MAR-FCL 3

Military Aviation Requirements - Flight Crew Licensing Part 3 (Medical)

STATUS PAGE

Issue date	Version	
01-09-2008	1 (original issue)	Administrative correction - Issue date in line with Staatscourant 2008 nr. 196
30-11-2010	2	Guidance Material added. Issue date in line with Staatscourant 2010 nr. 19760
16-01-2012	2	Change of MAR-FCL 3.005 in line with BS2011011218 d.d. 4-April-2011
18-08-2016	2.1	Administrative correction - Status page to show correct issue dates and MAR-FCL 3.240 corrected reference to appendix 18
19-12-2018	3.0	Intensively revised edition

Acceptable Means of Compliances (AMC) and Guidance Material (GM) have been eliminated and a reference is entered when AMC of GM is available. The AMC and GM are published as separate documents.

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REQUIREMENTS

ABBREVIATIONS

AeMC	Aeromedical Centre
AMC	Acceptable Means of Compliance
AME	Authorised Medical Examiner
AMS	Aeromedical Specialist
ATC	Air Traffic Control
FCL	Flight Crew Licensing
F/E	Flight Engineer
FS	FS
IFR	Instrument Flight Rules
JAA	Joint Aviation Authorities
JAR	Joint Aviation Requirements
MAA	Military Aviation Authority
MAR	Military Aviation Requirements
MMC	Military Medical Certificate
OML	Operational Multi Pilot Limitation
OSL	Operational Safety Pilot Limitation
PIC	Pilot-In-Command
PICUS	Pilot-in-Command Under Supervision
VFR	Visual Flight Rules

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SUBPART A – GENERAL REQUIREMENTS

MAR-FCL 3.005 Applicability and entry into force

a. MAR-FCL 3 prescribes requirements applicable to:

1. persons under training for or acting as crew members of Netherlands military registered manned aircraft (reference GM MAR-FCL 3.025.a);

2. persons under training for or acting as controllers (reference GM MAR-FCL 3.025.a);

3. the Aeromedical Center (AeMC), the Centre for Man and Aviation (Centrum voor Mens en Luchtvaart), conducting medical examinations required for the initial issue, revalidations or renewal of a Netherlands Military Medical Certificate (MMC);

4. persons acting as Flight Surgeon (FS) during medical examinations required for the initial issue, revalidation or renewal of a Netherlands MMC;

5. persons acting as Aeromedical Specialist (AMS) during medical examinations required for the initial issue, revalidation or renewal of a Netherlands MMC;

6. persons under training for or acting as crew members of Netherlands military registered remotely piloted aircraft (reference GM FCL 3.025.a).

b. This regulation shall enter into force on 1-07-2019.

MAR–FCL 3.010 Aeromedical Centres (AeMCs)

a. AeMCs will be designated and authorized, or re-authorized, at the discretion of the Military Aviation Authority. An AeMC shall be:

1. within the national boundaries of the Netherlands and attached to or in liaison with a designated hospital or a medical institute;

2. engaged in clinical aviation medicine and related activities;

3. headed by a senior FS, responsible for coordinating assessment results and shall have a staff consisting of FSs with advanced training and experience in aviation medicine;

4. equipped with medico-technical facilities for extensive aeromedical examinations,

5. in compliance with the requirements listed in MAR-FCL 3, Subpart E, Organisational Requirements.

b. The Military Aviation Authority will determine the required number of AeMCs.

MAR–FCL 3.015 Flight Surgeon (FS)

(See GM to MAR-FCL 3.015)

a. The Military Aviation Authority will designate and authorize FSs, qualified and licenced in the practice of medicine.

b. A FS performing a medical examination for a MMC, shall be allowed access to any prior aero medical documentation.

c. FSs shall be qualified and licenced in the practice of medicine and shall have received training in aviation medicine. They should acquire practical knowledge and experience of the conditions in which the holders of licences and ratings carry out their duties.

d. Aviation medicine training for the FS:

1. BRONZE WING FS: Basic training in Aviation Medicine.
   i. Completed the General Military Physician Course
   ii. Completed a Basic FS Course (See GM to MAR-FCL 3.015).
      a. Basic training for physicians responsible for the medical selection and surveillance of flying personnel and air traffic and fighter controllers.
      b. The course shall consist of either the Aerospace Medical Primary Course of German Airforce at Furstenfeldbruck, the USAF or the US Navy or any other relevant training in aviation medicine at the discretion of the AMS.
      c. the course shall consist of at least 150 hours of lectures and practical training;
   iii. Followed an instruction about aeromedical examinations under the supervision of the AMS

2. GOLDEN WING FS:
   i. Practical training: the physician shall work for at least 12 months as a Bronze Wing FS, during which time he completed at least 10 aeromedical examinations per year;
   ii. Flight familiarization programme, consisting of lectures and flying hours;
   iii. A scientific publication: the physician shall publish a (scientific) article or give a presentation in the field of Aviation Medicine.
   iv. Completed Training as Military Aeromedical Examiner (Mil-AME)
      a. Following lectures about the MAR-FCL, physiology
      b. Completed with an exam

3. SENIOR FS:
   i. Basic and Advanced training as Authorized Medical Examiner in accordance with EASA regulations EU-FCL MED.D.020 and AMC1 MED.D.010;
   ii. Advanced training in Aviation Medicine for physicians in leading positions and responsible for decision making and rulemaking.
      a. The training consists of participating in the advanced courses (e.g. the AAMIMO or the RAM course of the USAF or the AvMed Course of the European Air Group).
      b. The training consists of at least 200 hours of lectures and practical work, training attachments and visits to Aeromedical Centers, Clinics, Research, ATC, Simulator, Airport and industrial facilities.

e. Authorization and re-authorization

1. From the moment a FS has completed the Military Aeromedical Examiner (Mil-AME) Training, he will be authorized to perform medical examinations.
2. A FS will be authorized as a Mil-AME for a period not exceeding three years. Authorization to perform medical examinations may be for Class 1, Class 2 or Class 3 or all Classes at the discretion of the AMS.
3. To maintain proficiency and retain authorization a FS should complete at least 10 aeromedical examinations each year.
4. For re-authorization after 3 years, the FS shall have completed 30 aeromedical examinations and shall also have undertaken relevant training during the period of authorization. The AMS oversees the re-authorisation of the FSs. (See GM to MAR-FCL 3.015)
5. During the period of authorization, a FS is required to attend a minimum of 20 hours Refresher Training in Aviation Medicine, as approved by the AMS. Scientific meetings, congresses and flight deck experience may be approved by the AMS for this purpose, for a specified number of hours. (See GM to MAR-FCL 3.015)
6. A minimum of 6 hours must be under the direct supervision of the AMS (e.g. Aeromedical Board, FS meetings).

f. The Military Aviation Authority may at any time revoke an authorization it has issued in accordance with the requirements of MAR-FCL 3, if it is established that a FS has not met, or no longer meets, the requirements of MAR-FCL 3.

g. FSs appointed prior to the implementation of MAR-FCL 3 are required to attend training in the requirements and documentation of MAR-FCL part 3 but meanwhile may continue to exercise the privileges of their authorization without completion of MAR-FCL 3.015 at the discretion of the AMS.

MAR–FCL 3.020 Aeromedical Specialist (AMS)

a. The Netherlands Ministry of Defense will include within its Military Aviation Authority one physician experienced in the practice of aviation medicine. Such a physician shall form part of the Military Aviation Authority. He or she shall be known as the Aeromedical Specialist (AMS).

b. The AMS must have a full registration as a medical specialist.

c. Medical Confidentiality shall be respected at all times. The Military Aviation Authority will ensure that all oral or written reports and electronically stored information on medical matters of licence holders/applicants are made available only to the AMS or the AeMC and for the purpose of completion of a medical assessment. The applicant or his physician shall have access to all such documentation in accordance with national law.

MAR–FCL 3.025 Military Medical Certificates (MMC)

(See GM to MAR-FCL 3.025.a and b.)

a. In order to apply for or to exercise the privileges of a licence, the applicant or the holder shall hold a MMC issued in accordance with the provisions of MAR–FCL 3 and as applicable to the privileges of the licence.

b. Depending on the duty the applicant will be performing, he needs a MMC from one of the 3 medical classes. The duties with the respective classes can be found in GM MAR-FCL 3.025.a.

c. Initial, revalidation and renewal medical examinations for MMCs shall be carried out at the Center for Man and Aviation (AeMC)

d. Periodic Requirements. For a summary of special investigations required at initial, routine revalidation or renewal, and extended revalidation and renewal examination see GM to MAR-FCL 3.095.b.

e. The MMC shall contain the following information:
   1. reference number (as designated by the Military Aviation Authority);
   2. class of certificate;
   3. full name;
   4. date of birth;
   5. nationality;
   6. expiration date of the MMC;
   7. date of previous (extended) medical examination;
   8. date of last electrocardiography;
   9. date of last audiometry;
   10. limitations;
   11. AMS name, number and signature;
   12. date of examination;
   13. signature of applicant.

f. Following a medical initial, revalidation or renewal examination by the FS, he will issue an advice to the AMS considering the fitness of the applicant. The AMS will issue the MMC, with or without limitations (as justified on medical grounds) and sent the MMC to the applicant.

g. After completion of the medical examination the applicant shall be advised whether fit, unfit or referred to the AMS. The FS shall inform the applicant of any condition(s) (medical, operational or otherwise) that may restrict flight training or the privileges of any licence issued.

h. The holder of a MMC shall present it to the FS at the time of the revalidation or renewal of that certificate.

i. When a review has been performed and a MMC has been issued in accordance with MAR–FCL 3.090 this fact and any limitation that may be required shall be stated on the MMC.

j. An applicant for, or holder of a MMC, who has been denied a MMC will be informed of this in writing by the FS or the AMS. Information will be provided about his right for a review in accordance with MAR-FCL 3.090.

MAR–FCL 3.030 Period of validity of military MMC

a. A MMC shall be valid from the date of the initial medical examination and for:

1. Class 1 for a period of 12 months: for holders who have reached the age of 40, the period is reduced to 6 months, with the exception of flight crew for KDC-10 and Gulfstream (G-IV);

2. Class 2 for a period of 12 months;

3. Class 3 for a period of 24 months: for holders who have reached the age of 40, the period is reduced to 12 months. A MMC issued prior to the holder's 40th birthday will not be valid after his 41st birthday;

b. Revalidation.
1. If the holder of a MMC comes for a revalidation of the MMC up to 45 days prior to the expiration date, the expiration date of the new MMC is calculated by adding the period stated in a.1. 2. or 3. as applicable, to the expiration date of the previous MMC.

2. If the holder of a MMC comes for a revalidation of the MMC more than 45 days prior to the expiration date, the expiration date of the new MMC is calculated by adding the period stated in a.1. 2. or 3. as applicable, to the date of the medical examination.

3. A MMC revalidated prior to its expiration date becomes invalid once a new certificate has been issued.

c. If the holder of a MMC comes for a renewal of the MMC after the expiration date of the last MMC, the expiration date will be calculated in accordance with paragraph a. with effect from the date of the medical examination.

d. The requirements to be met for the revalidation or renewal of MMCs are the same as those for the initial issue of the certificate, except where specifically stated otherwise.

e. If the holder of a MMC allows his MMC to expire by more than five years, renewal shall require an initial aeromedical examination, performed at an AeMC (Center for Man in Aviation) which has obtained his relevant medical records.

f. Reduction in the period of validity. The period of validity of a MMC may be reduced by a FS in consultation with the AMS when clinically indicated.

g. In the case of long-term deployment of a crew member to an area without proper medical facilities, the period of validity of a MMC may be extended by the AMS with a maximum of 2 months.

i. When the FS or AMS has reasonable doubt about the continuing fitness of the holder of a MMC, the AMS may require the holder to submit for further examination, investigation or tests which will be done by a FS or medical specialists. The reports shall be forwarded to the AMS.

MAR–FCL 3.035 Requirements for medical assessments

a. An applicant for, or holder of, a MMC issued in accordance with MAR-FCL 3 shall be free from:
   1. any abnormality, congenital or acquired;
   2. any active, latent, acute or chronic disability; or
   3. any wound, injury or sequela from operation;
   which could bring on a degree of functional incapacity likely to interfere with the safe operation of an aircraft or with the safe performance of duties.

b. An applicant for, or holder of, a MMC issued in accordance with MAR-FCL 3 shall not suffer from any disease or disability which could render him likely to become suddenly unable either to operate an aircraft or its systems safely or to perform assigned duties safely.

MAR–FCL 3.040 Responsibilities of the applicant

a. The applicant for or holder of a MMC shall produce proof of identification and provide to the FS a signed declaration of medical facts concerning personal, family and hereditary history.
   The declaration shall also include a statement of whether the applicant has previously undergone such an examination and, if so, the result thereof. The applicant shall be made aware by the FS of the necessity for giving a statement that is as complete and accurate as possible.

b. Any declaration made with the intent to deceive shall be reported to the AMS. Upon receipt of such information the AMS shall take such action as it considers appropriate.

MAR–FCL 3.045 Limitations
(See GM to MAR-FCL 3.045)

a. If the medical requirements prescribed in MAR-FCL 3 for a particular licence are not fully met by an applicant, the appropriate MMC shall not be issued, revalidated or renewed by the AeMC or FS, but the decision shall be referred to the AMS.
   If there are provisions in MAR-FCL 3 that the applicant under certain conditions (in accordance with the Appendices to Subparts B, C and D) may be assessed as fit with a limitation, the AMS may do so.

b. Limitations may be applied to the MMC and removed from the MMC by the AMS only, upon advice of the FS.

MAR–FCL 3.050 Delegation of fit assessment
(See GM to MAR-FCL 3.050)

a. The AMS may issue, revalidate or renew a MMC after due consideration has been given to the requirements and guidance material, expert aeromedical opinion (e.g. Aeromedical Board) and, if appropriate, to the opinion of other relevant experts familiar with the operational environment and to:
   1. the medical deficiency in relation to the operating environment;

   2. the ability, skill and experience of the applicant in the relevant operating environment;

3. a medical flight test; or

4. the requirements for the application of a limitation, to the MMC and licence. (See MAR-FCL 3.045 and GM to MAR-FCL 3.045)

b. Where the issue of a certificate will require more than one limitation, the additive and interactive effects upon flight safety must be considered by the AMS before a certificate can be issued.

c. The AMS will constitute a secondary review procedure, with independent medical advisers, experienced in the practice of aviation medicine, to consider and evaluate contentious cases. (See GM to MAR-FCL 3.050)

MAR–FCL 3.055 Reserved

MAR–FCL 3.060 Reserved

MAR–FCL 3.065 Reserved

MAR–FCL 3.070 Decrease in medical fitness

a. The holder of a MMC shall be mentally and physically fit to safely exercise the privileges of the applicable licence.

b. Holders of MMCs shall not exercise the privileges of their licences or related ratings at any time when they are aware of any decrease in their medical fitness which might render them unable to safely exercise those privileges.

c. Holders of MMCs shall not take any prescription or non-prescription medication or drug, or undergo any other treatment, unless they are completely sure that the medication, drug or treatment will not have any adverse effect on their ability to perform safely their duties. If there is any doubt, advice shall be sought from FS or the AMS.

d. Holders of MMCs shall, without undue delay, seek the advice of a FS or the AMS when becoming aware of:
1. consultation of a physician, not being a FS; or
2. hospitalization or admission to a clinic; or
3. surgical operation or invasive procedure; or
4. the regular use of medication.

e. 1. In the following cases presented by a holder of a MMC to the FS:
   i. any significant personal injury resulting in the inability to function as a member of a flight crew;
   ii. any illness resulting in the inability to function as a member of a flight crew throughout a period of 21 days or more;
   iii. pregnancy.

   The FS shall inform the AMS in writing. The MMC shall be deemed to be suspended upon the occurrence of such injury or the elapse of such period of illness or the confirmation of the pregnancy.

