered acceptable for prophylaxis. Refer to Protocol
Alzheimer's disease		These agents are unacceptable	
Anaesthetics	Acceptable		A minimum of 24 hours following local or regional (including dental) anaesthetics. (The condition for which the anaesthetic has been administered must also be considered prior to returning an individual to flying or

			controlling duties). A minimum of 72 hours following general, spinal or epidural anaesthetic. This proscription includes drug-induced sedation. (The condition for which the anaesthetic has been administered must also be considered prior to returning an individual to flying or controlling duties).
ANALGESICS & ANTI-INFLAMMATORIES			
	Acceptable	Unacceptable	
Central Nervous System		Morphine Codeine Codethyline Cocaine Cannabis	Central acting analgesics and narcotics **[morphine]** /opioid, analgesics are strictly incompatible with flying status.
		Doxylamine Promethazine Meprobamate Orphenadrine Propoxyphene Diphenhydramine Tramadol	

NSAIDS Peripheral analgesics	Acetyl Salicylic Acid		
Non-Selective Cox-Inhibitors Acetaminophen	Acceptable Paracetamol	Unacceptable Sulindac Phenylbutazone	These substances, prescribed for short periods at moderate doses, may be compatible with flying status if the condition which justifies their prescription is itself compatible with flying status.
Salicylates	Acetyl Salicylic Acid		
Propionic acid derivatives	Ibuprofen Naproxen Fenoprofen Ketoprofen Flurbiprofen Indomethacin		
Acetic acid derivatives	Ketorolac Diclofenac Nabumetone Piroxicam		
Enolic acid (Oxicam)	Meloxicam Tenoxicam Lornoxicam Mefenamic acid		
Fenamic acid derivatives	Meclofenamic acid Flufenamic acid Tolfenamic acid		

COX Inhibitors	Meloxicam		
SelectiveCOX2 inhibitors	Celecoxib Etoricoxib Parecoxib		
Musculoskeletal Agents			
Anti-Gout	Allopurinol	Colchicine	This medication may be acceptable, each application will be considered on a case-by-case basis Flying prohibited while on colchicine. Stable GIT must be demonstrated after discontinuation of colchicine.
Topical agents	These agents are acceptable		
Gold		These agents are unacceptable	
Osteoporosis	Bisphosphonates Alendronate Risedronate Calcium and Vit D supplements Other drugs: Selective oestrogen receptor Modulators –Raloxifene Parathyroid hormone		Reserved on a case-by-by case basis

	Teriparatide		
Autonomic		Sympathomimetics Sympatholytics Cholinergic Anti-cholinergics	All centrally acting agents are unacceptable
Autacoids			
Antihistamines	Ebastine Loratadine Desloratadine Acrivastine Fexofenadine		Sedating oral antihistamines are not authorised for flying personnel and incompatible with flying status. New generation, non-sedating oral (e.g. fexofenadine) and topical antihistamines may be acceptable.
Serotonin antagonists		All agents in this group are unacceptable Methysergide, Cyproheptadine Pizotifen Ondansetron Grinesatron	
Neurokinin1(NK1) Antagonists		All agents in this group are unacceptable Aprepitant Casopitant	Novel class of medications that possesses unique antidepressant, anxiolytic, and antiemetic properties
Cardio-Vascular Agents			

Positive Inotropic Agents		All agents in this group are unacceptable	
Anti-Arrhythmic			Case-by case presentation, individual medical may be considered
Anticoagulants	Rivaroxabin Dabigatran		The underlying condition should be assessed on a case by case basis
Anti-Hypertensives			
Central acting sympathetic nervous system inhibitors		All agents in this group are unacceptable	
Alpha-receptor blockers	Tamsulosin – e.g. Tamsul	All other agents in this group are unacceptable	All L.U.T.S cases –cases presentation, individual medication will be considered. An applicant on Tamsulosin shall be monitored for postural hypotension with every medical as per underlying condition protocol requirements
Beta-receptor blockers	Atenolol Metoprolol Bisoprolol	Non-selective drugs are unacceptable	Cardio-selective beta blockers are acceptable, but no longer first line or choice.
Sympathetic nervous blockers		These drugs are unacceptable as they may impair alertness.	
Direct-acting vasodilators		Dihydralazine **[Prazozine]** Prazosin	These drugs are unacceptable because they frequently have adverse side effects such as orthostatic

		[Uradipil]-Urapidil	hypotension.
Calcium channel blockers	Diltiazem Verapamil Nicardipine Nitrendipine Long-acting Nifedipine	Short acting Nifedipines are unacceptable.	These medications may be compatible with flying status. They may induce peripheral oedema or headache, but they are generally well tolerated. Preference shall be given to medications with the most flexible use. If used for angina these medications are not compatible with flying status.
ACE inhibitors	Captopril Enalapril Lisinopril Benazepril Fosinopril Perindopril Quinapril Ramipril		
Angiotensin receptor antagonists	Candesartan Eprosartan Irbesartan Losartan Telmisartan Valsartan		
Anti-anginal agent			Angina pectoris per se is disqualifying.

Diuretics	Hydrochlorothiazide (< 25 mg/day) Potassium/ magnesium sparing diuretics such as amiloride and spironolactone	Furosemide Bumetanide Torasemide Acetazolamide Eplerenone	Low dose diuretics are acceptable. High dose kaliuretic diuretics (> 25 mg hydrochlorothiazide or equivalent) are unacceptable.
Other vasodilators			The indications for use are disqualifying.
Vasoconstrictors			The indications for use are disqualifying.
Hypolipidaemic agents **Dyslipidaemia in flying personnel should be treated in conjunction with an appropriate diet and weight reduction if appropriate.**			
Fibrates			Treatment with fibric acids (e.g. fenofibrate or gemfibrozil) should be discontinued in the case of gastrointestinal side effects or elevated transaminase concentration
Statins	**[Cholestyramine]** All except exclusions	Fluvastatin Lovastatin Combined formulas e.g. Ezetimibe & Statins	HMG-CoA reductase inhibitors are acceptable with preference for hydrophilic molecules such as pravastatin rather than lipophilic substances such as simvastatin which may induce sleep disorders.

Others	Acipimox (niacin derivative) used in low doses and accepted on a case-by-case basis.		
Plasma expanders		All agents in this group are unacceptable	
Blood and Haemopoeitic	Anticoagulants – Warfarin – refer to the protocol-acceptable	Haemostatics, the indications for use are disqualifying	
Fibrinolytics		All agents in this group are unacceptable	
[Platelet aggregation] Haematological agents inhibitors, Injectables	Disprin/Aspirin in low-dose (≤100mg/day) acceptable	All agents in this group are unacceptable	
Sclerosing		All agents in this group are unacceptable	
Haematinics	Prophylactics in pregnancy are acceptable		Anaemia has to be corrected before consideration.
Haemoglobin-based Oxygen carrier		This medication is not considered	
Respiratory System			
Coughs and cold	Drugs containing only **[carbosysteine]** carbocysteine,	Tripolidine Pseudoephedrine	

	guaifenesin or acetyl cysteine without an alcohol base are accepted	Ephedrine Codeine & modified Theophylline **[Dextromethorphane]** Dextromethorphan Diphenhydramine Promethazine Noscapine Phenyltoloxamine Methadone	
Bronchodilators	Spiriva		Sympathomimetics: The use of Short-acting Beta Agonists (SABA) /Long-acting Beta Agonists (LABA) should be restricted to eight (8) hours or more prior to flying, but may be used in an unusual asthmatic attack in flight to allow the safe completion of the flight.
Methylxanthines and combinations		All agents in this group are unacceptable	
Anticholinergic		All other agents in this group are unacceptable	
Combinations	Only acceptable combinations are Salmeterol with Fluticasone and Budesonide and Formoterol.		

Mucolytics	Carbocysteine Acetylcysteine Bromhexidine		
Anti-asthmatics	Inhaled Glucocorticoids Leucotrine receptor antagonists		
Chromones	Cromolyn sodium Nedocromil sodium		The drugs are also called cromoglycates. They are alternative choices when initiating regular controller therapy in patients with mild asthma, although inhaled corticosteroids (ICS) are the preferred agents. They have the advantage of having a lower side effect profile than ICS.
Other anti-asthmatics		All agents in this group are unacceptable	
Surfactants		This medication is not compatible with flying.	
Ear, Nose and Throat			
Topical nasal preparations	These medications are acceptable.		
Ear drops and ointments	These medications are acceptable.		
Mouth and Throat preparations	These medications are acceptable.		

Gastro-Intestinal tract			
Digestants	These medications are acceptable.		
Appetite suppressants		All agents in this group are unacceptable	
Anti-spasmodics	Mebeverine Alverine Peppermint Oil	Hyoscine Diphenhidramine Alcohol substrates Belladonna Chlordiazepoxide Propentheline Methixene	Antimuscarinics (e.g. dicyclomicine, mepenzolate, pipenzolate, poldine and **[propatheline]** propentheline) are used to reduce smooth muscle spasm in non-ulcerative dyspepsia, irritable bowel syndrome and diverticular disease. They all have atropine-like side-effects of confusion, dry mouth, reduced power of accommodation, difficulty with micturition and constipation, which preclude their use.
Acid reducers			
Antacids		Magnesium as a single drug is unacceptable.	
Antacids and combinations		Dicyclomine Magnesium dominant drugs	

		Oxethazaine	
H2 receptor antagonists	Cimetidine allowable if taken more than 8 hours before aviation activity. Ranitidine allowable if taken more than 12 hours before aviation activity		
Proton pump inhibitors	Omeprazole		
Cycloprotective		Misoprostol	
Motility enhancers		All agents in this group are unacceptable	
Laxatives		Magnesium salts	
Antidiarrheal	Loperamide not to be taken less than 6 hours before aviation activity.	Codeine phosphate **[Cophenotrope]** Co phenotrope Morphine Atropine (Lomotil) Aminopentamide	
Liver, gall bladder and bile		These agents are unacceptable due to disease profile	Treatment for the dissolution of gallstones is not compatible with flying status as it may cause diarrhoea and cholecystitis.
Suppositories and anal ointments	These agents are acceptable		Soothing preparations containing bismuth subgallate, zinc oxide and haemamelis often mixed with a small dose of corticosteroid

			may be acceptable in short courses for topical application.
Others	Sulfasalazine enteric coated may be used with 6 monthly ophthalmology reporting, FBC, UKE, and urinalysis	Sibutramine Budesonide Infliximab Orlistat	
Anti-inflammatory agents for Bowel Disease	Mesalazine Asacol: (5-aminosalicylic acid)	Humira Salofalk	Case-by case presentation, individual medication may be considered Sulfasalazine enteric coated may be used with 6 monthly ophthalmology reporting, FBC, UKE, and urinalysis The use of sulfasalazine in inflammatory bowel disease has declined due mainly to the fact that it yields the metabolite sulfapyridine which gives rise to side-effects such as agranulocytosis and hypospermia. However, the other metabolite of sulfasalazine, 5-aminosalicylic acid (5-ASA) is credited with causing the drug's therapeutic effect. Therefore, 5-ASA and other derivatives of 5-ASA, are now usually preferred and given alone (as mesalazine), despite their increased cost, due to their more favourable side-effect profile. Sulfasalazine, and its metabolite 5-ASA, are poorly

			absorbed from the small intestine. Its main mode of action is therefore believed to be inside the intestine. Approximately one third of a dose of sulfasalazine is absorbed from the small intestine. The remaining two thirds pass into the colon where it is split by bacteria into 5-ASA and SP. SP is well absorbed from the colon (estimated bioavailability 60%); 5-ASA is less well absorbed (estimated bioavailability 10% to 30%).
Antihelmintics			
Antihelmintics	Mebendazole Albendazole Praziquantel	Piperazine	
Dermatological			
Anti-bacterial antiseptic agents	These medications are acceptable.		
Anti-parasitics	These medications are acceptable.		
Fungicides	These medications are acceptable.		
Cortico-steroids	These medications are acceptable.		
Psoriasis		Systemic Etretinate Acitretin	Systemic etretinate for psoriasis may cause serious drying of the skin and mucosa and particularly of the conjunctival tissues,

			intensified by flying conditions. It is not recommended for aircrew.
Acne		Tretinoin Isotretinoin Cyproterone acetate Minocycline	
Melanin inhibitors and stimulants		These medications are unacceptable	
Emollients and Protectives	These medications are acceptable		
Others		Imiquimod Minoxidil	
OPHTHALMICS Aviation activities only to commence once all visual normality is regained			
Anti-infective and antiviral	Chloramphenicol Ciprofloxacin Ofloxacin Oxytetracycline Fusidic Acid Moxyfloxacin Acyclovir		Anti-infective and anti-inflammatory eye preparations are usually not compatible with flying status due to the underlying condition. The SACAA should be consulted if there is any doubt
Corticoids	These medications are acceptable		
Combinations		All treatment containing Aminoglycosides are	

		unacceptable	
Decongestants		These medications are unacceptable.	
Mydriatics		These agents are unacceptable	
Others		Injectables Verteporfin	
Urinary System			
Anti-diuretics		This medication is not compatible with flying	
Urinary alkalinizes		The chronic use of this medication is not compatible with flying	
Urinary antiseptics	Tamsulosin	Pipemidic acid Nalidixic acid Lanthanum Flavoxate	
Others	Tamsulosin	Lanthanum Flavoxate	
Genital System			
Contraceptives	These medications are acceptable		
Vaginal Preparations	These medications are acceptable		
Oxytocics		These agents are unacceptable	
Uterine		These agents are	

antispasmodics		unacceptable	
Sexual dysfunction			Temporary colour vision disturbance have been reported after the use of phosphodiesterase-type-5 inhibitors (e.g. vardenafil, sildenafil). 72 hours should elapse after use prior to flying.