2. In the case of injury or illness the suspension shall be lifted upon the holder being medically examined under arrangements made by the AMS and being pronounced fit to function as a member of the flight crew.

3. In the case of pregnancy, the suspension may be lifted by the FS in consultation with the AMS for such a period and subject to such conditions as he deems appropriate. (See MAR–FCL 3.190.c.; 3.310.c. and 3.435.b.) If a FS assesses a pregnant MMC Class 1 holder as fit, a OML or SSL for Flight Engineer shall be applied.
   After the pregnancy has ended and the holder had been medically assessed as fit by the FS, the AMS may remove the relevant limitation upon advice of the FS.

MAR–FCL 3.075 Use of Medication or other treatments
(See GM to MAR-FCL 3.075)

a. The holder of a MMC who is taking any prescription or non-prescription medication or who is receiving any medical, surgical, or other treatment shall comply with the requirements of MAR-FCL 3.070.

b. All procedures requiring the use of a general or spinal anaesthetic shall be disqualifying for at least 48 hours.

c. All procedures requiring local or regional anaesthetic shall be disqualifying for at least 12 hours.

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SUBPART B – CLASS 1 MEDICAL REQUIREMENTS

MAR-FCL 3.130 Cardiovascular system – Examination

a. An applicant for or holder of a Class 1 MMC shall not possess any abnormality of the cardiovascular system, congenital or acquired, which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

b. A standard 12-lead resting electrocardiogram (ECG) and report are required at the examination for first issue of a MMC, and at all revalidation or renewal examinations thereafter and on clinical indication.

c. A physical exercise test in compliance with military employments regulations is required at the initial examination.

d. Exercise electrocardiography (symptom limited to Bruce Stage IV or equivalent) is required at the first examination after the 40th birthday, then every 3 years until age 50, then yearly thereafter and when clinically indicated in compliance with paragraph 1 of Appendix 1 to Subpart B.

e. Reporting of resting and exercise electrocardiograms shall be carried out by the FS or other specialists acceptable to the AMS.

f. Estimation of serum lipids, including cholesterol and HDL Cholesterol, is required to facilitate risk assessment at the examination for first issue of a MMC, and at all revalidation or renewal examinations thereafter and on clinical indication. (See paragraph 2 of Appendix 1 to Subpart B)

Appendix 1 to Subpart B Cardiovascular system

(See MAR–FCL 3.130 through 3.150)

1. Exercise electrocardiography shall be required:
   a. when indicated by signs or symptoms suggestive of cardiovascular disease;
   b. for clarification of a resting electrocardiogram;
   c. at the discretion of an aeromedical specialist acceptable to the AMS;

2. Serum lipid estimation is case finding and significant abnormalities shall require review, investigation and supervision by the AeMC or FS in conjunction with the AMS.
   An accumulation of risk factors (smoking, diabetes, family history, lipid abnormalities, hypertension, metabolic syndrome etc.) shall require cardiovascular evaluation by the AeMC or FS in conjunction with the AMS, and cardiologist, acceptable to the AMS.

MAR–FCL 3.135 Cardiovascular system – Blood pressure

a. The blood pressure shall be recorded with the technique given in paragraph 3 of Appendix 1 to Subpart B at each examination.

b. When the blood pressure at initial examination consistently exceeds 140 mmHg systolic and/or 90 mmHg diastolic, with or without treatment, the applicant shall be assessed as unfit. At revalidation or renewal, a blood pressure of 141-160 mmHg systolic and/or 91-95 mmHG diastolic with or without treatment may be acceptable to the AMS. The diagnosis of hypertension shall require review of other potential vascular risk factors. (See paragraph 4 of Appendix 1 to Subpart B.)

c. Treatment for the control of blood pressure shall be compatible with the safe exercise of the privileges of the applicable licence(s) and be compliant with paragraph 5 of Appendix 1 to Subpart B. The initiation of medication shall require a period of temporary suspension of the MMC to establish the absence of significant side effects.

d. Applicants with symptomatic hypertension or with comorbidity shall be assessed as unfit and may be referred to a specialist acceptable to AMS. (See paragraph 6 of Appendix 1 Subpart B.)

e. Applicants with symptomatic hypotension shall be assessed as unfit.

Appendix 1 to Subpart B Cardiovascular system

(See MAR–FCL 3.130 through 3.150)

3. The systolic pressure shall be recorded at the appearance of the Korotkoff sounds (phase I) and the diastolic pressure at their disappearance (phase V). The blood pressure should be measured twice. Half hour tension recording may be applied, automatic blood pressure equipment acceptable to the AMS shall be used. If the blood pressure is raised and/or the resting heart rate is increased, further observations should be made during the assessment.

4. A candidate with a systolic blood pressure between 140-160 mmHg and/or a diastolic blood pressure between 90-95 mmHg, shall undergo observations on a regular basis (monthly). The results of these observations shall be part of the revalidation or renewal medical examination.

5. Anti-hypertensive treatment shall be agreed by the AMS. Drugs acceptable to the AMS may include:
   a. non-loop diuretic agents;
   b. certain (generally hydrophilic) beta-blocking agents;
   c. ACE Inhibitors;
   d. angiotensin II AT1 blocking agents (the sartans);
   e. slow channel calcium blocking agents.

   At commencement of anti-hypertensive treatment, the individual will be assessed as temporarily unfit because of potential side-effects, until the blood pressure is satisfactory controlled without side-effects.

6. Symptomatic hypertension or hypertension with comorbidity may require an OML limitation

MAR–FCL 3.140 Cardiovascular system – Coronary artery disease

a. Applicants with suspected coronary artery disease shall be investigated. Those with asymptomatic minor coronary artery disease, requiring no treatment may be assessed as fit by the AMS if the investigations in paragraph 7 of Appendix 1 to Subpart B are completed satisfactorily.

b. Applicants with symptomatic coronary artery disease, or with cardiac symptoms controlled by medication, shall be assessed as unfit.

c. After an ischemic cardiac event (defined as a myocardial infarction, angina, significant arrhythmia or heart failure due to ischemia, or any type of cardiac revascularization) a fit assessment for initial applicants is not possible. At revalidation or renewal, a fit assessment may be considered by the AMS if the investigations in paragraph 8 of Appendix 1 to Subpart B are completed satisfactorily.

Appendix 1 to Subpart B Cardiovascular system

(See MAR–FCL 3.130 through 3.150)

7. In suspected asymptomatic coronary artery disease, or peripheral arterial disease, or BMI >30 with an increased cardiovascular risk (See MAR-FCL 3.170 Metabolic, nutritional and endocrine disease), exercise electrocardiography shall be required followed, if necessary, by further tests (myocardial perfusion scanning, stress echocardiography, coronary angiography or equivalent investigations acceptable to the AMS) which shall show no evidence of myocardial ischemia or significant coronary artery stenosis.

8. After an ischemic cardiac event, including revascularization, or peripheral arterial disease, applicants without symptoms shall have reduced any vascular risk factors to an appropriate level. Medication, when used only to control cardiac symptoms, is not acceptable. All applicants should be on acceptable secondary prevention treatment.

   A coronary angiogram obtained around the time of, or during, the ischemic cardiac event shall be available. A complete and detailed clinical report of the ischemic event, the angiogram and any operative procedures shall be available to the AMS.

   There shall be no stenosis more than 50% with functional flow limitation in any major untreated vessel, in any vein or artery graft or at the site of an angioplasty/stent, except in a vessel leading to an infarct. More than two stenoses between 30% and 50% with functional flow limitation within the vascular tree should not be acceptable.

   The whole coronary vascular tree shall be assessed as satisfactory by a cardiologist acceptable to the AMS, and particular attention should be paid to multiple stenoses and/or multiple revascularizations.

   An untreated stenosis greater than 30% with functional flow limitation in the left main or proximal left anterior descending coronary artery should not be acceptable.

Appendix 1 to Subpart B Cardiovascular system

(See MAR–FCL 3.130 through 3.150)

8. At least 6 months from the ischemic cardiac event, including revascularization, the following investigations shall be completed:
    a. an exercise ECG (symptom limited to Bruce Stage IV, or equivalent), showing no evidence of myocardial ischaemia nor rhythm disturbance;
    b. an echocardiogram (or equivalent test acceptable to the AMS) showing satisfactory left ventricular function with no important abnormality of wall motion (such as dyskinesia or akinesia) and a left ventricular ejection fraction of 50% or more;
    c. in cases of angioplasty/stenting, a myocardial perfusion scan or stress echocardiography (or equivalent test acceptable to the AMS) which shall show no evidence of reversible myocardial ischaemia. If there is any doubt about myocardial perfusion in other cases (infarction or bypass grafting) a perfusion scan will also be required;
    d. further investigations, such as a 24-hour ECG, shall be necessary to assess the risk of any significant rhythm disturbance.

    Follow-up shall be yearly (or more frequently if necessary) to ensure that there is no deterioration of cardiovascular status. It shall include a review by a specialist acceptable to the AMS, exercise ECG and cardiovascular risk assessment. Additional investigations may be required by the AMS. After coronary revascularisation, a myocardial perfusion scan (or equivalent test acceptable to the AMS) shall be performed if there is any indication, and in all cases within five years from the procedure.

    In all cases coronary angiography, or an equivalent test acceptable to the AMS, shall be considered at any time if symptoms, signs or non-invasive tests indicate cardiac ischaemia. Successful completion of the six-month review will allow for a fit assessment with an OML limitation for applicants.

MAR–FCL 3.145 Cardiovascular system – Rhythm/conduction disturbances

a. Applicants with significant disturbance of supraventricular rhythm, including sinoatrial dysfunction, whether intermittent or established, shall be assessed as unfit. A fit assessment may be considered by the AMS in compliance with paragraph 9 of Appendix 1 to Subpart B.

b. Applicants with asymptomatic sinus bradycardia or sinus tachycardia may be assessed as fit in the absence of underlying abnormality.

c. Applicants with asymptomatic isolated uniform supraventricular or ventricular ectopic complexes need not be assessed as unfit. Frequent or complex forms require full cardiological evaluation in compliance with paragraph 9 of Appendix 1 to Subpart B.

Appendix 1 to Subpart B Cardiovascular system

(See MAR–FCL 3.130 through 3.150)

9. Any significant rhythm or conduction disturbance requires evaluation by a cardiologist acceptable to the AMS and appropriate follow-up in the case of a fit assessment.
   a. Such evaluation shall include:
      1. Exercise ECG to the Bruce protocol or equivalent. The test should be to maximum effort or symptom limited. Bruce Stage IV shall be achieved and no significant abnormality of rhythm or conduction, nor evidence of myocardial ischaemia shall be demonstrated. Withdrawal of cardioactive medication prior to the test should be considered.
      2. 24-hour ambulatory ECG which shall demonstrate no significant rhythm or conduction disturbance.
      3. 2D Doppler echocardiogram which shall show no significant selective chamber enlargement, or significant structural, or functional abnormality, and a left ventricular ejection fraction of at least 50%.
   b. Further evaluation may include:
      1. Repeated 24-hour ECG recording;
      2. Electrophysiological study;
      3. Myocardial perfusion scanning, or equivalent test;
      4. Cardiac MRI or equivalent test;
      5. Coronary angiogram or equivalent test (see Appendix 1 paragraph 6).

MAR–FCL 3.145 Cardiovascular system – Rhythm/conduction disturbances

d. In the absence of any other abnormality, applicants with incomplete bundle branch block or stable left axis deviation may be assessed as fit.

e. Applicants with complete right bundle branch block require cardiological evaluation on first presentation and subsequently in compliance with appropriate items in paragraph 9 of Appendix 1 to Subpart B.

f. Applicants with complete left bundle branch block shall be assessed as unfit. A fit assessment may be considered by the AMS in compliance with paragraph 9 of Appendix 1 to Subpart B.

g. Applicants with first degree and Mobitz type 1 A-V block may be assessed as fit in the absence of underlying abnormality. Applicants with Mobitz type 2 or complete A-V block shall be assessed as unfit. A fit assessment may be considered by the AMS in compliance with paragraph 9 of Appendix 1 to Subpart B.

h. Applicants with broad and/or narrow complex tachycardias shall be assessed as unfit. A fit assessment may be considered by the AMS subject to compliance with paragraph 9 of Appendix 1 to Subpart B.

Appendix 1 to Subpart B Cardiovascular system

(See MAR–FCL 3.130 through 3.150)

9. c. AMS Assessment
    1. Atrial fibrillation/flutter
        i. For initial applicants a fit assessment shall be limited to those with a single episode of arrhythmia without dizziness which is considered by the AMS to be unlikely to recur. After a single period of atrial fibrillation/flutter with dizziness, an OML and 4G limitation shall be applied for 2 years.
        ii. Revalidation/renewal shall be determined by the AMS. In the case of paroxysmal atrial fibrillation/flutter, an OML and 4G limitation shall be applied permanently.
        iii. In the case of chronic atrial fibrillation/flutter, an OML and a 4G limitation shall be applied permanently.
        iv. After a pulmonary vein isolation or comparable procedure aimed at the treatment of the atrial fibrillation, applicants or holders of a MMC are unfit to fly for 6 months. Thereafter, an OML for a period of at least 6 months should be applied. A fit to fly assessment may be considered following a cardiac evaluation satisfactory to the AMS. A yearly cardiologic evaluation shall be necessary (SIC limitation).
    2. Complete right bundle branch block
        i. For initial or revalidation/renewal certification a fit assessment may be considered by the AMS if the applicant is under age 40 years.
        ii. If over age 40 years applicants should demonstrate a period of stability (= clinically stable and no progression of the conduction disturbance) of 12 months. In this period an OML should be applied. After a 1-year period of stability a fit assessment without OML may be considered.
    3. Complete left bundle branch block
        Investigation of the coronary arteries is necessary in applicants.
        Initial applicants should demonstrate a 3-year period of stability (= clinically stable and no progression of the conduction disturbance). Only after a 3-year period of stability may they be assessed as fit.
        For revalidation/renewal applicant should demonstrate a period of stability (= clinically stable and no progression of the conduction disturbance) of 3 years. In this period an OML should be applied. After a 3-year period of stability a fit assessment without an OML may be considered.

MAR–FCL 3.145 Cardiovascular system – Rhythm/conduction disturbances

i. Applicants with ventricular pre-excitation shall be assessed as unfit. A fit assessment may be considered by the AMS subject to compliance with paragraph 9 of Appendix 1 to Subpart B.

j. Applicants with an endocardial pacemaker shall be assessed as unfit. A fit assessment may be considered by the AMS subject to compliance with paragraph 9 of Appendix 1 to Subpart B.

k. Applicants who have received ablation therapy shall be assessed as unfit. A fit assessment may be considered by the AMS in compliance with paragraph 9 of Appendix 1 to Subpart B.

Appendix 1 to Subpart B Cardiovascular system

(See MAR–FCL 3.130 through 3.150)

9. c. 4. Ventricular pre-excitation
   i. Asymptomatic initial applicants with pre-excitation may be assessed as fit by the AMS if an electrophysiological study, including adequate drug-induced autonomic stimulation reveals no inducible re-entry tachycardia or malignant properties of the accessory pathway, and the existence of multiple pathways is excluded.
   ii. At revalidation/renewal asymptomatic applicants with non-malignant pre-excitation may be assessed as fit by the AMS.

5. Pacemaker
   Following permanent implantation of a subendocardial pacemaker a fit assessment which shall be no sooner than three months after insertion shall require:
   i. no other disqualifying condition;
   ii. a bipolar lead system;
   iii. that the applicant is not pacemaker dependent;
   iv. regular follow-up including a pacemaker check; and
   v. at revalidation/renewal a fit assessment requires an OML.