Anti-Microbials			
Anti-Microbials	Beta-lactams, Erythromycin(short course) Azithromycin (short course) Other Macrolides, Chloramphenicols Sulphonamides and combinations Quinolones Clindamycin(short course) Na-Fusidate Fosfomycin Doxycycline	Telithromycin Roxithromycin Aminoglycosides	All antibiotics should be used for 48 hours without any side effects before commencing aviation activities. Injectables are not acceptable.
Anti-viral agents	Acyclovir		Anti-Retroviral to be considered on a case-by-case basis

Anti-fungal agents			
Anti-fungal agents	Fluconazole Itraconazole Nystatin Terbinafine Griseofulvin Ketoconazole		
Anti-protozoa agents			
Anti-protozoa agents	Metronidazole Atovaquone Chloroquine	Pirimethamine Tinidazole Halofantrine Mefloquine	
Anti-retroviral agents			
Nucleoside Reverse Transcriptase Inhibitors (NRTI's)	Zizovudine Retrovir Lamivudine Didanosine Abacavir Emtricitabine Tenofovir	Efavirenz	Initially- monthly FBC for 6 months
Non-Nucleoside Reverse Transcriptase Inhibitors	Nevirapine		Initially- ALT & AST – 2 weeks, 6 weeks
[Proteases]	Atazanavir	Indinavir	

Protease Inhibitors (PI)	Lopinavir/Ritonavir Saquinavir Nelfinavir				
Others	Raltegravir Darunavir Etravirine Maraviroc Amprenvir		Tipranavir		
	Fosamprenavir				
Fusion Inhibitors	Fuzeon				
Endocrine System					
Anti-diabetic agents	Oral Metformin Thiazolidenediones Pioglita Rosiglitazone Acarbose:	Insulin Glargine Detemir Glulisine Lispro	Oral Glipizide Tolbutamide Gliclazide Glibenclamide Glimepiride Chlorpropamide Repaglinide Nateglinide Galvus Janumet Victoza	Insulin Neutral protamine Hagedorn Premix analogues (biphasic)	Refer to Diabetic Protocol
Thyroid	Thyroxine				Refer to Protocol

			rubella Yellow fever Typhoid Tuberculosis (Mantoux Test or Bacille Calmette-Guerin); Influenza Varicella Meningococcal Pneumococcal Cholera. After receiving the following immunisations (primary and boosters) there should be no aviation-related duties for a minimum of 72 hours: Japanese Encephalitis.
Biologics		Revellex Humira	
Enzymes			
Enzymes		These agents are unacceptable	
Poison Antidotes			
Poison Antidotes		Bupropion is	

		unacceptable	
Others			
Others	Nicotine adjuvants are acceptable	Bupropion is unacceptable	
Biological	Immunisation regimens are acceptable		No aviation-related duties for 24 hours after receiving the following vaccinations (primary and boosters): Adult diphtheria and tetanus Poliomyelitis Hepatitis A & B Measles, mumps, rubella Yellow fever Typhoid Tuberculosis (Mantoux Test or Bacille Calmette-Guerin); Influenza Varicella Meningococcal Pneumococcal Cholera. After receiving the following immunisations

			(primary and boosters) there should be no aviation-related duties for a minimum of 72 hours: Japanese Encephalitis.

Insertion of Schedule 34 to Document SA-CATS 67

8. The following Schedule 34 is hereby inserted in Document SA-CATS 67 after Schedule 33:

"SCHEDULE 34: PROTOCOL ON ELECTROCARDIOGRAMS ("ECG")

1. Applicability

This Protocol is applicable to applicants for Class 1, 2, and Class 3 medical certificates.

2. Resting ECG

Resting ECG shall be performed at the following intervals:

(a) Class 1 –

(i) at initial medical examination;
(ii) every 2 years between the age of thirty (30) and fifty (50); and
(iii) annually after the age of fifty (50).

(b) Class 2 –

(i) at initial medical examination;
(ii) first exam after the age of 40; and
(iii) every 2 years after the age of fifty (50).

(c) Class 3 –

(i) at initial medical examination; and

(ii) every 2 years after the age of fifty (50).

3. Procedure for resting ECG

(1) A resting ECG shall be recorded with the subject at rest in a warm environment.
(2) The skin should be prepared with spirit or abrasive, or both.
(3) Resting ECG is performed using a 12-lead standard ECG machine and chest leads should be placed accurately.
(4) Leads V1 and V2 should be placed in the fourth inter-costal spaces on either side of the sternum.
(5) Lead V4 is placed at the position of the apex of the normal heart – the fifth inter-costal space in the mid-clavicular line.
(6) Lead V3 is placed midway between V2 and V4. Leads V5 and V6 are placed at the same level as V4 in the anterior and mid-axillary lines, respectively.
(7) The limb leads are placed on the right and left arms, and the right and left legs respectively.

4. Interpretation

All ECGs are to be interpreted by a DAME trained in ECG reading who shall refer to a cardiologist or specialist physician when in doubt.

5. Stress ECG

(1) Stress ECG shall be performed in the following circumstances:

(a) When there is an abnormal resting ECG;
(b) When it is considered necessary due to the following risk factors:

(i) Hypertension;
(ii) Smoking;
(iii) Dyslipidaemia;
(iv) Diabetes Mellitus;
(v) raised BMI;
(vi) waist circumference or abdominal obesity; or
(vii) family history of early onset of cardiovascular disease.

(c) To an applicant classified as moderate, high or very high risk in accordance with the cardiovascular risk assessment algorithm.