6. Ablation
   After successful catheter ablation an applicant shall be unfit to fly for a period of 3 months. After this three month a fit assessment may be considered, following satisfactory cardiac evaluation.
   For those in whom the long-term outcome cannot be assured (for example in Atrial Fibrillation) by invasive or non-invasive testing, an additional period with an OML and / or observation may be necessary.

MAR–FCL 3.150 Cardiovascular system – General

a. Applicants with peripheral arterial disease before or after surgery shall be assessed as unfit. Provided there is no significant functional impairment, a fit assessment may be considered by the AMS subject to compliance with paragraphs 7 and 8 of Appendix 1 to Subpart B.

b. Applicants with aneurysm of the thoracic or abdominal aorta, before or after surgery, shall be assessed as unfit. Applicants with aneurysm of the infra-renal abdominal aorta may be assessed as fit by the AMS at renewal or revalidation examinations, subject to compliance with paragraph 10 of Appendix 1 to Subpart B.

c. Applicants with significant abnormality of any of the heart valves shall be assessed as unfit. All applicants shall undergo a 2D Doppler echocardiography at the initial examination.
   1. Applicants with minor cardiac valvular abnormalities may be assessed as fit by the AMS subject to compliance with paragraph 11 a and b of Appendix 1 to Subpart B.

Appendix 1 to Subpart B Cardiovascular system

(See MAR–FCL 3.130 through 3.150)

10. Applicants with unoperated infra-renal abdominal aortic aneurysms shall be assessed as unfit. Follow-up by ultra-sound scans, as necessary, will be determined by the AMS. After surgery for infra-renal abdominal aortic aneurysm without complications, and after cardiovascular assessment, applicants may be assessed as fit by the AMS, with an OML and follow-up as approved by the AMS.

11.a. Applicants with previously unrecognized cardiac murmurs shall require evaluation by a cardiologist acceptable to the AMS and assessment by the AMS. If considered significant, further investigation shall include at least 2D Doppler echocardiography.

   b. Valvular abnormalities
      1. Applicants with bicuspid aortic valve may be assessed as fit without an OML and or a high-G limitation if no other cardiac or aortic abnormality is demonstrated. Follow-up with echocardiography, as necessary, will be determined by the AMS. Until the age of 30 years, the follow-up shall be 2 yearly; after the 30th birthday, the follow-up shall be yearly.
      2. Applicants with aortic stenosis requires AMS review. Left ventricular function must be intact. A history of systemic embolism or significant dilatation of the thoracic aorta are disqualifying. Those with a mean pressure gradient of up to 20 mmHg may be assessed as fit. Those with mean pressure gradient above 20 mmHg but no greater than 40 mmHg may be assessed as fit with an OML and or a high-G limitation. A mean pressure gradient up to 50 mmHg may be acceptable, at the discretion of the AMS. Follow-up with 2D Doppler echocardiography, as necessary, will be determined by the AMS.
      3. Applicants with aortic regurgitation may be assessed as fit without an OML) and or a high-G limitation only if trivial. There shall be no demonstrable abnormality of the ascending aorta on 2D Doppler echocardiography. Follow-up, as necessary, will be determined by the AMS.
      4. Applicants with rheumatic mitral valve disease shall normally be assessed as unfit.
      5. Mitral leaflet prolapse/mitral regurgitation. Asymptomatic applicants with isolated mid-systolic click may need an OML or a high-G limitation. Applicants with uncomplicated minor regurgitation may require an OML and or a high-G limitation as determined by the AMS. Applicants with evidence of volume overloading of the left ventricle demonstrated by increased left ventricular end-diastolic diameter shall be assessed as unfit. Periodic review and assessment as determined by the AMS is required.

MAR–FCL 3.150 Cardiovascular system – General

c. 2. Applicants with cardiac valve replacement/repair shall be assessed as unfit. A fit assessment may be considered by the AMS subject to compliance with paragraph 11 c of Appendix 1 to Subpart B.

Appendix 1 to Subpart B Cardiovascular system

(See MAR–FCL 3.130 through 3.150)

11. c. Valvular surgery

1. Applicants with implanted mechanical valves shall be assessed as unfit.
2. Asymptomatic applicants with a tissue valve who at least 6 months following surgery shall have satisfactorily completed investigations which demonstrate normal valvular and ventricular configuration and function may be considered for a fit assessment by the AMS as judged by:
   i. a satisfactory symptom limited exercise ECG to Bruce Stage IV or equivalent which a cardiologist acceptable to the AMS interprets as showing no significant abnormality. Myocardial scintigraphy/stress echocardiography shall be required if the resting ECG is abnormal and any coronary artery disease has been demonstrated. See also paragraphs 6, 7 and 8 of Appendix 1 to Subparts B;
   ii. a 2D Doppler echocardiogram showing no significant selective chamber enlargement, a tissue valve with minimal structural alterations and with a normal Doppler blood flow, and no structural, nor functional abnormality of the other heart valves. Left ventricular fractional or shortening shall be normal;
   iii. the demonstrated absence of coronary artery disease unless satisfactory re-vascularisation has been achieved – see paragraph 8 above;
   iv. the absence of requirement for cardioactive medication;
   v. follow-up with exercise ECG and 2D echocardiography, as necessary, will be determined by the AMS.

A fit assessment shall require an OML and or a high-G limitation.

MAR–FCL 3.150 Cardiovascular system – General

d. Systemic anticoagulant therapy or equivalent therapy (for instance NAOC's) is disqualifying. Applicants who have received treatment of limited duration may be considered for a fit assessment by the AMS subject to compliance with paragraph 12 of Appendix 1 to Subpart B.

e. Applicants with any abnormality of the pericardium, myocardium or endocardium not covered above shall be assessed as unfit. A fit assessment may be considered by the AMS following complete resolution and satisfactory cardiological evaluation in compliance with paragraph 13 of Appendix 1 to Subpart B.

Appendix 1 to Subpart B Cardiovascular system

(See MAR–FCL 3.130 through 3.150)

12. Applicants following anticoagulant therapy require review by the AMS. Venous thrombosis or pulmonary embolism is disqualifying until anticoagulation has been discontinued. Pulmonary embolus requires full evaluation. Anticoagulation for possible arterial thromboembolism is disqualifying.

13. Applicants with abnormalities of the epicardium/myocardium and/or endocardium, primary or secondary, shall be assessed as unfit until clinical resolution has taken place. Cardiovascular assessment by the AMS may include 2D Doppler echocardiography, exercise ECG and/or myocardial scintigraphy/stress echocardiography and 24-hour ambulatory ECG. Coronary angiography may be indicated. Frequent review and an OML may be required after fit assessment.

    a. Pericarditis: A fit assessment may be considered by the AMS, 6 months after full recovery of a non-constrictive pericarditis and after satisfactory cardiological evaluation by a cardiologist, acceptable to the AMS. An OML shall be applied for 2 years.
    b. Cardiomyopathy is disqualifying. An OML may be required after satisfactory cardiological evaluation by a cardiologist acceptable by the AMS.
    c. Myocarditis: A fit assessment for an applicant may be considered by the AMS, 6 months after full recovery and after a satisfactory cardiological evaluation. An OML and a high-G limitation shall be applied for at least 1 year. A fit assessment without limitation may be considered by the AMS after satisfactory cardiological evaluation.

MAR–FCL 3.150 Cardiovascular system – General

f. Applicants with congenital abnormality of the heart, before or after corrective surgery, shall be assessed as unfit. Applicants with minor abnormalities may be assessed as fit by the AMS following cardiological investigation in compliance with paragraph 14 of Appendix 1 to Subpart B.

g. Heart or heart/lung transplantation is disqualifying.

h. Applicants with a history of recurrent vasovagal syncope shall be assessed as unfit. A fit assessment may be considered by the AMS in applicants with a suggestive history subject to compliance with paragraph 15 of Appendix 1 to Subpart B.

i. Applicants who suffered loss of consciousness without significant warning shall be assessed as unfit.

j. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 1 to Subpart B Cardiovascular system

(See MAR–FCL 3.130 through 3.150)

14. Applicants with congenital heart conditions including those surgically corrected, shall normally be assessed as unfit unless functionally unimportant and no medication is required. Cardiological assessment by the AMS shall be required. Investigations may include 2D Doppler echocardiography, exercise ECG and 24-hour ambulatory ECG. Regular cardiological review shall be required. An OML may be required.

15. Applicants who have suffered recurrent episodes of syncope shall undergo the following:
    a. a symptom limited 12 lead exercise ECG to Bruce Stage IV, or equivalent, which a cardiologist acceptable to AMS interprets as showing no abnormality. If the resting ECG is abnormal, myocardial scintigraphy/stress echocardiography shall be required.
    b. a 2D Doppler echocardiogram showing no significant selective chamber enlargement nor structural nor functional abnormality of the heart, valves nor myocardium.
    c. a 24-hour ambulatory ECG recording showing no conduction disturbance, nor complex, nor sustained rhythm disturbance nor evidence of myocardial ischaemia.
    d. and may include a tilt test carried out to a standard protocol which in the opinion of a cardiologist acceptable to the AMS shows no evidence of vasomotor instability.

    Applicants fulfilling the above may be assessed as fit, requiring an OML no less than 6 months following an index event provided there has been no recurrence. Neurological review will normally be indicated. 5 Years freedom from attacks shall be required before a fit assessment without an OML. Shorter or longer periods of consideration may be accepted by the AMS according to the individual circumstances of the case.

MAR–FCL 3.155 Respiratory system – General

a. An applicant for, or the holder of, a Class 1 MMC shall not possess any abnormality of the respiratory system, congenital or acquired, which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

b. Posterior/anterior chest radiography is required at initial examination and when indicated on clinical or epidemiological grounds.

c. Pulmonary function tests (see paragraph 1 of Appendix 2 to Subpart B) are required at the initial examination, at all revalidation or renewal examinations and on clinical indication. Applicants with significant impairment or decrease of pulmonary function shall be assessed as unfit. (See paragraph 1 of Appendix 2 to Subpart B)

d. If pulmonary allergy is expected, further examination should take place. Allergic disease should be excluded by methacholine and provocative pulmonary testing.

e. Any significant abnormality shall require further evaluation by a specialist in respiratory diseases.

MAR–FCL 3.160 Respiratory system – Disorders

a. Applicants with chronic obstructive airway disease shall be assessed as unfit. Applicants with only minor impairment of their pulmonary function requiring no medication, and without bullae on their chest X-ray may be assessed as fit. Where appropriate, applicants shall be referred to a specialist in respiratory diseases for assessment.

b. Applicants with asthma requiring medication shall be assessed in compliance with paragraph 2 of Appendix 2 to Subpart B.

c. Applicants with active inflammatory disease of the respiratory system shall be assessed as temporarily unfit. (See paragraph 3 and 4 of Appendix 2 to Subpart B)

Appendix 2 to Subpart B Respiratory system

(See MAR–FCL 3.155 and 3.160)

1. Spirometry examination is required for all examinations. An FEV1/FVC ratio with a Z-score less than -1,96 shall require evaluation by a specialist in respiratory disease. At renewal or revalidation, a decrease in FEV1 >10% shall require evaluation by a specialist in respiratory disease.

2. Applicants experiencing recurrent attacks of asthma shall be assessed as unfit.
   a. At initial examination a fit assessment may be considered by the AMS after a free of attack period of 5 years.
   b. A fit assessment for revalidation or renewal may be considered by the AMS if considered stable with acceptable pulmonary function tests and medication compatible with flight safety (no systemic steroids) and a full report is submitted to the AMS.

3. Applicants with active tuberculosis shall be assessed as temporarily unfit.
   A fit assessment after 6 months may be considered by the AMS after treatment with medication with full recovery.

4. Applicants with prophylactic treatment of tuberculosis may be considered fit after 2 weeks in the absence of serious side effects.

MAR–FCL 3.160 Respiratory system – Disorders

d. Applicants with active sarcoidosis shall be assessed as unfit. (See paragraph 5 of Appendix 2 to Subpart B)

e. Applicants with spontaneous pneumothorax shall be assessed as unfit pending full evaluation in compliance with paragraph 6 of Appendix 2 to Subpart B.

f. Applicants with a traumatic pneumothorax shall be assessed as unfit pending full evaluation in compliance with paragraph 7 of Appendix 2.

g. Applicants requiring major chest surgery shall be assessed as unfit for a minimum of three months following operation and until such time as the effects of the operation are no longer likely to interfere with the safe exercise of the privileges of the applicable licence(s). (See paragraph 8 of Appendix 2 to Subpart B) The underlying pathology which necessitated the surgery will need to be considered in the assessment process at revalidation or renewal.

Appendix 2 to Subpart B Respiratory system

(See MAR–FCL 3.155 and 3.160)

5. Applicants with active sarcoidosis are unfit. A fit assessment may be considered by the AMS if the disease is:
   a. investigated with respect to the possibility of systemic involvement; and
   b. limited to hilar and mediastinal lymphadenopathy and the applicant requires no medication;
   c. pulmonary function test should be normal;
   d. a multi-pilot limitation may be appropriate for 2 years.

6. Spontaneous pneumothorax.
   a. A fit assessment following a fully recovered single spontaneous pneumothorax may be acceptable after one year from the event with full respiratory evaluation including CT scan or equivalent.
   b. At revalidation or renewal, a fit assessment may be considered by the AMS with an OML if the applicant fully recovers from a single spontaneous pneumothorax after 3 months. A fit assessment without an OML may be considered by the AMS after one year from the event with full respiratory investigation.
   c. For high performance aircraft pilots, surgical intervention with pleurectomy on both sides is necessary for a fit assessment at revalidation or renewal. Lung function must be normal.
   d. A recurrent spontaneous pneumothorax is disqualifying. A fit assessment may be considered by the AMS following surgical intervention with a satisfactory recovery.

7. Traumatic pneumothorax.
   a. A fit assessment after a traumatic pneumothorax may be considered by the AMS 3 months after full recovery and after respiratory evaluation by a specialist, acceptable to the AMS.
   b. At revalidation or renewal, a fit assessment may be considered 3 months after full recovery and respiratory evaluation by a specialist, acceptable to the AMS.

AR–FCL 3.160 Respiratory system – Disorders

h. Applicants suffering from excessive daytime sleepiness or with unsatisfactorily treated sleep apnoea syndrome shall be assessed as unfit. A fit assessment with SIC limitation may be appropriate if acceptable treatment leads to satisfactory AHI (Apnoea Hypopnea Index) scores. See also applicable paragraph in the Neurology and ENT section.

i. Applicants with Pulmonary emphysema shall be assessed as unfit. (See paragraph 9 of Appendix 2 to Subpart B)

j. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 2 to Subpart B Respiratory system

(See MAR–FCL 3.155 and 3.160)

8. Pneumonectomy is disqualifying. A fit assessment following lesser chest surgery may be considered after at least 3 months by the AMS after satisfactory recovery and full respiratory evaluation including MRI or equivalent. A fit assessment following lobectomy may be considered after at least 1 year by the AMS after satisfactory recovery and full respiratory evaluation by a specialist, acceptable to the AMS. An OML and high-G limitation may be appropriate.

9. A fit assessment may be considered by the AMS if the condition is not causing significant symptoms.

MAR–FCL 3.165 Digestive System

a. An applicant for, or the holder of, a Class 1 MMC shall not possess any functional or structural disease of the gastro-intestinal tract or its adnexa which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

b. Applicants with recurrent dyspeptic disorders requiring medication shall be assessed as unfit pending assessment. (See paragraph 1 of Appendix 3 to Subpart B)

c. Applicants with pancreatitis shall be assessed as unfit pending assessment. (See paragraph 2 of Appendix 3 to Subpart B)

d Applicants with asymptomatic gallstones discovered incidentally shall be assessed. (See paragraph 3 Appendix 3 to Subpart B)

e. Applicants with an established diagnosis or history of chronic inflammatory bowel disease shall be assessed as unfit. (See paragraph 4 Appendix 3 to Subpart B)

Appendix 3 to Subpart B Digestive system

(See MAR–FCL 3.165)

1. a. Applicants with recurrent dyspeptic disorder requiring medication shall be investigated. A fit assessment may be considered by the AMS after endoscopy showing no abnormalities and after full recovery. Medication will show no significant side-effects.
   b. Hiatus hernia is disqualifying. A fit assessment with an OML and or high-G limitation may be considered by the AMS after conservative treatment. A fit assessment without limitations may be considered by the AMS after surgical treatment.
   c. Atrophic gastritis is disqualifying. A fit assessment at revalidation or renewal may be considered by the AMS if the applicant is without symptoms and there is no pernicious anaemia.
   d. Alcohol may be a cause of dyspepsia. If considered appropriate a full evaluation of its use/abuse is required. A fit assessment may be considered at revalidation or renewal by the AMS after successful treatment.