[CRITERIA FOR CVR REQUIREMENTS

Group[1]	Initial C of A or Type Certificate[2]	Maximum Mass (kg)	Propulsion System	Recording retained for the last 30 minutes of operation	Recording retained for the last 2 hours of operation
1	C of A on or after 1 January 1987	>5 700	All	X	
2	C of A before 1 January 1987 and TC after 30 September 1969	>27 000	Turbine	X	
3	C of A on or after 2003	>5 700	All		X
4	C of A on or after 1 January 2016	All	Turbine		X

Notes –

1. ***Group 1, 2 and 3 recorders shall be CVRs. Group 4 shall be either a CVR or a CARS.***
2. ***Based on the initial date of issue not that for a variant.***]

CRITERIA FOR CVR AND CARS REQUIREMENTS

Group Please see note 1.	Conditions Please see note 2.	Maximum Certificated Take-Off Mass (kg	Propulsion System	Recording retained for the last 30 minutes of operation	Recording retained for the last 2 hours of operation	Recording retained for at least the last 25 hours of operation
1	Application for type certification submitted to Contracting State on or after 1 January 2016 and required to be operated by more than one	>2250 but ≤5700	Turbine		X	

	pilot					
2	Individual certificate of airworthiness first issued on or after 1 January 2003	> 5700	All		X	
3	Individual certificate of airworthiness first issued on or after 1 January 1987	> 5700	All		X	
4	Individual certificate of airworthiness first issued before 1 January 1987 whose types of which the prototype was certificated by the appropriate national authority after 30 September 1969	> 27000	Turbine		X	
5	Individual certificate of airworthiness is first issued on or after 1 January 2021	> 27000	All			X

Notes –

1. *Group 1 shall be either a CVR or a CARS. Group 2, 3 and 4 recorders shall be CVRs..*

2. *For the purposes of this technical standard, any reference to the application for the type certification being submitted to a Contracting State on or after a specified date means the date an application is made for a new aircraft type, not the date of certification of particular aircraft variants or derivative models. Any reference to the individual certificate of airworthiness being issued first on or after a specified date means the first time a certificate of airworthiness is issued for a new individual aircraft serial number that has just come off the assembly line.";*

(c) the insertion of the following section 10 after section 9:

Amendment of Technical Standard 127.04.2

18. Technical Standard 127.04.2 is hereby amended in section 2 by the addition after subsection (1) of the following subsection:

"2. Contents of operations manual

2.2 Part 2: Helicopter operating matters – type related

2.2.5 Performance

(1A) Performance material which provides the necessary data for compliance with the performance requirements prescribed in Subpart 8 of CAR must be included to allow the determination of helicopter climb performance with all engines operating to enable the PIC to determine the climb gradient that can be achieved during the departure phase for the existing take-off conditions and intended take-off technique, where applicable.".

Amendment of Technical Standard 127.07.21

19. Technical Standard 127.07.21 is hereby amended by the insertion after section 5 of the following section:

"6. Flight tracking

(1) The operator shall track the position of a helicopter through automated reporting at least every 15 minutes for the portion of the in-flight operation that is planned in an oceanic area –

(a) if the helicopter has a maximum certificated take-off weight of over 7 000 kg, and a seating capacity greater than 19; and

(b) where an ATS unit obtains helicopter position information at greater than 15 minute intervals.

(2) The operator shall establish procedures, approved by the Director, for the retention of helicopter tracking data to assist search and rescue in determining the last known position of the aircraft.

(3) A helicopter with a maximum certificated take-off weight of over 3175 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2021,

shall autonomously transmit information from which a position can be determined at least once every minute, when in distress.

(4) The operator shall make position information of a flight in distress available to the appropriate organizations, as established by the Director.

Note - More detailed information and guidance on flight tracking and autonomous transmission of information on position reporting is contained in the guidance material on flight tracking.".

Amendment of Technical Standard 128.04.2

20. Technical Standard 128.04.2 is hereby amended by the addition in section 2 of a subsection after subsection (1) as follows:

"2. Contents of operations manual

2.2 Part 2: Helicopter operating matters – type related

2.2.5 Performance

(1A) Performance material which provides the necessary data for compliance with the performance requirements prescribed in Subpart 8 of CAR must be included to allow the determination of helicopter climb performance with all engines operating to enable the PIC to determine the climb gradient that can be achieved during the departure phase for the existing take-off conditions and intended take-off technique, where applicable.".

Amendment of Technical Standard 135.04.2

21. Technical Standard 135.04.2 is hereby amended in section 2 by the addition in subsection (2) of paragraph (l):

"2. Contents of operations manual

2.2 Part 2: Aeroplane operating matters – Type Related

2.2.5 Performance

(2) Performance material which provides the necessary data for compliance with the performance requirements prescribed in Subpart 8 of **[this Part]** CAR must be included to allow the determination of –

(l) aeroplane climb performance with all engines operating to enable the PIC to determine the climb gradient that can be achieved during the departure phase for the existing take-off conditions and intended take-off technique.".

Amendment of Technical Standard 135.05.10

22. Technical Standard 135.05.10 is hereby amended by the substitution for the table in section 1 of the following table:

"[CRITERIA FOR FDR REQUIREMENTS

Group	Initial C of A or Type certificate[1]	Maximum m Mass (kg)	Propulsion System	FDR T.A.A. A+H[2]	FDR Type 1	FDR Type E 1A	FDR Type II	Class C Air	ADR S
1	C of A on or after 1 January 1989	>27 000	All		X				
2	C of A on or after 1 January 1989	>5 700 to >27 000	All				X		
3	C of A on or after 1 January 1987 to before 1 January 1989[3]	>5 700	Turbine	X					
4	TC after 30 September 1969 and C of A on or after 1 January 1987 to before 1 January 1989	>27 000	Turbine				X		
5	C of A before 1 January 1987	>5 700	Turbine	X					
6	C of A after 1 January 2005	>5 700	All			X			
7	C of A on or after 1 January 2016	´5 700	Turbine				X[4]	X[4]	X[4]

Notes –

1. ***Based on date of initial issue, not the date of certification of particular aeroplane variants or derivative models.***
2. ***FDR T.A.A.A+H means a FDR that records time, altitude, airspeed, normal acceleration and heading.***
3. ***Except for aeroplanes covered under Group 4.***
4. ***The recording system may be any one of these.***]

TABLE

Group	Conditions. Please see note 1.	Maximum Certificated Take-Off Mass (kg)	Propulsion System	FDR T.A.A.A.H Please see note 2.	FDR Type 1	FDR Type 1A	FDR Type II	Class C AIR or AIRS	ADRS

1	Application for type certification submitted to Contracting State on or after 1 January 2016 **See note 3**	≤ 5700	Turbine				X	X	X
2	Individual certificate of airworthiness first issued on or after 1 January 1989	> 27000	All		X				
3	Individual certificate of airworthiness first issued on or after 1 January 1989	> 5700 but ≤ 27000	All				X		
4	Individual certificate of airworthiness first issued on or after 1 January 1987 but before 1 January 1989 **Except those in Group 5**	> 5700	Turbine	X					
	Individual certificate of airworthiness first issued on or after 1 January 1987 but before 1 January 1989								
5	whose types of which the prototype was certificated by the appropriate national authority after 30 September 1969	> 27000	Turbine				X		
6	Individual certificate of airworthiness first issued before 1 January 1987	> 5700	Turbine	X					
7	Individual certificate of airworthiness first issued after 1 January 2005	> 5700	All			X			

Notes –

1. For the purposes of this regulation, any reference to the application for the type certification being submitted to a Contracting State on or after a specified date means the date an application is made for a new aircraft type, not the date of certification of particular aircraft variants or derivative models. Any reference to the individual certificate of airworthiness being issued first on or after a specified date means the first time a certificate of airworthiness is issued for a new individual aircraft serial number that has just come off the assembly line.

2. FDR T.A.A.A.H means a FDR that records time, altitude, airspeed, normal acceleration and heading.

3. The recording system may be any one of the three.".

Amendment of Technical Standard 135.05.11

23. Technical Standard 135.05.11 is hereby amended by the substitution for section 1 of the following section:

"1. Aeroplanes for which voice or aural recorders are required

Notes –

1. *CVR performance requirements are as contained in the EUROCAE ED-112, Minimum Operational Performance Specification (MOPS) document for Flight Recorder Systems of the European Organization for Civil Aviation Equipment (EUROCAE) for Crash Protected Airborne Recorder Systems, or equivalent documents.*

2. *CARS performance requirements are as contained in the EUROCAE ED-155, MOPS for Lightweight Flight Recorder Systems, or equivalent documents.*

(1) An operator shall ensure any aeroplane operated in a commercial air transport operation is equipped with a CVR or CARS capable of recording the aural environment of the flight deck during flight time in accordance with the following table –

[CRITERIA FOR CVR REQUIREMENTS

Group1	Initial C of A or Type Certificate 2	Maximum Mass (kg)	Propulsion System	Recording retained for the last 30 minutes of	Recording retained for the last 2 hours of

				operation	operation
1	C of A on or after 1 January 1987	>5 700	All	X	
2	C of A before 1 January 1987 and TC after 30 September 1969	>27 000	Turbine	X	
3	C of A on or after 2003	>5 700	All		X
4	C of A on or after 1 January 2016	All	Turbine		X

Notes –

1. ***Group 1, 2 and 3 recorders shall be CVRs. Group 4 shall be either a CVR or a CARS.***
2. ***Based on the initial date of issue not that for a variant.]***

TABLE

Group See note 1.	Conditions See note 2.	Maximum Certificated Take-Off Mass (kg)	Propulsion System	Recording retained for the last 30 minutes of operation	Recording retained for the last 2 hours of operation	Recording retained for at least the last 25 hours of operation
1	Application for type certification submitted to Contracting State on or after 1 January 2016 and required to be operated by more than one pilot	> 2250 but ≤ 5700	Turbine		X	
2	Individual certificate of airworthiness first issued on or after 1 January 2003	> 5700	All		X	
3	Individual certificate of airworthiness first issued on or after 1 January 1987	> 5700	All	-	X	
4	Individual certificate of airworthiness first issued before 1 January 1987 whose types of which the prototype was certificated by the appropriate national authority after 30 September 1969	> 27000	Turbine	-	X	

5	individual certificate of airworthiness is first issued on or after 1 January 2021	> 27000	All			X

Notes –

1. *Group 2, 3 and 4 recorders shall be CVRs. Group 1 shall be either a CVR or a CARS.*

2. *For the purposes of this regulation, any reference to the application for the type certification being submitted to a Contracting State on or after a specified date means the date an application is made for a new aircraft type, not the date of certification of particular aircraft variants or derivative models. Any reference to the individual certificate of airworthiness being issued first on or after a specified date means the first time a certificate of airworthiness is issued for a new individual aircraft serial number that has just come off the assembly line.*".

Amendment of Technical Standard 135.07.13

24. Technical Standard 135.07.13 is hereby amended by the insertion after section 5 the following section:

"**6. Flight tracking**

(1) The operator shall track the position of an aeroplane through automated reporting at least every 15 minutes for the portion of the in-flight operation that is planned in an oceanic area –

(a) if the aeroplane has a maximum certificated take-off weight of over 45 500 kg and a seating capacity greater than 19; and

(b) where an ATS unit obtains aeroplane position information at greater than 15 minute intervals.

(2) The operator shall establish procedures, approved by the Director, for the retention of aircraft tracking data to assist search and rescue in determining the last known position of the aircraft.

(3) An aeroplane of a maximum certificated take-off weight of over 5700 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2021, shall autonomously transmit information from which a position can be determined at least once every minute, when in distress.

(4) The operator shall make position information of a flight in distress available to the appropriate organizations, as established by the Director.

Note - More detailed information and guidance on flight tracking and autonomous transmission of information on position reporting is contained in the guidance material on flight tracking.".

Amendment of Technical Standard 145.02.1

25. The following Technical Standard is hereby substituted for Technical Standard 145.02.1:

"145.02.1 MANUAL OF PROCEDURE

1. Information to be contained in manual of procedure

(1) The information referred to in CAR 145.02.1(1)(b), which must be contained in the manual of procedure of the applicant, must include the following:

(a) Management

(i) Corporate commitment

A statement containing the commitment of the accountable manager and the organisation to comply with the **[airworthiness]** requirements prescribed in Part 145 and those **[as]** set out in this document and approved by the Director;

(ii) Management personnel

A list of the key management personnel and their positions;

(iii) Duties and responsibilities of the management personnel

A statement containing the duties and responsibilities of each management position referred to in subparagraph **[(2)]** (ii). For clarity, additional positions may be added;

(iv) Management organisation chart

The chart must show all line management positions down to supervisory level;

(v) List of certifying personnel

A list of all certifying personnel authorised to release aircraft on behalf of the organisation, with a scope of their authority and with signatures and stamps must be provided. A separate document may be referenced;

(vi) Human resources

A description of how human resource planning shall be used by the organisation to ensure optimum use of available resources to carry out scheduled and non-schedule work without violation of human factor principles;

(vii) Substance abuse

A description of, or reference to, a policy or procedure to prevent, reduce and control substance abuse problems in the workplace;

(viii) General description of facilities at each address intended to be approved.