2. a. Pancreatitis is disqualifying. A fit assessment may be considered by the AMS if the cause of obstruction (e.g. medication, gallstone) is removed.
   b. Alcohol may be a cause of pancreatitis. If considered appropriate a full evaluation of its use/abuse is required. A fit assessment may be considered at revalidation or renewal by the AMS after successful treatment.

3. Applicants with a single asymptomatic large gallstone may be assessed as fit after consideration by the AMS. An applicant with asymptomatic multiple gallstones may be assessed as fit with an OML at revalidation / renewal by the AMS.

4. Inflammatory bowel disease is acceptable provided that it is in established remission and stabilised and that systemic steroids are not required for its control. A fit assessment at revalidation or renewal may be considered by the AMS in the case of a mild colitis ulcerosa requiring only sulfasalazine or 5-ASA. A fit assessment may be considered by the AMS after a 1-year remission of M. Crohn, requiring only Sulfasalazine or 5-ASA. A colectomy is disqualifying.

MAR–FCL 3.165 Digestive system

f. Applicants shall be completely free from herniae that might give rise to incapacitating symptoms. (See paragraph 5 of Appendix 3 to Subpart B)

g. Applicants with any sequelae of disease, which need surgical intervention, in any part of the digestive tract or its adnexa likely to cause incapacitation in flight, in particular any obstruction due to stricture or compression, shall be assessed as unfit.

h. Applicants who have undergone a surgical operation on the digestive tract or its adnexa, involving a total or partial excision or a diversion of any of these organs, shall be assessed as unfit for a minimum period of three months or until such time as the effects of the operation are no longer likely to interfere with the safe exercise of the privileges of the applicable licence(s). (See paragraph 6 of Appendix 3 to Subpart B)

i. Applicants with internal or external haemorrhoids shall be assesses as unfit. A fit assessment at revalidation or renewal for applicants may be considered by the AMS according Paragraph 7 of Appendix 3 to Subpart B.

j. Applicants with liver disease shall be assessed in compliance with paragraph 8 of Appendix 3 to Subpart B.

k. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 3 to Subpart B Digestive system

(See MAR–FCL 3.165)

5. A fit assessment may be considered by the AMS after a satisfactory investigation of a small umbilical hernia by a surgeon, acceptable to the AMS.

6 Abdominal surgery is disqualifying for a minimum of three months. The AMS may consider an earlier fit assessment at revalidation or renewal if recovery is complete, the applicant is asymptomatic and there is only a minimal risk of secondary complication or recurrence. Laparoscopic operations are disqualifying for a minimum of 6 weeks.

7. A fit assessment for applicants at revalidation or renewal with haemorrhoids with a grade III prolapse may be considered by the AMS requiring a high-G limitation until surgical treatment has been performed. Haemorrhoids with grade IV prolapse are disqualifying until surgical treatment has been performed.

8. Liver cirrhosis, adenoma of the liver, cysts in the liver caused by parasites and hepatitis are disqualifying. A fit assessment may be considered by the AMS after surgical treatment of the adenoma or cysts and treatment with medication against the parasites. In the case of a chronic hepatitis a fit assessment at revalidation or renewal may be considered by the AMS if the infection is without symptoms and liver function is normal.

MAR–FCL 3.170 Metabolic, nutritional and endocrine diseases

a. An applicant for, or the holder of, a Class 1 MMC shall not possess any functional or structural metabolic, nutritional or endocrine disorder which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

b. Applicants with metabolic, nutritional or endocrine dysfunctions may be assessed as fit in accordance with paragraph 1 of Appendix 4 to Subpart B.

c. Applicants with diabetes mellitus not requiring insulin may be assessed as fit only in accordance with paragraphs 2 and 3 of Appendix 4 to Subpart B.

d. Applicants with diabetes mellitus requiring insulin shall be assessed as unfit.

e. Applicants with a Body Mass Index > 30 may be assessed as fit only if the excess weight is not likely to interfere with the safe exercise of the applicable licence(s) and a satisfactory cardiovascular risk review has been undertaken. (See MAR-FCL 3.195 b. Musculoskeletal requirements and see MAR-FCL 3.140 Cardiovascular system and paragraph 7 of Appendix 1 to Subpart B)

f. Applicants with a Body Mass Index < 18 shall be assessed as unfit. (See paragraph 4 of Appendix 4 to Subpart B)

g. Addison's disease is disqualifying at initial examination. A fit assessment may be considered by the AMS at revalidation or renewal, provided that cortisone is carried and available for use, whilst exercising the privileges of the licence. An OML may be required.

h. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 4 to Subpart B Metabolic, nutritional and endocrine disorders

(See MAR–FCL 3.170)

1. Metabolic, nutritional or endocrinological dysfunction is disqualifying. A fit assessment may be considered by the AMS if the condition is asymptomatic, clinically compensated and stable with or without replacement therapy, and regularly reviewed by an appropriate specialist.

2. Glycosuria and abnormal blood glucose levels require investigation. A fit assessment may be considered by the AMS if normal glucose tolerance is demonstrated (low renal threshold) or impaired glucose tolerance without diabetic pathology is fully controlled by diet and regularly reviewed.

3. The use of antidiabetic drugs is disqualifying. In selected cases, however, the use of biguanides or alpha-glucosidase inhibitors and DPP4 inhibitors may be acceptable for a fit assessment with an OML) and a high-G limitation.

4. In case of a low BMI (<18) a fit assessment may be considered by the AMS after investigation by specialist in internal medicine and psychiatrist.

MAR–FCL 3.175 Haematology

a. An applicant for, or the holder of, a Class 1 MMC shall not possess any haematological disease which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

b. Haemoglobin shall be tested at every medical examination. Applicants with abnormal haemoglobin values (male < 8,0 mmol/l; female < 7,0 mmol/l) shall be investigated. (See paragraph 1 of Appendix 5 to Subpart B)

c. Applicants with hemoglobinopathies, minor thalassaemia or sickle cell disease shall be assessed as unfit. (See paragraph 1 of Appendix 5 to Subpart B)

d. Applicants with significant localised and generalised enlargement of the lymphatic glands and diseases of the blood shall be assessed as unfit. (See paragraph 2 of Appendix 5 to Subpart B)

e. Applicants with acute leukaemia shall be assessed as unfit. Initial applicants with a history of acute lymphatic leukaemia (ALL) may be assessed as fit by the AMS if the ALL is in remission for at least 10 years. After radiation therapy of the skull, a neurological and psychiatric evaluation is necessary. At revalidation or renewal, applicants may be assessed as fit by the AMS after established remission.

f. Applicants with chronic leukaemia shall be assessed as unfit. After a period of demonstrated stability a fit assessment may be considered by the AMS. (See paragraph 3 of Appendix 5 to Subpart B)

Appendix 5 to Subpart B Haematology

(See MAR–FCL 3.175)

1. Anaemias demonstrated by reduced haemoglobin level require investigation. Anaemia which is unamenable to treatment is disqualifying. A fit assessment may be considered by the AMS in cases where the primary cause has been satisfactorily treated (e.g. iron deficiency or B12 deficiency), or where minor thalassaemia or haemoglobinopathies are diagnosed without a history of crises.

2. Lymphatic enlargement requires investigation. A fit assessment may be considered by the AMS in cases of acute infectious process which is fully recovered or Hodgkin's lymphoma and Non-Hodgkin’s lymphoma of high-Grade which has been treated and is in full remission.

3. In cases of chronic leukaemia, a fit assessment may be considered by the AMS. There shall be no history of central nervous system involvement and no continuing side-effects from treatment of flight safety importance. Haemoglobin and platelets levels shall be satisfactory. Regular follow-up is required.

MAR–FCL 3.175 Haematology

g. Applicants with significant enlargement of the spleen shall be assessed as unfit. (See paragraph 4 of Appendix 5 to Subpart B)

h. Applicants without spleen or functional asplenia in general shall be assessed as unfit, but should be assessed on an individual basis. (See paragraph 5 of Appendix 5 to Subpart B)

i. Applicants with significant polycythaemia (haematocrit >51% by male or >48% by female) shall be assessed as unfit. (See paragraph 6 of Appendix 5 to Subpart B)

j. Applicants with a coagulation defect or a severe thrombocytopaenia (<75 x 10^3) shall be assessed as unfit. (See paragraph 7 and 8 of Appendix 5 to Subpart B)

k. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 5 to Subpart B Haematology

(See MAR–FCL 3.175)

4. Splenomegaly requires investigation. The AMS may consider a fit assessment when the enlargement is minimal, stable and no associated pathology is demonstrable (e.g. treated chronic malaria), or if the enlargement is minimal and associated with another acceptable condition (e.g. Hodgkin's lymphoma in remission). A high-G limitation may be appropriate.

5. Asplenia (anatomical or functional) requires further investigation. In case of acquired asplenia special attention should be paid to diseases associated with functional asplenia requiring no specialist consultation (e.g. coeliac, sickle cell disease, hemoglobinopathy, high doses corticosteroiD)

6. Polycythaemia requires investigation. The AMS may consider a fit assessment with an OML if the condition is stable and no associated pathology has been demonstrated.

7. Significant coagulation defects require investigation. The AMS may consider a fit assessment with an OML and/or high-G limitation if there is no history of significant bleeding or clotting episodes.

8. Thrombocytopaenia requires investigation. The AMS may consider a fit assessment after an idiopathic or auto-immune thrombocytopaenia thrombopathy if the amount of thrombocytes is stable. An OML and/or high-G limitation may be appropriate.

MAR–FCL 3.180 Urinary system

a. An applicant for, or the holder of, a Class 1 MMC shall not possess any functional or structural disease of the urinary system or its adnexa which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

b. Applicants presenting any signs of organic disease of the kidney shall be assessed as unfit. Urinalysis shall form part of every medical examination. The urine shall contain no abnormal element considered to be of pathological significance. Particular attention shall be paid to disease affecting the urinary passages and the genital organs. (See paragraph 1 and 2 of Appendix 6 to Subpart B)

c. Applicants presenting with urinary calculi shall be assessed as unfit. (See paragraph 3 of Appendix 6 to Subpart B)

Appendix 6 to Subpart B Urinary system

(See MAR–FCL 3.180)

1. Any abnormal finding (including proteinuria, haematuria and glycosuria) upon urinalysis requires two repeated urinalyses with a week in between. When 2 out of 3 show abnormal findings, the applicant has to be referred to an urinary specialist. A fit assessment may be considered by the AMS after satisfactory urinary evaluation.

2. Renal failure is disqualifying. A fit assessment at revalidation or renewal may be considered by the AMS if the renal failure is asymptomatic. There shall be no signs of a low haemoglobin or albumin; no haemolysis or disturbance of electrolytes, and no hypertension. An OML and/or high-G limitation may be appropriate.

3. An asymptomatic calculus or a history of renal colic requires investigation. While awaiting assessment or treatment, the AMS may consider a fit assessment at revalidation or renewal with an OML. After successful treatment a fit assessment without an OML may be considered by the AMS. A control echogram and/or CT scan at 6 weeks after treatment or spontaneous recovery shall be performed. Annual follow up by ultrasound is needed (SIC limitation). Residual calculi are disqualifying, unless they are in a location where they are unlikely to move and give symptoms. The AMS may consider a fit assessment at revalidation or renewal with an OML and a high-G limitation.

MAR–FCL 3.180 Urinary system

d. Applicants with any sequela of disease or surgical procedures on the kidneys and the urinary tract likely to cause incapacitation, in particular any obstruction due to stricture or compression, shall be assessed as unfit. An applicant with compensated nephrectomy without hypertension or uraemia may be considered fit. (See paragraph 4 of Appendix 6 to Subpart B)

e. Applicants who have undergone a major surgical operation in the urinary tract (kidney, bladder, prostate) or the urinary apparatus involving a total or partial excision or a diversion of any of its organs shall be assessed as unfit for a minimum period of three months and until such time as the effects of the operation are no longer likely to cause incapacity in flight. (See paragraphs 4 and 5 of Appendix 6 to Subpart B)

f. A varicocele is disqualifying for flying in a high-performance aircraft. A fit assessment may be considered by the AMS after surgical treatment.

g. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 6 to Subpart B Urinary system

(See MAR–FCL 3.180)

4. Major urological surgery (kidney, bladder, prostate) is disqualifying for a minimum of three months. The AMS may consider a fit assessment if the applicant is completely asymptomatic and there is a minimal risk of secondary complication or recurrence.

5. Renal transplantation, total cystectomy or ureterostomy is not acceptable for an initial examination. At revalidation or renewal, a fit assessment with an OML may be considered by the AMS in the case of:
   a. renal transplant which is fully compensated and tolerated with minimal immuno-suppressive therapy after at least twelve months; and
   b. total cystectomy which is functioning satisfactorily with no recurrence of primary pathology.

MAR–FCL 3.185 Sexual transmitted diseases and other infections

a. An applicant for or holder of a Class 1 MMC shall have no established medical history or clinical diagnosis of any sexually transmitted disease or other infection which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

b. An applicant with a HIV infection involving symptoms of active disease such as AIDS, AIDS Related Complex, or Central Nervous System involvement shall be assessed as unfit. However, a fit assessment at initial, renewal and revalidation of asymptomatic HIV positive individuals may be considered in accordance with paragraph 1 and 2 of Appendix 7 to Subpart B.

c. Infectious hepatitis may be disqualifying. (See paragraph 3 of Appendix 7 Subpart B)

d. Syphilis is disqualifying. (See paragraph 4 of Appendix 7 Subpart B)

e. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 7 to Subpart B Sexual transmitted diseases and other infections

(See MAR–FCL 3.185)

1. There is no requirement for routine testing of HIV status, but testing may be carried out on clinical indication. Once HIV positivity has been confirmed, a process of rigorous assessment and follow-up should be introduced to enable individuals to continue working (provided their ability to exercise their licenced privileges to the required level of safety is not impaired). Treatment must be assessed by a specialist acceptable to the AMS on an individual basis for its appropriateness and any side-effects. At revalidation or renewal, a fit assessment of HIV positive individuals a SIC limitation may be considered by the AMS subject to yearly review. The occurrence of AIDS or AIDS related complex is disqualifying.

2. Since sudden incapacitation by seizure, or subtle incapacitation due to cognitive dysfunction are known manifestations of HIV disease, thorough neurological examination shall form part of the regular assessment of HIV positive individuals.

3. If infectious hepatitis has been confirmed, a process of rigorous assessment and follow-up should be introduced to enable individuals to continue working (provided their ability to exercise their licenced privileges to the required level of safety is not impaireD) Treatment must be assessed by a specialist acceptable to the AMS on an individual basis for its appropriateness and any side-effects. At revalidation or renewal, a fit assessment of infectious hepatitis individuals with a SIC limitation may be considered by the AMS subject to yearly review.

4. A fit assessment may be considered by the AMS in the case of those fully treated and recovered from all possible stages.