A description of the facilities and layout is required;

(ix) Organisation's intended approved scope of work

A statement of the scope of work being applied or authorised under the organization's terms of approval;

(x) Capability list, when applicable

A description of, or reference to, a procedure regarding the responsibility and details for compiling and revising the capability list, including methods for self-evaluation;

(xi) Notification procedure to the **[Commissioner]** Director regarding changes in the organisation's activities/approval/location/personnel

A statement indicating who is responsible for notifying the **[Commissioner]** Director regarding changes, and what changes are subject to notification;

(xii) Contractual arrangements

A statement regarding the responsibility and procedure for liaison or management of contractual arrangements with other organisations which provide services associated with the approval;

(xiii) Manual of procedure amendment procedures

A statement regarding the responsibility and procedure for amendment of the manual of procedure, as well as the associated documents referred to in the manual of procedure.

(b) Maintenance procedures

(i) Purchasing procedure

A description of, or reference to, a procedure indicating that purchase documents will contain data clearly describing the product ordered, as well as the traceability documentation or data to be delivered with the product ordered;

(ii) Supplier and subcontractor evaluation and control procedure

A description of, or reference to, a procedure used by the organisation to evaluate and approve suppliers and subcontractor;

(iii) Acceptance/inspection of aircraft components from outside contractors

A description of, or reference to, a procedure for the documented control of verification, storage and maintenance of aircraft components from outside contractors;

(iv) Storage, tagging and release of aircraft components and material to aircraft maintenance

A description of, or reference to, a procedure for handling, storage, packaging (tagging), preservation of aircraft components and material to aircraft maintenance;

(v) Acceptance of tools and equipment

A description of, or reference to, a procedure for acceptance of tools and equipment by the organisation for use in the maintenance of aircraft;

(vi) Calibration of tools and equipment

A description of, or reference to, a procedure for the calibration of measuring and testing tools and equipment used on aircraft systems and equipment;

(vii) Use of tools and equipment by personnel

A description of, or reference to, a procedure for the methods in which special tools, alternative tools and equipment are used; and

(viii) Cleanliness standards of maintenance facility

A statement regarding the standard of cleanliness to be maintained.

(ix) Maintenance instructions

A description of, or reference to, a procedure for maintenance instructions and relationship to aircraft/aircraft component manufacturers' service information including updating and availability to personnel;

(x) Repair procedure

A description of, or reference to, the procedures for the repair of aircraft components;

(xi) Maintenance, structural repair and components or parts manuals

A description of, or reference to, a procedure for receiving, assessing, amending and dissemination within the AMO all necessary airworthiness and maintenance data issued by −

(aa) the type certificate holder or type design organisation;
(bb) external sources; and
(cc) the AMO;

(xii) Aircraft maintenance programme, A.D. procedures, modification procedures and technical record control

A description of, or reference to, a procedure indicating compliance with −

(aa) the operator's aircraft maintenance programme;
(bb) mandatory continued airworthiness information and airworthiness directives **[A.D. procedures]**;

(cc) modification **[procedures]**; and
(dd) technical record control;

(xiii) Maintenance documentation

A description of, or reference to, a procedure of the relevant documentation to be used and instructions for the completion thereof;

(xiv) Rectification of defects

A description of, or reference to, a procedure for the methods to be employed for the rectification of defects arising during **[base]** maintenance;

(xv) Release to service

A description of, or reference to, a procedure for the manner in which an aircraft is to be released to service after **[base]** maintenance and the circumstances under which the release is to be signed;

(xvi) Records for the operator

A description of, or reference to, a procedure for the records to be kept and the manner in which they are to be given to the operator;

(xvii) Defects reporting

A description of, or reference to, a procedure for complying with the service information reporting requirements as prescribed in CAR 145.02.16;

(xviii) Defective aircraft components

A description of, or reference to, a procedure for the return of defective aircraft components to the store and the method to be employed for routing the defective aircraft components to outside contractors and the return thereof;

(xix) Control of computer maintenance record systems

A description of, or reference to, a management procedure of the computer system used to manage and/or record information regarding the maintenance tasks carried out;

(xx) Special maintenance procedures

A description of, or reference to, a procedure for the manner in which specific maintenance procedures that may be required, such as –

(aa) engine running;
(bb) aircraft pressurisation tests; and
(cc) aircraft towing, taxing and others,
are to be employed;

(xxi) Operator's maintenance requirements, when applicable

A description of, or reference to, additional procedures for complying with an operator's maintenance procedures and maintenance control manual requirements;

(xxii) Contracting procedure

A description of, or reference to, a procedure for the contracting of activities to other approved aircraft maintenance organisations and organisations which are not approved by the Director or do not require an approval for the activities under consideration (e.g. plating and machining);

(xxiii) Human factors

A description of, or reference to, a procedure on how human factor principles will be observed during aircraft maintenance;

(xxiv) Notification of maintenance data inaccuracies

A description of, or reference to, procedure for notification of maintenance data inaccuracies and ambiguities to the type certificate holder, the customer, the Director and the AMO;

(xxv) Production planning procedures

A description of, or reference to, Procedures for production planning.

[1.1.3]*(c)* ***Line maintenance***

(i) Line maintenance control

A description of, or reference to, a procedure for the control of aircraft components, tools and equipment used during line maintenance;

(ii) Servicing, fuelling, **[etc]** de-icing during line maintenance

A description of, or reference to, a procedure for the servicing and fuelling done during line maintenance;

(iii) Control of defects and repetitive defects

A description of, or reference to, a procedure for the manner in which defects and repetitive defects are to be controlled;

(iv) Completion of technical log

A description of, or reference to, a procedure for the completion of aircraft technical log during line maintenance; and

(v) Return of defective parts removed from aircraft

A description of, or reference to, a procedure for the return to the stores of defective aircraft parts removed from the aircraft during line maintenance.

(2) The manual of procedure must contain the information to demonstrate that the organisation has the management, resources and procedures to comply with the requirements of the CAR Part 145.

(3) The manual of procedure may either be a self-contained document, or it may refer to other documents referred to in the manual of procedure which will be considered to be equally binding on the organisation.".

Amendment of Technical Standard 145.02.2

25. The following Technical Standard is hereby substituted for Technical Standard 145.02.2:

"145.02.2 QUALITY ASSURANCE SYSTEM

1. Minimum standards for a quality assurance system

(1) The quality assurance system required by CAR 145.02.2 shall include –

(a) Quality management policy

An AMO shall establish a formal, written quality management policy statement, constituting a commitment by the accountable manager as to what the quality system is intended to achieve;

(b) a documented audit program;
(c) procedures for–

(i) the conduct of audits;
(ii) management review;
(iii) continuous improvement, including error and non- compliance analysis;
(iv) document control;
(v) record control; and
(vi) communicating quality information to staff.