MAR–FCL 3.190 Gynaecology and obstetrics

a. An applicant for, or the holder of, a Class 1 MMC shall not possess any functional or structural obstetric or gynaecological condition which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

b. An applicant with a history of severe menstrual disturbances unamenable to treatment shall be assessed as unfit.

c. Pregnancy entails unfitness. If obstetric evaluation indicates a completely normal pregnancy, the applicant may be assessed as fit by the AMS from the 12th until the 26th week of gestation, in accordance with paragraph 1 of Appendix 8 to Subpart B by the AMS. Licence privileges may be resumed upon satisfactory confirmation of full recovery following confinement or termination of pregnancy.

d. An applicant who has undergone a major gynaecological operation shall be assessed as unfit. (See paragraph 2 of Appendix 8 to Subpart B)

e. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 8 to Subpart B Gynaecology and obstetrics

(See MAR–FCL 3.190)

1. The AMS may assess a pregnant applicant as fit from the 12th to the 26th week of gestation following review of the obstetric evaluation. An echoscopy is mandatory to exclude extra-uterine gestation. The AMS shall provide written advice to the applicant and the supervising physician regarding potentially significant complications of pregnancy (see Manual). MMC holders require a temporary OML and high-G limitation. In case of pregnant MMC holders this temporary OML and high-G limitation shall be imposed and, following confinement or termination of the pregnancy, removed by the AMS.

2. Major gynaecological surgery is disqualifying for a minimum of three months. The AMS may consider an earlier fit assessment at revalidation or renewal if the holder is completely asymptomatic and there is only a minimal risk of secondary complication or recurrence and the effects of the operation are no longer likely to interfere with the safe exercise of the privileges of the license.

MAR–FCL 3.195 Musculoskeletal requirements

a. An applicant for or holder of a Class 1 MMC shall not possess any abnormality of the bones, joints, muscles and tendons, congenital or acquired, which is likely to interfere with the safe exercise of the privileges of the applicable licence(s). At the initial examination an x-ray examination of the whole spine shall be performed. (See paragraph 1 of Appendix 9 to Subpart B)

b. An applicant shall have sufficient sitting height, arm and leg length and muscular strength for the safe exercise of the privileges of the applicable licence. Abnormal physique, including obesity (BMI≥ 30), or muscular weakness at initial examination is disqualifying. At renewal or revalidation this may require medical flight or flight simulator testing approved by the AMS. (See paragraph 2 of Appendix 9 to Subpart B)

c. An applicant shall have satisfactory functional use of the musculoskeletal system. An applicant with any significant sequela from disease, injury or congenital abnormality of the bones, joints, muscles or tendons with or without surgery, mentioned in medical investigation and or medical examination, shall be assessed in accordance with paragraphs 1, 2 and 3 of Appendix 9 to Subpart B.

d. An applicant with inflammatory, infiltrative, traumatic or degenerative disease of the musculoskeletal system may be assessed as fit by the AMS in accordance with paragraphs 1, 2 and 3 of Appendix 9 to Subpart B.

e. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 9 to Subpart B Musculoskeletal requirements

(See MAR–FCL 3.195)

1. X-ray examination at the initial examination shall be performed and assessed by a specialist. In case of X-ray abnormalities referral to a specialist acceptable to AMS is needed for further analysis. The following abnormalities are disqualifying:

   a. Kyphosis > 50°. A kyphosis of 40°- 49° needs an assessment of an orthopaedic specialist, acceptable to the AMS.
   b. Scoliosis > 25°, according Cobb. A scoliosis between 15° and 25° needs an assessment of an orthopaedic specialist, acceptable to the AMS.
   c. C-curve > 15°.
   d. Spondylolisthesis and spondylolysis must be assessed by an orthopaedic specialist, acceptable to the AMS.
      Spondylolysis without symptoms may be accepted.
      Spondylolysis with symptoms is disqualifying.
      Spondylolisthesis gr 1-2 without symptoms may be accepted.
      Spondylolisthesis gr 1-2 with symptoms is disqualifying.
      Spondylolisthesis gr 3 and 4 with or without symptoms is disqualifying.

2. Particular attention shall be paid to emergency procedures and evacuation. A limitation restricted to demonstrated aircraft type(s) ('OAL') or to specified type(s) may be required.

3. An applicant with inflammatory, infiltrative, traumatic or degenerative disease of the musculoskeletal system may be assessed as fit by the AMS. Provided the condition is in remission and the applicant is taking no disqualifying medication and has satisfactorily completed a medical flight or simulator flight test when necessary. A limitation restricted to demonstrated aircraft type(s) ('OAL') or to specified type(s) may be required.

MAR–FCL 3.200 Psychiatric requirements

a. An applicant for or holder of a Class 1 MMC shall have no established medical history or clinical diagnosis of any psychiatric disease or disability, condition or disorder, acute or chronic, congenital or acquired, which is likely to interfere with the safe exercise of the privileges of the applicable licence(s),

b. An established condition in the schizophrenia spectrum, including psychotic symptoms is disqualifying. (See paragraph 1 of Appendix 10 to Subpart B)

c. An established depressive or anxiety disorder is disqualifying. (See paragraph 2 of Appendix 10 to Subpart B)

d. A single self-destructive action or repeated acts of deliberate self-harm are disqualifying. (See paragraph 3 of Appendix 10 to Subpart B)

e. Abuse of alcohol and use of psychoactive drugs or substances with or without dependency is disqualifying. (See paragraph 4 of Appendix 10 to Subpart B)

Appendix 10 to Subpart B Psychiatric requirements

(See MAR–FCL 3.200)

1. A fit assessment may only be considered if the AMS concludes that the original diagnosis was inappropriate or inaccurate, or in the case of a single episode of delirium provided that the applicant has suffered no permanent impairment.

2. The AMS may consider a fit assessment after full consideration of an individual case, depending on the depressive or anxiety disorder characteristics and gravity and after all psychotropic medication has been stopped for an appropriate period of at least 3 months. Prolonged administration of limited psychotropic medication to prevent relapse may be considered, only by a psychiatric specialist acceptable to the AMS, resulting in an OML. An established mania is disqualifying permanently.

3. A fit assessment may be considered by the AMS after full consideration of an individual case and may require psychological or psychiatric review.

4. A fit assessment at initial examination may be considered by the AMS after a period of two years documented sobriety or freedom from substance use.
   At revalidation or renewal, a fit assessment may be considered by the AMS after 6 months.
   Depending on the individual case and at the discretion of the AMS, treatment and review may include:
   a. in-patient treatment of some weeks followed by
   b. review by a psychiatric specialist acceptable to the AMS; and
   c. ongoing review including blood and urine testing and peer reports, which may be required indefinitely.

MAR–FCL 3.200 Psychiatric requirements

f. Neurobiological development disorders (e.g. dyslexia, dyscalculia) requires investigation. (See paragraph 5 of Appendix 10 to Subpart B)

g. An established trauma- or stress-related disorder is disqualifying. (See paragraph 6 of Appendix 10 to Subpart B)

h. A personality disorder requires investigation. (See paragraph 7 of Appendix 10 to Subpart B)

i. An established neurocognitive disorder is disqualifying. (See paragraph 8 of Appendix 10 to Subpart B)

Appendix 10 to Subpart B Psychiatric requirements

(See MAR–FCL 3.200)

5. The AMS may consider a fit assessment after full consideration of an individual case and may require extensive evaluation.

6. A fit assessment may be considered by the AMS after full consideration of an individual case and may require psychological or psychiatric review.

7. The AMS may consider a fit assessment after full consideration of an individual case and may require extended psychological or psychiatric evaluation.

8. The AMS may consider a fit assessment after full consideration of an individual case, depending on the gravity of the disorder, and may require extensive psychological or psychiatric review.

MAR-FCL 3.205 Neurological requirements

a. An applicant for holder of a Class 1 MMC shall have no established medical history or clinical diagnosis of any neurological condition which is likely to interfere with the safe exercise of the privileges of the applicable license(s).

b. Any neurological condition which might interfere with the safe exercise of the privileges of the applicable license(s) shall be assessed by a neurologist acceptable to the AMS.

c. Progressive diseases of the nervous system shall be assessed as unfit. (See paragraph 1 to Appendix 11, Subpart B)

d. Cerebrovascular disease and intracerebral malformations shall be assessed by a neurologist acceptable to the AMS. (See paragraph 2 to Appendix 11, Subpart B)

e. Epilepsy and other causes of disturbance of consciousness shall be assessed as unfit. (See paragraph 3 to Appendix 11, Subpart B)

Appendix 11 to Subpart B Neurological requirements

(See MAR–FCL 3.205)

1. Any stationary or progressive disease of the nervous system which has caused or is likely to cause a significant disability is disqualifying.
   In case of minor functional losses, associated with stationary disease, the AMS may consider a fit assessment after full evaluation.
   A diagnosis of Multiple Sclerosis is disqualifying. At revalidation or renewal, a fit assessment may be considered by the AMS in case of full remission and after full evaluation.

2. Cerebrovascular disease and intracerebral malformations.
   a. TIA (including transient monocular blindness) or ischemic stroke is disqualifying.
   b. A history of intracerebral hemorrhage is disqualifying.
   c. Unruptured intracerebral aneurysms are disqualifying.
   d. Intracerebral cavernoma and intracerebral arterio-venous malformation (AVM) are disqualifying.
   e. Aneurysmal subarachnoid hemorrhage is disqualifying, as is subarachnoid hemorrhage due to other vascular anomalies.
   f. A fit assessment may be considered by the AMS for peri mesencephalic hemorrhage after neurological assessment.
   g. A fit assessment may be considered by the AMS for intracerebral developmental venous anomaly (DVA) after neurological assessment.

3. Epilepsy and other causes of disturbance of consciousness.
   a. Syncope of uncertain cause is disqualifying. In case of a single episode of disturbance of consciousness, which can be satisfactorily explained, a fit assessment may be considered by the AMS. More than 3 episodes per year requires evaluation. An OML may be appropriate.
   b. A diagnosis of epilepsy is disqualifying. A fit assessment may be considered by the AMS if the applicant has been free of recurrence and off treatment for more than 10 years. In case of an acute symptomatic seizure which is considered to have a very low risk of recurrence a fit assessment may be considered by the AMS after 2 years. An OML may be appropriate.
   c. Electroencephalography is required when indicated by the applicant's history or on clinical grounds. Epileptiform paroxysmal EEG abnormalities and focal slow waves are disqualifying. Further evaluation shall be carried out by the AMS.

MAR-FCL 3.205 Neurological requirements

f. Migraine, Trigeminal Autonomic Cephalalgias and trigeminal neuralgia are disqualifying. (See paragraph 4 to Appendix 11, Subpart B)

g. Any head injury which has been severe enough to cause loss of consciousness or is associated with penetrating brain injury shall be examined by a neurologist acceptable to the AMS. (See paragraph 5 to Appendix 11, Subpart B)

h. Intracerebral tumors shall be assessed as unfit. (See paragraph 6 to Appendix 11, Subpart B)

i. Spinal or peripheral nerve injury shall be assessed by a neurologist acceptable to the AMS. (See paragraph 7 to Appendix 11, Subpart B)

j. Neurological infectious diseases shall be assessed as unfit. (See paragraph 8 to Appendix 11, Subpart B)

Appendix 11 to Subpart B Neurological requirements

(See MAR–FCL 3.205)

4. Headache syndromes.
   a. A history of migraine is disqualifying. After neurological assessment a fit assessment at revalidation or renewal may be considered by the AMS at least 6 months after first presentation. An OML may be appropriate for a period of 2 years.
   b. A diagnosis of TAC (trigeminal autonomic cephalgia) is disqualifying.
   c. A diagnosis of trigeminal neuralgia is disqualifying.

5. Head injury.
   a. A fit assessment after mild head injury may be considered by the AMS after 1 month.
   b. A fit assessment after moderate head injury at revalidation or renewal with an OML and high-G limitation may be considered by the AMS after 6 months. A fit assessment without limitations may be considered by the AMS after 2 years.
   c. A fit assessment after severe head injury at revalidation or renewal with OML and high-G limitation for long term may be considered by the AMS after 5 years.

6. Intracerebral tumors are disqualifying. A fit assessment at revalidation or renewal may be considered by the AMS in case of accidental finding of benign intracranial lesions which are asymptomatic, restrictions such as an OML and a high-G limitation may be applied.

7. Spinal or peripheral nerve injury.
   a. Assessment of applicants with a history of spinal or peripheral nerve injury shall be undertaken in conjunction with the musculoskeletal requirements.
   b. Peripheral or spinal nerve injury that does not interfere with the safe exercise of the privileges of the applicable license(s) may be assessed as fit by the AMS provided there is no underlying progressive neurological disorder. Restrictions such as an OML and high-G limitation may be applied.
   c. After full recovery from symptomatic lumbar disc herniations a high-G profile with a high-G onset shall be satisfactorily performed in a human centrifuge by pilots of high-G capable airframes.
   d. Asymptomatic lumbar disc herniations (found accidentally on CT or MRI) may be assessed as fit after neurological consultation.

8. Neurological infectious diseases are disqualifying.
   a. Bacterial meningitis is disqualifying. A fit assessment may be considered by the AMS after full evaluation at least 6 months after full recovery.
   b. Viral meningitis is disqualifying. A fit assessment may be considered after full evaluation at least 3 months after full recovery.
   c. Viral encephalitis is disqualifying.

MAR–FCL 3.210 Ophthalmological requirements

a. An applicant for or holder of a Class 1 MMC shall not possess any abnormality of the function of the eyes or their adnexa or any active pathological condition, congenital or acquired, acute or chronic, or any sequela of eye surgery or trauma, which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

b. At initial examination an extended ophthalmological examination is required. (See paragraph 1 of Appendix 12 to Subpart B)

c. At all revalidation and renewal examinations a routine eye examination must be performed. (See paragraph 2 of Appendix 12 to Subpart B) Every other examination shall include an extended ophthalmological examination. (See paragraph 1 of Appendix 12 to Subpart B)

d. The report of the examination shall be forwarded to the AMS. If any abnormality is detected, such that the applicant's ocular health is in doubt, further ophthalmological examination will be required. (See paragraph 3 of Appendix 12 to Subpart B)

e. Fifth generation platforms may require additional or different standards acceptable to the AMS.

f. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 12 to Subpart B Ophthalmological requirements

(See MAR–FCL 3.210)

1. The extended ophthalmological examination shall be carried out by an ophthalmologist or a vision care specialist acceptable to the AMS. All abnormal and doubtful cases shall be referred to an ophthalmologist acceptable to the AMS. Applicants requiring visual correction to meet the standards shall submit a copy of the recent spectacle prescription.
   The extended ophthalmological examination shall include:
   1. history; history of night blindness;
   2. visual acuity, near, intermediate and distant vision: with or without best optical correction (if needed) to meet standard;
   3. objective refraction. Hyperopic applicants under age 25 in cycloplegia;
   4. stereopsis (TNO stereopsis red green test)
   5. ocular motility and binocular vision;
   6. colour vision (HRR test);
   7. visual fields, in case of abnormalities an OCT is required;
   8. tonometry, in case of abnormalities an OCT is required;
   9. examination of the external eye, anatomy, media (slit lamp) and fundoscopy;
   10. cornea topography.
   11. assessment of contrast and glare sensitivity after refractive surgery and on clinical indication.

2. A routine eye examination may be performed by a FS. It shall include:
   1. history;
   2. visual acuity, near, intermediate and distant vision: uncorrected and with best optical correction if needed;
   3. morphology by ophthalmoscopy;
   4. further examination on clinical indication.

   All abnormal and doubtful cases shall be referred to an ophthalmologist acceptable to the AMS.

3. Conditions which indicate specialist ophthalmological examination include, but are not limited to, a substantial decrease in the uncorrected visual acuity, any decrease in best corrected visual acuity and/or the occurrence of eye disease, eye injury, or eye surgery.