(d) Quality audit of the organisation

A description of, or reference to, a procedure for the quality audits to be performed on the organisation;

(e) Quality audit of aircraft

A description of, or reference to, a procedure for the quality audits to be done on the aircraft during maintenance work;

(f) Quality audit remedial action

A description of, or reference to, a procedure of remedial actions to be taken after quality audits;

(g) Management analysis and overview

A description of, or reference to, a procedure for bringing to the attention of management quality indicators, including but not limited to, audit reports,

progress on corrective action, accidents, incidents, occurrences, customer complaints and personnel reports, and documenting the appropriate action decided and implemented to maintain an adequate level of conformance to airworthiness requirements;

(h) Certifying personnel competence and training

A description of, or reference to, a procedure for the competence required of certifying personnel and the programme of training and recurrent training of certifying personnel;

(i) Certifying personnel records

A description of, or reference to, a procedure of the methods to be used for keeping technical records of certifying personnel;

(j) Quality audit personnel

A chart or a list indicating the qualifications and training of quality audit personnel;

(k) Qualifying inspectors and mechanics

A description of, or reference to, a procedure for the competence required of qualifying inspectors or mechanics, and a programme of training and recurrent training of personnel;

(l) Deviations

A description of, or reference to, a procedure to be used when permission is required to deviate from the requirements of the organisation's manual of procedures, or to deviate from specified aircraft or aircraft component maintenance tasks;

(m) Specialised activities

A description of, or reference to, a procedure for applying specialised activities such as welding and non-destructive testing;

(n) Control of manufacturers

When required, control of manufacturer's working teams based at the premises of the organisation, engaged in tasks which interface with activities included in the approval;

(o) Quality audit of sub-contractors

Quality audit of subcontractors or acceptance of accreditation by third parties, including but not limited to, non-destructive testing organisations approved by an appropriate authority; and

(p) Standard documents

Examples of standard documents used by the organisation which are associated with activities undertaken under the terms and conditions of the approval, such as:

(i) technical record control; or
(ii) rectification of defects.

(2) The objectives of the quality assurance system are –

(a) to monitor, and report to management, the level of compliance with the organisation's manual of procedure and airworthiness requirements;
(b) to correct any non-compliance identified and to implement actions to prevent the recurrence of such non-compliance; and
(c) to present to management for the purpose of review and implementing further corrective or preventive action, quality indicators such as audit reports, accidents, incidents, occurrences, customer complaints and personnel reports.

(3) Measures must be taken to ensure that the quality assurance system is understood, implemented and complied with at all levels.

(4) The quality assurance system must be documented in the manual of procedure referred to in CAR 145.02.1.

2. Quality assurance programme

(1) An AMO shall establish a quality assurance programme that includes all actions required to ensure that maintenance is conducted in accordance with all applicable requirements standards and operational procedures.

(2) The quality assurance programme shall include a training programme that provides the following –

(a) for those responsible for managing the quality system, receive training covering at least:

(i) an introduction to the concept of the quality system;
(ii) quality management;
(iii) the concept of quality assurance;
(iv) quality manuals;
(v) audit techniques;
(vi) reporting and recording; and
(vii) the way in which the quality system shall function in the organisation;

(b) for those involved in the inspection or audit functions, training covering at least:

(i) an introduction to the concept of the quality system;
(ii) the concept of quality assurance;
(iii) reporting and recording; and
(iv) audit techniques; and

(c) a briefing to the remainder of the employees consisting of background information about the quality assurance programme and their role in maximizing safety and efficiency in the organisation.

3. Structure

(1) The accountable manager shall appoint an accountable quality manager to manage the system and the quality manager shall have acquired the experience and qualifications requirements specified in technical standard 145.02.9.

(2) The quality manager may be permanently employed by the organisation or may be subcontracted.

(3) The quality manager shall have direct link to the accountable manager to discuss quality assurance matters when required.

(4) The roles and responsibilities of the quality manager and all other role players within the quality assurance system must be defined in writing.

(5) The responsibilities of the quality manager shall be independent from all other line functions within the organisation.

4. Documentation

(1) Except as provided in subsection (3), the quality assurance system shall be supported by a quality management manual (QMM), the contents of which shall include –

(a) the company's policy statement;
(b) the company's structure;
(c) the company's objectives;
(d) the roles, duties and responsibilities of the organisation's key personnel, including the accountable manager and quality manager. Where there is more than one quality manager, the mandate and specific functions of each and the interrelationship between them must be clearly identified; and
(e) the procedures and processes whether written or mapped; and
(f) the system of amendment and revision, incorporating –

(i) the procedure for amending the manual, including temporary revisions;
(ii) who is responsible for the issuance and insertion of amendments and revisions;
(iii) a record of amendments and revisions with insertion dates and effective dates;
(iv) a description of the system for the annotation of pages and their effective dates;
(v) a list of effective pages; and
(vi) a description of the distribution system for the manual, amendments and revisions.

(2) In addition, the following documentation shall be prepared and used within the quality assurance system –

(a) forms and checklists that have to be used in the execution of the processes;
(b) a list of records used in the system;
(c) a list of forms used in the system;
(d) a list of registers or software systems in use as support to the system; and
(e) a list of external documents that impact on the system.

(3) The information required by subsection (1) may be included in the organisation's safety management manual if the company's size and complexity are such that a separate manual is not required.

5. Auditor's qualifications

(1) The auditors engaged by an organization to ensure quality assurance of the processes of the organization

(a) quality assurance personnel are required to satisfy predetermined qualification criteria as detailed in this section in order to undertake the duties required by the Regulations. The quality personnel or manager shall have completed an accredited course in Civil Aviation Regulations and Technical Standards;

(b) a minimum of three years' experience in the aviation industry to include expertise in one of the following areas:

(i) aircraft operations;
(ii) airworthiness of aircraft;
(iii) aircraft accident and incident investigation;
(iv) aircraft and aircraft products maintenance;
(v) manufacturing or aircraft design;

(c) a recognized certificate of competency in quality assurance system, issued by an approved ATO or any accredited institution;

(d) a certificate in Internal Auditing or Third party Auditing, issued by an approved ATO or any accredited institution

(e) any aviation related course whose contents include a comprehensive quality assurance system training; and

(f) human factor course.

6. Audits carried out in foreign States

In exceptional cases where there are warzones, civil wars, difficult to reach or risky areas, an auditors may delegate the responsibility to suitably qualified foreign quality assurance auditors, based in that foreign country, to carry out the audit on their behalf. This authorization shall be issued and documented by the quality manager subsequent to obtaining authorization from the Director.