MAR–FCL 3.215 Visual requirements

a. Distant visual acuity. Distant visual acuity, with or without correction, shall be 1.0 or better in each eye separately and the visual acuity with both eyes shall be 1.0 or better. (See MAR–FCL 3.220.h. below) The uncorrected visual acuity shall be 0.1 or better in each eye separately and the visual acuity with both eyes without correction shall be 0.2 or better.

b. Refractive errors. Refractive error is defined as the deviation from emmetropia measured in dioptres in the most ametropic meridian. Refraction shall be measured by standard methods. (See paragraph 1 of Appendix 13 to Subpart B) Applicants shall be assessed as fit with respect to refractive errors if they meet the following requirements:
   1. Refractive error
      i. At the initial examination the refractive error shall be within the range of +2 to -3 dioptres. (See paragraph 2 a. of Appendix 13 to Subpart B)
      ii. At revalidation or renewal examinations, an applicant experienced to the satisfaction of the AMS with a refractive error not exceeding + 5 dioptres or with a high myopic refractive error not exceeding – 6 dioptres may be assessed as fit by the AMS. (See paragraph 2 b of Appendix 13 to Subpart B)
      iii. Applicants with a large refractive error shall use contact lenses or high-index spectacle lenses.

Appendix 13 to Subpart B Visual requirements

(See MAR–FCL 3.210 and 3.215)

1. Refraction of the eye and functional performance shall be the index for assessment.

2. a. For those, who reach the functional performance standards (1.0 OS; 1.0 OD; 1.0 ODS; N14; N5) only with corrective lenses the AMS may consider a fit assessment if the refractive error is not exceeding + 2 to -3 dioptres and if:
      i. no significant pathology can be demonstrated;
      ii. optimal correction has been considered.
   b. The AMS may consider a fit assessment at revalidation or renewal if the myopic refraction is greater than – 6 dioptres if:
      i. no significant pathology can be demonstrated;
      ii. optimal correction has been considered;
      iii a yearly review is undertaken by an ophthalmologist or vision care specialist acceptable to the AMS.

MAR–FCL 3.215 Visual requirements

b. 2. Astigmatism
   i. In an initial applicant with a refractive error with an astigmatic component, the astigmatism shall not exceed 2.0 dioptres.
   ii. At recertification or renewal examinations, an applicant experienced to the satisfaction of the AMS with a refractive error with an astigmatic component not exceeding 3.00 dioptres may be assessed as fit by the AMS. (See paragraph 3 of Appendix 13 to Subpart B)

3. Keratoconus is disqualifying. The AMS may consider a fit assessment for revalidation or renewal if the applicant meets the requirements for visual acuity. (See paragraph 4 of Appendix 13 to Subpart B)

4. Anisometropia
   i. In initial applicants the difference in refractive error between the two eyes (anisometropia) shall not exceed 2.0 dioptres.
   ii. At revalidation or renewal examinations, an applicant experienced to the satisfaction of the AMS, the difference in refractive error between the two eyes (anisometropia) shall not exceed 3.0 dioptres (See paragraph 5 of Appendix 13 to Subpart B)

5. The development of presbyopia shall be followed at all aeromedical renewal examinations.

6. An applicant shall be able to read N5 chart (or equivalent) at 30–50 centimetres and N14 chart (or equivalent) at 100 centimetres, with correction if prescribed (see MAR–FCL 3.215.d. below). The visual acuity for near and intermediate distance, with or without correction, shall be 6/12 (0.5) or better.

Appendix 13 to Subpart B Visual requirements

(See MAR–FCL 3.210 and 3.215)

3. Astigmatism. The AMS may consider a fit assessment at revalidation or renewal if the astigmatic component is greater than 3.0 dioptres if:
   i. no significant pathology can be demonstrated;
   ii. optimal correction has been considered;
   iii. a 2-year review is undertaken by an ophthalmologist or vision care specialist acceptable to the AMS.

4. Keratoconus. The AMS may consider fit assessment at revalidation or renewal after diagnosis of a keratoconus provided that:
   i. the visual requirements are met with the use of corrective lenses or after surgery;
   ii. review is undertaken by an ophthalmologist acceptable to the AMS, the frequency to be determined by the AMS.

5. Anisometropia. The AMS may consider fit assessment at revalidation or renewal if the anisometropia exceeds 3,0 dioptres if:
   i. no significant pathology can be demonstrated;
   ii. optimal correction has been considered;
   iii. contact lenses shall be worn;
   iv. a 2-year review is undertaken by an ophthalmologist or vision care specialist acceptable to the AMS.

MAR–FCL 3.215 Visual requirements

c. Binocular vision. An applicant with significant defects of binocular vision shall be assessed as unfit.
   1. Monocularity entails unfitness for a certificate.
   2. An applicant shall have a normal stereopsis (better than 60")
   3. Diplopia. An applicant with diplopia shall be assessed as unfit.
   4. Heterophorias. An applicant with an imbalance of the ocular muscles (heterophorias) exceeding (when measured with usual correction, if prescribed):
      at 6 metres
         2.0 prism dioptres in hyperphoria
         4.0 prism dioptres in esophoria
         8.0 prism dioptres in exophoria
      At 33 cm
         1.0 prism dioptre in hyperphoria
         8.0 prism dioptres in esophoria
         10.0 prism dioptres in exophoria
      shall be assessed as unfit. (See paragraph 6 of Appendix 13 to Subpart B)
   5. Visual fields. An applicant with abnormal visual fields shall be assessed as unfit. (See paragraph 7 of Appendix 13 to Subpart B)

d. 1. If a visual requirement is met only with the use of correction, the spectacles or contact lenses must provide optimal visual function and be well-tolerated and suitable for aviation purposes. Orthokeratological lenses shall not be used.
   2. Correcting lenses, when worn for aviation purposes, shall permit the licence holder to meet the visual requirements at all distances. No more than one pair of spectacles shall be used to meet the requirements.
   3. Contact lenses, when worn for aviation purposes, shall be monofocal, for distant vision and not-tinted.
   4. A spare set of similarly correcting spectacles shall be readily available when exercising the privileges of the licence.
   5. Sunglasses.
      AMce optometry office is responsible for coordinating (prescribing, ordering, fitting, as required) spectacle-based vision correction for Dutch aircrew.

Appendix 13 to Subpart B Visual requirements

(See MAR–FCL 3.210 and 3.215)

6. Heterophorias. If the fusional reserves are sufficient to prevent asthenopia and diplopia the AMS may consider a fit assessment. The applicant/certificate holder shall be reviewed by an ophthalmologist acceptable to the AMS. The fusional reserve shall be tested using a method acceptable to the AMS (e.g. Goldman Red/Green binocular fusion test).

7. An applicant with a visual field defect may be considered as fit if the binocular visual field is normal and the underlying pathology is acceptable to the AMS.

8. Authorized non-prescription sun protection consists of an Aircrew Flight Frame (AFF) series spectacle frame combined with neutral density lenses not influencing color safety.
   No other sun protection tint or spectacle frame is authorized for use in RNLAF aircraft by RNLAF aircrew or RNLAF contracted aircrew.
   Aircrew requiring prescription eyewear are authorized two sets of clear and one set of sun protection eyewear (three pairs of spectacles) for flight duties.
   Aircrew not requiring prescription sun protective eyewear or who wear contact lenses for in-flight duties are authorized non-prescription sun protection eyewear for flight duties.

MAR–FCL 3.215 Visual requirements

e. Eye Surgery.

1. Refractive surgery entails unfitness. A fit assessment may be considered by the AMS. (See paragraph 9 of Appendix 13 to Subpart B)

2. Other ophthalmological surgery entail unfitness. At revalidation / renewal a fit assessment may be considered by the AMS. (See paragraph 10 of Appendix 13 to Subpart B)

Appendix 13 to Subpart B Visual requirements

(See MAR–FCL 3.210 and 3.215)

9. After refractive surgery, a fit assessment may be considered after 3 months by the AMS provided that:
   a. pre-operative refraction (as defined in MAR-FCL 3.220b) was no greater than + 5 or – 6.0 dioptres;
   b. the applicant was at least 21 years old at the time of the operation;
   c. pre-operative astigmatic component was not greater than 3.0 dioptres;
   d. no significant pathology can be demonstrated;
   e. after surgery a satisfactory stability of refraction has been achieved (less than 0.75 dioptres variation diurnally);
   f. examination of the eye shows no postoperative complications like haze;
   g. glare sensitivity is within normal standards;
   h. mesopic contrast sensitivity is not impaired;
   i. review is undertaken by an ophthalmologist acceptable to the AMS at the discretion of the AMS.

10.a. Cataract surgery. A fit assessment may be considered by the AMS after 3 months, provided that the visual requirements are met either with contact lenses or with intraocular lenses (mono-focal, non-tinted).
   b. Retinal surgery. A fit assessment at revalidation or renewal may be considered by the AMS normally 6 months after successful surgery or retinal Laser therapy. Follow-up, as necessary, will be determined by the AMS.
   c. Glaucoma surgery. A fit assessment may be considered by the AMS 6 months after successful surgery at revalidation or renewal. The applicant should be re-examined by an ophthalmologist semi-annually.

MAR–FCL 3.220 Colour perception

a. Normal colour perception is defined as the ability to pass the Ishihara test and HRR test or to pass Nagel's anomaloscope as a normal trichromat. (See paragraph 1 of Appendix 14 to Subpart B)

b. An applicant shall have normal perception of colours or be colour safe. At the initial examination applicants have to pass the Ishihara test and the HRR test. Applicants who fail Ishihara test or HRR test shall be assessed as colour safe only if they pass extensive testing with methods acceptable to the AMS. (Anomaloscopy and Cone Contrast Test (CCT) – see paragraph 2 of Appendix 14 to Subpart B) At revalidation or renewal colour vision needs only to be tested by the HRR test at the extended ophthalmological examination.

c. An applicant who fails the acceptable colour perception tests is to be considered colour unsafe and shall be assessed as unfit.

Appendix 14 to Subpart B Colour perception

(See MAR–FCL 3.220)

1. The Ishihara test (24 plate version) is to be considered passed if the first 19 plates are identified without error, without uncertainty or hesitation (less than 3 seconds per plate). These plates shall be presented randomly. For lighting conditions see the JAA Manual of Civil Aviation Medicine.

2. Those failing the Ishihara test shall be examined either by:
   a. Anomaloscopy (Nagel or equivalent). This test is considered passed if the colour match is trichromatic and the matching range is 4 scale units or less, or by
   b. Cone Contrast Test (CCT). This test is considered passed if the applicant gets a score of 75 out of 100, or higher.

MAR–FCL 3.225 Otorhinolaryngological requirements

a. An applicant for or holder of a Class 1 MMC shall not possess any abnormality of the function of the ears, nose, sinuses or throat (including oral cavity, teeth and larynx), or any active pathological condition, congenital or acquired, acute or chronic, or any sequela of surgery and trauma which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

b. A comprehensive otorhinolaryngological examination is required at the initial examination and subsequently on clinical indication (comprehensive examination – see paragraph 1 and 2 of Appendix 15 to Subpart B) and shall include:
   1. history;
      i: special attention should be paid to the history of allergic rhinitis, nose passage problems, chronic sinusitis, sinus block and tuba dysfunction;
      ii: special attention should be paid to snoring and fatigue during the day;
   2. clinical examination including otoscopy, rhinoscopy, and examination of the mouth and throat;
   3. tympanometry or equivalent;
   4. clinical assessment of the vestibular system.

   All abnormal and doubtful cases within the ENT region shall be referred to a specialist in aviation otorhinolaryngology acceptable to the AMS.

c. A routine Ear-Nose-Throat examination shall form part of all revalidation and renewal examinations. (See paragraph 1 and 2 Appendix 15 to Subpart B)

Appendix 15 to Subpart B Otorhinolaryngological requirements

(See MAR–FCL 3.225)

1. At the initial examination a comprehensive othorhinolaryngological examination shall be carried out by an AeMC or a specialist in aviation otorhinolaryngology acceptable to the AMS.

2. At revalidation or renewal examinations all abnormal and doubtful cases within the ENT region shall be referred to a specialist in aviation otorhinolaryngology acceptable to the AMS.

MAR–FCL 3.225 Otorhinolaryngological requirements

d. Presence of any of the following disorders in an applicant shall result in an unfit assessment.
   1. Active pathological process, acute or chronic, of the internal or middle ear.
   2. Unhealed perforation or dysfunction of the tympanic membranes. (See paragraph 3 of Appendix 15 to Subpart B)
   3. Disturbances of vestibular function. (See paragraph 4 of Appendix 15 to Subpart B)
   4. Significant restriction of the nasal air passage on either side, or any dysfunction of the sinuses. (See paragraph 5 of Appendix 15 to Subpart B)
   5. Perforation of the nasal septum.
   6. Significant malformation or significant, acute or chronic infection of the oral cavity or upper respiratory tract.
   7. Significant disorder of speech or voice.
   8. Anosmia.
   9. Otosclerosis at initial examination.
   10. Treated or untreated allergic rhinitis with symptoms of an impaired nasal airway, recurrent sinusitis, recurrent sinus blocks or Eustachian tube dysfunction is disqualifying. (See paragraph 5 of Appendix 15 to Subpart B)
   11. Obstructive Sleep Apnoea Syndrome (OSAS) is disqualifying. (See paragraph 6 of Appendix 15 to Subpart B)

e. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 15 to Subpart B Otorhinolaryngological requirements

(See MAR–FCL 3.225)

3. Dry perforation(s) of non-infectious origin which do not interfere with the normal function of the ear may be considered acceptable for certification.

4. The presence of spontaneous or positional nystagmus shall entail complete vestibular evaluation by a specialist acceptable to the AMS. In such cases no significant abnormal caloric or rotational vestibular responses can be accepted. At revalidation or renewal examinations abnormal vestibular responses shall be assessed in their clinical context by the AMS.

5. Allergic rhinitis is disqualifying. A fit assessment may be considered by the AMS if the applicant is without symptoms, with or without medication. Untreated allergic rhinitis with symptoms of an impaired nasal airway, recurrent sinusitis, recurrent sinus blocks or Eustachian tube dysfunction is disqualifying

6. At initial examination OSAS is disqualifying. At renewal and revalidation untreated OSAS is disqualifying. A fit assessment may be considered by AMS when OSAS is treated and has an AHI score of < 15 without complaints, yearly follow up by ENT stays necessary (SIC)

MAR–FCL 3.230 Hearing requirements

a. Hearing shall be tested at all examinations. The applicant shall be able to understand correctly ordinary conversational speech when tested with each ear at a distance of 2 metres from and with his back turned towards the FS.

b. A hearing test with pure tone audiometry (See paragraph 1 Appendix 16 to Subpart B) is required at the first examination and at every examination thereafter.
   1. At initial examination there shall be no hearing loss in either ear, when tested separately of more than 20 dB (HL) at any of the frequencies 500, 1000, and 2000 Hz, or more than 30 dB (HL) at 3000 Hz.
   2. At revalidation or renewal there shall be no hearing loss in either ear, when tested separately of more than 35 dB at the frequencies of 500, 1000 and 2000 Hz and more than 50 dB at 3000 Hz.
   3. Cases of hypoacusis shall be referred to the AMS for further evaluation and assessment. (See paragraph 2 and 3 Appendix 16 to Subpart B)

Appendix 16 to Subpart B Hearing requirements

(See MAR–FCL 3.230)

1. The pure tone audiogram shall cover the frequencies from 250-8000 Hz. Frequency thresholds shall be determined as follows:
   500 Hz
   1000 Hz
   2000 Hz
   3000 Hz

2. Applicants for initial examination who do not meet the hearing requirements shall be referred to an ENT specialist for further examination. They may be assessed as fit by the AMS if ENT evaluation shows no signs of disease and a speech discrimination test demonstrates a satisfactory hearing ability.

3. At revalidation or renewal an applicant with hypoacusis may be assessed as fit by the AMS if a functional hearing test demonstrates a satisfactory hearing ability (tested in a noise field corresponding to normal flight deck working conditions during all phases of flight).

MAR-FCL 3.235 Dental Requirements

(See MAR-FCL 3.225 a and d.6)
(See GM FCL 3.235)

a. The holder of a Class 1 MMC shall be dentally fit to exercise safely the privileges of the applicable licence.

b. An applicant for or holder of a MMC shall not possess any abnormality of the function of the oral cavity and teeth, which is likely to interfere with the safe exercise of the privileges of the applicable licence(s). (See Paragraph 1 of Appendix 17 to Subpart B)

c. The system used for assessing the dental health status is the dental fitness (DF) classification system. All applicants shall be DF class 1 in order to be declared fit for flight. (See Paragraph 2 of Appendix 17 to Subpart B)

d. The dental record, including radiographs, is used as an initial document for forensic identification and should be complete and up to date at all times. The importance of this record cannot be overemphasized.

Appendix 17 to Subpart B Dental requirements

(See MAR-FCL 3.235)

1. The review and evaluation of each applicant's dental/oral health status must describe if there are any limitations which will adversely affect the safe exercise of the privileges of the applicable licence(s). All cases will be assessed by a dental officer.

2. All applicants will be assessed on an individual case-by-case basis. In any case in which the rejection of the applicant is recommended by the dental officer, the evaluation must clearly indicate why the applicant's dental condition precludes exercising safely the privileges of the applicable licence.

MAR–FCL 3.240 Psychological requirements

a. An applicant for or holder of a Class 1 MMC shall have no established psychological deficiencies, particularly in operational aptitudes or any relevant personality factor, which are likely to interfere with the safe exercise of the privileges of the applicable licence(s). A psychological evaluation may be required by the AMS where it is indicated as part of, or complementary to, a specialist psychiatric or neurological examination. (See paragraph 1 and 2 of Appendix 18 to Subpart B)

b. When a psychological evaluation is indicated, it shall be carried out by a psychologist with extensive knowledge of the aviation environment acceptable to the AMS. The psychologist shall submit a written report to the AMS, detailing his opinion and recommendation. (See paragraph 2 to Appendix 18 to Subpart B)

c. An applicant who exhibits inability to cope with stress or stress-related problems to an extent where the symptoms are likely to interfere with an individual's ability to exercise safely the privileges of the licence/certificate of competence shall be assessed as unfit. (However, see paragraph 3 and 4 of Appendix 18 to Subpart B)

Appendix 18 to Subpart B Psychological requirements

(See MAR–FCL 3.240)

1. Indication. A psychological evaluation should be considered as part of, or complementary to, a specialist psychiatric or neurological examination when the AMS receives verifiable information from an identifiable source which evokes doubts concerning the mental fitness or personality of a particular individual. Sources for this information can be accidents or incidents, problems in training or proficiency checks, delinquency or knowledge relevant to the safe exercise of the privileges of the applicable licences. Within psychiatric management, psychological assessment may have a pivotal role in enabling the psychiatrist to make a holistic assessment.

2. The psychological evaluation should be broad-based and may include a collection of medical history, biographical data, life-event history and aptitude testing, in addition to personality tests and psychological interview.

3. If stress-related problems, which are likely to interfere with safe exercise of the privileges of the individual's licence/certificate of competence, are reported or indicated, a psychological evaluation by an appropriately qualified specialist acceptable to the AMS may be required. (See MAR-FCL 3.485 c.)

4. Coping with stress includes the following:
   a. coping with high workload;
   b. coping with boredom;
   c. 'unwinding' after work;
   d. controlling anxiety and anger;
   e. managing critical incidents.

   If there are indications of a lack of skills or of incidents relating to any of the above, the applicant should be referred to an appropriately qualified specialist acceptable to the AMS.

MAR–FCL 3.245 Dermatological requirements

a. An applicant for, or holder of a Class 1 MMC shall have no established dermatological condition, likely to interfere with the safe exercise of the privileges of the applicable licence(s).

b. Particular attention should be paid to chronic and residual skin diseases. (See paragraph 1 and 2 of Appendix 19 to Subpart B) Referral to the AMS shall be made if doubt exists about any condition.

c. In case of dermatological aspects of a generalised condition, an assessment of treatment and any underlying condition is required before fit assessment by the AMS.

d. Malignant conditions of the skin need referral to dermatologist. (See paragraph 3 of Appendix 19 to Subpart B) The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 19 to Subparts B Dermatological requirements

(See MAR–FCL 3.245)

1. Any skin condition causing pain, discomfort, irritation or itching can distract flight crew from their tasks and thus affect flight safety (e.g. eczema of any cause, psoriasis, bacterial infections, candidiasis, drug induces eruptions, urticarial).

2. Any skin treatment, radiant or pharmacological, may have systemic effects which must be considered before fit assessment.

3. Malignant or Pre-malignant Conditions of the Skin
   a. Malignant melanoma, squamous cell epithelioma, Bowen's disease and Paget's disease are disqualifying. A fit assessment may be considered by the AMS if, when necessary, lesions are totally excised and there is adequate follow-up. An OML may be required.
   b. In case of basal cell epithelioma, rodent ulcer, keratoacanthoma or actinic keratoses a fit assessment may be considered after treatment and/or excision in order to maintain certification.

MAR-FCL 3.246 Oncology

a. An applicant for, or holder of a Class 1 MMC shall have no established primary or secondary malignant disease, likely to interfere with the safe exercise of the privileges of the applicable licence(s).

b. Any malignant disease entails unfitness. At initial, revalidation or renewal a fit assessment may be considered by the AMS after successful treatment. (See paragraph 1 and 2 of Appendix 20 to Subpart B)

c. In the assessment of malignant conditions, the Chapter specific to the relevant system should always be consulted in combination with this Chapter.

Appendix 20 to Subparts B Oncology Requirements

(See MAR-FCL 3.246)

1. A fit assessment may be considered by the AMS if:
   a. There is no evidence of residual malignant disease after treatment;
   b. A period of time appropriate to the type of tumour has elapsed since the end of treatment;
   c. The risk of inflight incapacitation from a recurrence or metastasis is within limits acceptable to the AMS;
   d. There is no evidence of short or long-term sequelae from treatment. Special attention shall be paid to applicants who have received anthracycline chemotherapy;
   e. Arrangements for follow-up are acceptable to the AMS.

2. An OML may be appropriate.

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SUBPART C – CLASS 2 MEDICAL REQUIREMENTS

MAR–FCL 3.250 Cardiovascular system – Examination

a. An applicant for or holder of a Class 2 MMC shall not possess any abnormality of the cardiovascular system, congenital or acquired, which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

b. A standard 12-lead resting electrocardiogram (ECG) and report are required at the examination for first issue of an MMC, and at all revalidation or renewal examinations thereafter and on clinical indication.

c. Exercise electrocardiography (symptom limited to Bruce Stage IV or equivalent) is required at the first examination after the 40th birthday and when clinically indicated in compliance with paragraph 1 of Appendix 1 to Subpart C.

d. Reporting of resting and exercise electrocardiograms shall be carried out by FS or other specialists acceptable to the AMS.

e. Estimation of serum lipids including cholesterol and HDL Cholesterol, is required to facilitate risk assessment at the examination for first issue of a MMC, and at all revalidation or renewal examinations thereafter and on clinical indication. (See paragraph 2 of Appendix 1 to Subpart C)

Appendix 1 to Subpart C Cardiovascular system

(See MAR–FCL 3.250 through 3.270)

1. Exercise electrocardiography shall be required:
   a. When indicated by signs or symptoms suggestive of cardiovascular disease;
   b. For clarification of a resting electrocardiogram; or
   c. At the discretion of an aeromedical specialist acceptable to the AMS.

2. a. Serum lipid estimation is case finding and significant abnormalities shall require review, investigation and supervision by the AeMC or FS in conjunction with the AMS.
   b. An accumulation of risk factors (smoking, diabetes, family history, lipid abnormalities, hypertension, metabolic syndrome etc.) shall require cardiovascular evaluation by the AeMC or FS in conjunction with the AMS, and cardiologist, acceptable to the AMS.

MAR–FCL 3.255 Cardiovascular system – Blood pressure

a. The blood pressure shall be recorded with the technique given in paragraph 3 of Appendix 1 to Subpart C at each examination.

b. When the blood pressure at initial examination consistently exceeds 140 mmHg systolic and/or 90 mmHg diastolic with or without treatment the applicant shall be assessed as unfit. At revalidation or renewal, a blood pressure of 141-160 mmHg systolic and/or 91-95 mmHg diastolic, with or without treatment, may be acceptable to the AMS. The diagnosis of hypertension shall require review of other potential vascular risk factors. (See paragraph 4 Appendix 1 Subpart C)

c. Treatment for the control of blood pressure shall be compatible with the safe exercise of the privileges of the applicable licence(s) and be compliant with paragraph 5 of Appendix 1 to Subpart C. The initiation of medication shall require a period of temporary suspension of the MMC to establish the absence of significant side effects.

d. Applicants with symptomatic hypertension or hypertension with comorbidity shall be assessed as unfit and may be referred to a specialist acceptable to AMS. (See paragraph 6 Appendix 1 Subpart C)

e. Applicants with symptomatic hypotension shall be assessed as unfit.

Appendix 1 to Subpart C Cardiovascular system

(See MAR–FCL 3.250 through 3.270)

3. The systolic pressure shall be recorded at the appearance of the Korotkoff sounds (phase I) and the diastolic pressure at their disappearance (phase V). The blood pressure should be measured twice. Half hour tension recording may be applied, automatic blood pressure equipment acceptable to the AMS shall be used. If the blood pressure is raised and/or the resting heart rate is increased, further observations should be made during the assessment.

4. A candidate with a systolic blood pressure between 140-160 mmHg and/or a diastolic blood pressure between 90-95 mmHg, shall undergo observations on a regular basis (monthly). The results of these observations shall be part of the revalidation or renewal medical examination.

5. Anti-hypertensive treatment shall be agreed by the AMS. Drugs acceptable to the AMS may include:
   a. non-loop diuretic agents;
   b. certain (generally hydrophilic) beta-blocking agents;
   c. ACE Inhibitors;
   d. angiotensin II AT1 blocking agents (the sartans); or
   e. slow channel calcium blocking agents.

   At commencement of anti-hypertensive treatment, the individual will be assessed as temporarily unfit because of potential side-effects, until the blood pressure is satisfactory controlled without side-effects.

6. Symptomatic hypertension or hypertension with comorbidity may require a MMC issued after review procedure, a REV limitation may apply.

MAR–FCL 3.260 Cardiovascular system – Coronary artery disease

a. Applicants with suspected coronary artery disease shall be investigated. Those with asymptomatic, minor, coronary artery disease, requiring no treatment, may be assessed as fit by the AMS if the investigations in paragraph 7 of Appendix 1 to Subpart C are completed satisfactorily.

b. Applicants with symptomatic coronary artery disease, or with cardiac symptoms controlled by medication, shall be assessed as unfit.

c. After an ischaemic cardiac event (defined as a myocardial infarction, angina, significant arrhythmia or heart failure due to ischaemia, or any type of cardiac revascularization) a fit assessment for initial applicants is not possible. At revalidation or renewal, a fit assessment may be considered by the AMS if the investigations in paragraph 8 of Appendix 1 to Subpart C are completed satisfactorily.

Appendix 1 to Subpart C Cardiovascular system

(See MAR–FCL 3.250 through 3.270)

7. In suspected asymptomatic coronary artery disease, or peripheral arterial disease, or BMI >30 with an increased cardiovascular risk (See MAR-FCL 3.295 Metabolic, nutritional and endocrine disease) exercise electrocardiography (according to paragraph 7.a. Appendix 1 to Subpart C) shall be required followed, if necessary, by further tests (myocardial perfusion scanning, stress echocardiography, coronary angiography or equivalent investigations acceptable to the AMS) which shall show no evidence of myocardial ischaemia or significant coronary artery stenosis.

8. After an ischaemic cardiac event, including revascularization, or peripheral arterial disease, applicants without symptoms shall have reduced any vascular risk factors to an appropriate level. Medication, when used only to control cardiac symptoms, are not acceptable. All applicants should be on acceptable secondary prevention treatment.
   A coronary angiogram obtained around the time of, or during, the ischaemic cardiac event shall be available. A complete and detailed clinical report of the ischaemic event, the angiogram and any operative procedures shall be available to the AMS.
   There shall be no stenosis more than 50% with functional flow limitation in any major untreated vessel, in any vein or artery graft or at the site of an angioplasty/stent, except in a vessel leading to an infarct. More than two stenoses between 30% and 50% with functional flow limitation within the vascular tree should not be acceptable.
   The whole coronary vascular tree shall be assessed as satisfactory by a cardiologist acceptable to the AMS, and particular attention should be paid to multiple stenoses and/or multiple revascularizations.
   An untreated stenosis greater than 30% with functional flow limitation in the left main or proximal left anterior descending coronary artery should not be acceptable.

Appendix 1 to Subpart C Cardiovascular system

(See MAR–FCL 3.250 through 3.270)

8. At least 6 months from the ischaemic cardiac event, including revascularization, the following investigations shall be completed:
   a. an exercise ECG (symptom limited to Bruce Stage IV, or equivalent), showing no evidence of myocardial ischaemia nor rhythm disturbance;
   b. an echocardiogram (or equivalent test acceptable to the AMS) showing satisfactory left ventricular function with no important abnormality of wall motion (such as dyskinesia or akinesia) and a left ventricular ejection fraction of 50% or more;
   c. in cases of angioplasty/stenting, a myocardial perfusion scan or stress echocardiography (or equivalent test acceptable to the AMS) which shall show no evidence of reversible myocardial ischaemia. If there is any doubt about myocardial perfusion in other cases (infarction or bypass grafting) a perfusion scan will also be required; and
   d. further investigations, such as a 24-hour ECG, shall be necessary to assess the risk of any significant rhythm disturbance.

   Follow-up shall be yearly (or more frequently if necessary) to ensure that there is no deterioration of cardiovascular status. It shall include a review by a specialist acceptable to the AMS, exercise ECG and cardiovascular risk assessment. Additional investigations may be required by the AMS. After coronary revascularisation, a myocardial perfusion scan (or equivalent test acceptable to the AMS) shall be performed if there is any indication, and in all cases within five years from the procedure.

   In all cases coronary angiography, or an equivalent test acceptable to the AMS, shall be considered at any time if symptoms, signs or non-invasive tests indicate cardiac ischaemia.

   AMS assessment

   Applicants having fulfilled the criteria mentioned in paragraph 8 may fly without limitations.

MAR–FCL 3.265 Cardiovascular system – Rhythm/conduction disturbances

a. Applicants with disturbance of supraventricular rhythm, including sinoatrial dysfunction, whether intermittent or established shall be assessed as unfit. A fit assessment may be considered by the AMS in compliance with paragraph 9 of Appendix 1 to Subpart C.

b. Applicants with asymptomatic sinus bradycardia or sinus tachycardia may be assessed as fit in the absence of underlying abnormality.

c. Applicants with asymptomatic isolated uniform supraventricular or ventricular ectopic complexes need not be assessed as unfit. Frequent or complex forms require full cardiological evaluation in compliance with paragraph 9 of Appendix 1 to Subpart C.