7. Audit scope

(1) An organisation's quality manager is required to monitor compliance to operational procedures designed by the organisation in order to ensure that quality requirements and acceptable practices requirements have been complied with.

(2) The quality manager shall monitor the following –

(a) the organisation's plans and objectives;
(b) mass, balance and aircraft loading;
(c) instruments and safety equipment;

(d) manuals, logs and records;
(e) aircraft maintenance or operations interface;
(f) use of the MEL;
(g) maintenance programmes and continued airworthiness;
(h) airworthiness directives management;
(i) maintenance accomplishment;
(j) defect deferral;
(k) operational control personnel;
(l) dangerous goods;
(m) security;
(n) training; and
(o) safety management system (in the absence of a safety manager).

8. Audit scheduling

(1) A quality assurance programme shall include a defined audit schedule and a periodic review cycle, area by area, with consideration being given to the following factors:

(a) The schedule shall be flexible and allow unscheduled audits when trends are identified. Once approved, all audits of the organization shall be conducted in accordance with the schedule unless an extension to the audit period is accepted by the Director;

(b) The organisation may decrease the frequency of audits unless accepted by the Director;

(c) Follow-up audits shall be scheduled when necessary to verify that corrective action was carried out and that it was effective; and

(d) the organisation's defined audit schedule can be affected by significant changes to the management, organisation, operation or technologies, as well as changes to the regulatory requirements, resulting in the requirement for an ad hoc audit.

9. Monitoring

(1) The organization shall continuously monitor its quality assurance programme by keeping abreast of the activities within the organisation.

(2) The organisation shall establish and publish a procedure to monitor regulatory compliance on a continuing basis.

(3) Any non-compliance identified as a result of monitoring shall be communicated to the manager responsible for taking corrective action or, if appropriate, the accountable manager. Such non-compliance shall be recorded, for the purpose of further investigation, in order to determine the cause and to enable the recommendation of appropriate corrective action.

10. Corrective action

(1) The quality assurance programme shall include procedures to ensure that corrective actions are taken in response to findings.

(2) The accountable manager shall have the ultimate responsibility for ensuring that the corrective action has been taken in compliance with the standards required by the Director.

(3) Once a quality inspection or audit is finalised –

(a) the organisation shall establish –

(i) the seriousness of any findings and the need for immediate corrective action;
(ii) the origin of the finding;
(iii) the corrective actions which are required to ensure that the non-compliance does not recur;
(iv) a schedule for corrective action;
(v) the identification of individuals or departments responsible for implementing the corrective action; and
(vi) allocation of resources by the accountable manager, where appropriate;

(b) the quality manager shall –

(i) verify that corrective action is taken by the manager responsible in response to any finding of non-compliance;
(ii) monitor the implementation and completion of corrective action;
(iii) provide management with an independent assessment of corrective action, implementation and completion; and
(iv) evaluate the effectiveness of corrective action through the follow-up process.

11. Follow-up

(1) The quality manager shall ensure that each finding of non-compliance has been resolved satisfactorily and that the resultant solution is effectively implemented, such that a re-occurrence of the situation leading to the non-compliance is not or is highly unlikely to recur.

(2) The follow-up shall include at least an inspection of the area identified as being non-compliant as well as an in-depth audit to ensure a satisfactory resolution of the issue.

12. Management evaluation

(1) The management of the organisation shall conduct a comprehensive, systematic, documented review of the quality system, operational policies and procedures and shall consider –

(a) the results of quality inspections, audits and any other indicators; and
(b) the overall effectiveness of the management organisation in achieving stated objectives.

(2) The management evaluation shall identify and correct trends and prevent, where possible, future non-conformities. Conclusions and recommendations made as a result of an evaluation shall be submitted in writing to the responsible manager for action.

(3) The accountable manager shall decide upon the frequency, format and structure of management evaluation activities of the organisation.

13. Recording

(1) An AMO shall maintain accurate, complete and readily accessible records documenting the results of the quality assurance programme in order to enable the organisation to analyse and determine the root causes of non-compliances.

(2) The following records shall be retained for a period of at least five years –

(a) audit schedules;
(b) quality inspection and audit reports;

(c) responses to findings;
(d) corrective-action reports;
(d) follow-up and closure reports; and
(e) management evaluation reports.

(3) In the event that the AMO has sub-contracted activities to a subcontractor, the quality assurance programme of the AMO shall include an examination of such sub-contractors.".

Amendment of Technical Standard 175.02.2

27. Technical Standard 175.02.2 is hereby amended by –

(a) the substitution for the heading thereof of the following heading:

"175.02.2 QUALITY [MANAGEMENT] ASSURANCE SYSTEM"

(b) the addition in section 1 after sub-section (3) of the following sub-section:

1. Minimum standards

(4) The quality management system established should follow the International Organization for Standardization (ISO) 9000 series of quality assurance standards, and be certified by an appropriate organisation.".

Amendment of Technical Standard 175.03.2

28. Technical Standard 175.03.2 is hereby amended by the insertion of the following subsection after subsection (3):

"175.03.2 COLLECTION OF INFORMATION

3. Minimum quality requirements

(4) Data quality specifications

(a) Accuracy

The order of accuracy for aeronautical data shall be as specified in Annex 11.

(b) Resolution

The order of publication resolution of aeronautical data shall be as specified in Annex 15, Appendices 1 and 7.".

Amendment of Technical Standard 175.03.3

29. Technical Standard 175.03.3 is hereby amended by –

(a) the addition in subsection (2) of section 2 after paragraph (e) of the following paragraph:

(2) The certificate holder shall, in addition to the requirement prescribed in **[paragraph]** subsection (1) –

"(f) be subject to bilateral agreement between ICAO Contracting States if exchange of more than one copy of the elements of the IAIP and other air navigation documents, including those containing air navigation legislation and regulations is required.";

(b) the addition in section 3 of paragraphs (e) and (f):

"3. Components of an IAIP

3.1 AIP

(3) The AIP shall include at an appropriate location –

(e) the aeronautical charts when available for international aerodromes or heliports, alternatively, the aeronautical charts shall be distributed separately to recipients of the AIP;

(f) charts, maps or diagrams when appropriate, to complement or as a substitute for the tabulations or text of AIP.";

(c) the addition in subsection 3.3 of the following subsection (4):

"3.3 AIP Supplements

(4) When an error occurs in an AIP Supplement or when the period of validity of an AIP Supplement is changed, a new AIP Supplement shall be published as a replacement.".