Appendix 1 to Subpart C Cardiovascular system

(See MAR–FCL 3.250 through 3.270)

9. Any significant rhythm or conduction disturbance requires evaluation by a cardiologist acceptable to the AMS and appropriate follow-up in the case of a fit assessment.
   a. Such evaluation shall include:
      1. Exercise ECG to the Bruce protocol or equivalent. The test should be to maximum effort or symptom limited Bruce Stage IV shall be achieved and no significant abnormality of rhythm or conduction, nor evidence of myocardial ischaemia shall be demonstrated. Withdrawal of cardioactive medication prior to the test should be considered;
      2. 24-hour ambulatory ECG which shall demonstrate no significant rhythm or conduction disturbance; and
      3. 2D Doppler echocardiogram which shall show no significant selective chamber enlargement, or significant structural, or functional abnormality, and a left ventricular ejection fraction of at least 50%.
   b. Further evaluation may include:
      1. repeated 24-hour ECG recording;
      2. electrophysiological study;
      3. myocardial perfusion scanning, or equivalent test;
      4. cardiac MRI or equivalent test; or
      5. coronary angiogram or equivalent test. (See Appendix 1 paragraph 7)

MAR–FCL 3.265 Cardiovascular system – Rhythm/conduction disturbances

d. In the absence of any other abnormality, applicants with incomplete bundle branch block or stable left axis deviation may be assessed as fit.

e. Applicants with complete right bundle branch block require cardiological evaluation on first presentation and subsequently in compliance with appropriate items in paragraph 9 of Appendix 1 to Subpart C.

f. Applicants with complete left bundle branch block shall be assessed as unfit. A fit assessment may be considered by the AMS in compliance with paragraph 9 of Appendix 1 to Subpart C.

g. Applicants with first degree and Mobitz type 1 A-V block may be assessed as fit in the absence of underlying abnormality. Applicants with Mobitz type 2 or complete A-V block shall be assessed as unfit. A fit assessment may be considered by the AMS in compliance with paragraph 9 of Appendix 1 to Subpart C.

h. Applicants with broad and/or narrow complex tachycardias shall be assessed as unfit. A fit assessment may be considered by the AMS subject to compliance with paragraph 9 of Appendix 1 to Subpart C.

Appendix 1 to Subpart C Cardiovascular system

(See MAR–FCL 3.250 through 3.270)

9. c. AMS Assessment
    1. Atrial fibrillation/flutter
        i. For initial applicants a fit assessment shall be limited to those with a single episode of arrhythmia without dizziness which is considered by the AMS to be unlikely to recur.
        ii. Revalidation/renewal shall be determined by the AMS.
        iii. After a pulmonary vein isolation or comparable procedure aimed at the treatment of the atrial fibrillation, revalidation or renewal applicants are unfit to fly during 6 months. A fit to fly assessment may be considered following a cardiac evaluation satisfactory to the AMS. A yearly cardiologic evaluation shall be necessary (SIC limitation).
    2. Complete right bundle branch block
       For initial or revalidation/renewal certification a fit assessment may be considered by the AMS if the applicant is under age 40 years. If over age 40 years, initial or revalidation/renewal applicants should demonstrate a period of stability (= clinically stable and no progression of the conduction disturbance), normally 12 months.
    3. Complete left bundle branch block
       Investigation of the coronary arteries is necessary in applicants over age 40.
        i. Initial applicants should demonstrate a 3-year period of stability (= clinically stable and no progression of the conduction disturbance).
        ii. For revalidation/renewal, after a 3-year period with a MMC issued after review procedure (REV) a fit assessment without limitation may be considered.

MAR–FCL 3.265 Cardiovascular system – Rhythm/conduction disturbances

i. Applicants with ventricular pre-excitation shall be assessed as unfit. A fit assessment may be considered by the AMS subject to compliance with paragraph 9 of Appendix 1 to Subpart C.

j. Applicants with an endocardial pacemaker shall be assessed as unfit. A fit assessment may be considered by the AMS subject to compliance with paragraph 9 of Appendix 1 to Subpart C.

k. Applicants who have received ablation therapy shall be assessed as unfit. A fit assessment may be considered by the AMS in compliance with paragraph 9 of Appendix 1 to Subpart C.

Appendix 1 to Subpart C Cardiovascular system

(See MAR–FCL 3.250 through 3.270)

9. c. 4. Ventricular pre-excitation
    i. Asymptomatic initial applicants with pre-excitation may be assessed as fit by the AMS if an electrophysiological study, including adequate drug-induced autonomic stimulation reveals no inducible re-entry tachycardia or malignant properties of the accessory pathway, and the existence of multiple pathways is excluded.
    ii. At revalidation/renewal asymptomatic applicants with non-malignant pre-excitation may be assessed as fit by the AMS without limitation.

5. Pacemaker
   Following permanent implantation of a subendocardial pacemaker a fit assessment which shall be no sooner than three months after insertion shall require:
   i. no other disqualifying condition;
   ii. a bipolar lead system;
   iii. that the applicant is not pacemaker dependent;
   iv. regular follow-up including a pacemaker check; and
   v. at revalidation/renewal a fit assessment requires a MMC issued after review procedure (REV)

6. Ablation
   After successful ablation an applicant shall be unfit to fly for a period of 3 months. At initial, revalidation / renewal applicants may be assessed as fit following a cardiac evaluation satisfactory to the AMS.
   For those in whom the long-term outcome cannot be assured by invasive or non-invasive testing, a cardiological evaluation shall be necessary, and an additional period with special regular medical examination(s) SIC limitation may be required.

MAR–FCL 3.270 Cardiovascular system – General

a. Applicants with peripheral arterial disease before or after surgery shall be assessed as unfit. Provided there is no significant functional impairment a fit assessment may be considered by the AMS subject to compliance with paragraphs 7 and 8 of Appendix 1 to Subpart C.

b. Applicants with aneurysm of the thoracic or abdominal aorta, before or after surgery, shall be assessed as unfit. Applicants with infra-renal abdominal aortic aneurysm may be assessed as fit by the AMS subject to compliance with paragraph 10 of Appendix 1 to Subpart C.

c. Applicants with significant abnormality of any of the heart valves shall be assessed as unfit.
   1. Applicants with minor cardiac valvular abnormalities may be assessed as fit by the AMS subject to compliance with paragraph 11 a and b of Appendix 1 to Subpart C.
   2. Applicants with cardiac valve replacement/repair shall be assessed as unfit. A fit assessment may be considered by the AMS subject to compliance with paragraph 11.c of Appendix 1 to Subpart C.

Appendix 1 to Subpart C Cardiovascular system

(See MAR–FCL 3.250 through 3.270)

10. Applicants with unoperated infra-renal abdominal aortic aneurysms shall be assessed as unfit. Follow-up by ultra-sound scans, as necessary, will be determined by the AMS. After surgery for infra-renal abdominal aortic aneurysm without complications, and after cardiovascular assessment, a fit assessment without limitation may be considered by the AMS.

11. a. Applicants with previously unrecognised cardiac murmurs shall require evaluation by a cardiologist acceptable to the AMS and assessment by the AMS. If considered significant, further investigation shall include at least 2D Doppler echocardiography.
    b. Valvular Abnormalities
       1. Applicants with bicuspid aortic valve may be assessed as fit without a limitation if no other cardiac or aortic abnormality is demonstrated. Follow-up with echocardiography, as necessary, will be determined by the AMS. Until the age of 30 years, the follow-up shall be 2 yearly, after the 30th birthday, the follow-up shall be yearly.
       2. Applicants with aortic stenosis requires AMS review. Left ventricular function must be intact. A history of systemic embolism or significant dilatation of the thoracic aorta are disqualifying. Those with a mean pressure gradient of up to 20 mmHg may be assessed as fit. Those with mean pressure gradient above 20 mmHg but no greater than 40 mmHg may be assessed as fit without limitation. A mean pressure gradient up to 50 mmHg may be acceptable, at the discretion of the AMS. Follow-up with 2D Doppler echocardiography, as necessary, will be determined by the AMS.
       3. Applicants with aortic regurgitation may be assessed as fit without a limitation only if trivial. There shall be no demonstrable abnormality of the ascending aorta on 2D Doppler echocardiography. Follow-up, as necessary, will be determined by the AMS.
       4. Applicants with rheumatic mitral valve disease shall normally assessed as unfit.
       5. Mitral leaflet prolapse/mitral regurgitation. Asymptomatic applicants with isolated mid-systolic click may need no limitation. Applicants with uncomplicated minor regurgitation may require a limitation as determined by the AMS. Applicants with evidence of volume overloading of the left ventricle demonstrated by increased left ventricular end-diastolic diameter shall be assessed as unfit. Periodic review and assessment as determined by the AMS is required.

Appendix 1 to Subpart C Cardiovascular system

(See MAR–FCL 3.250 through 3.270)

11.c. Valvular surgery

1. Applicants with implanted mechanical valves shall be assessed as unfit.
2. Asymptomatic applicants with a tissue valve who at least 6 months following surgery shall have satisfactorily completed investigations which demonstrate normal valvular and ventricular configuration and function may be considered for a fit assessment by the AMS as judged by:
   i. a satisfactory symptom limited exercise ECG to Bruce Stage IV or equivalent which a cardiologist acceptable to the AMS interprets as showing no significant abnormality. Myocardial scintigraphy/stress echocardiography shall be required if the resting ECG is abnormal and any coronary artery disease has been demonstrated. See also paragraphs 7, 8 and 9 of Appendix 1 to Subparts C;
   ii. a 2D Doppler echocardiogram showing no significant selective chamber enlargement, a tissue valve with minimal structural alterations and with a normal Doppler blood flow, and no structural, nor functional abnormality of the other heart valves. Left ventricular fractional or shortening shall be normal;
   iii. the demonstrated absence of coronary artery disease unless satisfactory re-vascularisation has been achieved – see paragraph 8 above;
   iv. the absence of requirement for cardioactive medication; or
   v. follow-up with exercise ECG and 2D echocardiography, as necessary, will be determined by the AMS.

A fit assessment may be applicable without a limitation.

MAR–FCL 3.270 Cardiovascular system – General

d. Systemic anticoagulant therapy or equivalent therapy (for instance NAOC's) is disqualifying. Applicants who have received treatment of limited duration, may be considered for a fit assessment by the AMS subject to compliance with paragraph 12 of Appendix 1 to Subpart C.

e. Applicants with any abnormality of the pericardium, myocardium or endocardium not covered above shall be assessed as unfit. A fit assessment may be considered by the AMS following complete resolution and satisfactory cardiological evaluation in compliance with paragraph 13 of Appendix 1 to Subpart C.

Appendix 1 to Subpart C Cardiovascular system

(See MAR–FCL 3.250 through 3.270)

12. Applicants following anticoagulant therapy require review by the AMS. Venous thrombosis or pulmonary embolism is disqualifying until anticoagulation has been discontinued. Pulmonary embolus requires full evaluation. Anticoagulation for possible arterial thromboembolism is disqualifying.

13. Applicants with abnormalities of the epicardium/myocardium and/or endocardium, primary or secondary, shall be assessed as unfit until clinical resolution has taken place. Cardiovascular assessment by the AMS may include 2D Doppler echocardiography, exercise ECG and/or myocardial scintigraphy/stress echocardiography and 24-hour ambulatory ECG. Coronary angiography may be indicated. A yearly cardiological evaluation shall be necessary, an additional period with special regular medical examination(s) – SIC limitation shall be necessary.
    a. Pericarditis:
    A fit assessment may be considered by the AMS, 6 months after full recovery of a non-constrictive pericarditis and after satisfactory cardiological evaluation by a cardiologist, acceptable to the AMS. Yearly cardiological evaluation shall be necessary, an additional period with special regular medical examination(s) – SIC limitation shall be necessary for 2 years
    b. Cardiomyopathy is disqualifying. Yearly cardiological evaluation shall be necessary, an additional period with special regular medical examination(s) – SIC limitation shall be necessary.
    c. Myocarditis:
    A fit assessment for an applicant may be considered by the AMS, 6 months after full recovery and after cardiological evaluation including exercise ECG, 24-hour ECG recording and echocardiography showing a left ventricular ejection fraction of at least 50%. Yearly cardiological evaluation shall be necessary, an additional period with special regular medical examination(s) – SIC limitation shall be necessary for 2 years

MAR–FCL 3.270 Cardiovascular system – General

f. Applicants with congenital abnormality of the heart, before or after corrective surgery, shall be assessed as unfit. A fit assessment may be considered by the AMS in compliance with paragraph 14 of Appendix 1 to Subpart C.

g. Heart or heart/lung transplantation is disqualifying.

h. Applicants with a history of recurrent vasovagal syncope shall be assessed as unfit. A fit assessment may be considered by the AMS in an applicant with a suggestive history subject to compliance with paragraph 15 of Appendix 1 to Subpart C.

i. Applicants who suffered loss of consciousness without significant warning shall be assessed as unfit.

j. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 1 to Subpart C Cardiovascular system

(See MAR–FCL 3.250 through 3.270)

14. Applicants with congenital heart conditions including those surgically corrected, shall normally be assessed as unfit unless functionally unimportant and no medication is required. Cardiological assessment by the AMS shall be required. Investigations may include 2D Doppler echocardiography, exercise ECG and 24-hour ambulatory ECG. Regular cardiological review shall be required.

15. Applicants who have suffered recurrent episodes of syncope shall undergo the following:
    a. a symptom limited 12 lead exercise ECG to Bruce Stage IV, or equivalent, which a cardiologist acceptable to AMS interprets as showing no abnormality. If the resting ECG is abnormal, myocardial scintigraphy/stress echocardiography shall be required;
    b. a 2D Doppler echocardiogram showing no significant selective chamber enlargement nor structural nor functional abnormality of the heart, valves nor myocardium;
    c. a 24-hour ambulatory ECG recording showing no conduction disturbance, nor complex, nor sustained rhythm disturbance nor evidence of myocardial ischaemia; and
    d. may include a tilt test carried out to a standard protocol which in the opinion of a cardiologist acceptable to the AMS shows no evidence of vasomotor instability.

    Applicants fulfilling the above may be assessed as fit, may require an operational limitation not less than 6 months following an index event provided there has been no recurrence. Neurological review will normally be indicated. Shorter or longer periods of consideration may be accepted by the AMS according to the individual circumstances of the case.

MAR–FCL 3.275 Respiratory system – General

a. An applicant for, or the holder of, a Class 2 MMC shall not possess any abnormality of the respiratory system, congenital or acquired, which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

b. Posterior/anterior chest radiography is required only when indicated on clinical or epidemiological grounds.

c. Pulmonary function tests (See paragraph 1 of Appendix 2 to Subpart C) are required at the initial examination, at all revalidation or renewal examinations, and on clinical indication. Applicants with significant impairment of pulmonary function shall be assessed as unfit.

d. If pulmonary allergy is expected, further examination should take place. allergic disease should be excluded by methacholine and provocative pulmonary testing.

e. Any significant abnormality shall require further evaluation by a specialist in respiratory diseases.

MAR–FCL 3.280 Respiratory system – Disorders

a. Applicants with chronic obstructive airway disease shall be assessed as unfit. Applicants with only minor impairment of their pulmonary function requiring no medication, and without bullae on their chest X-ray may be assessed as fit. Where appropriate, applicants shall be referred to a specialist in respiratory diseases for assessment.

b. Applicants with asthma requiring medication shall be assessed in compliance with paragraph 2 of Appendix 2 to Subpart C.

c. Applicants with active inflammatory disease of the respiratory system shall be assessed as temporarily unfit. (See paragraph 3 and 4 of Appendix 2 Subpart C)

Appendix 2 to Subpart C Respiratory system

(See MAR–FCL 3.275 and 3.280)

1. Spirometry examination is required for all examinations. An FEV1/FVC ratio with a Z-score less than -1,96 shall require evaluation by a specialist in respiratory disease. At renewal or revalidation, a decrease in FEV1 >10% shall require evaluation by a specialist in respiratory disease.

2. Applicants experiencing recurrent attacks of asthma shall be assessed as unfit.
   a. At initial examination a fit assessment may be considered by the AMS after a free of attack period of 5 years.
   b. A fit assessment for revalidation or renewal may be considered by the FS in consultation with the AMS if considered stable with acceptable pulmonary function tests, medication compatible with flight safety (no systemic steroids), and a full report is submitted to the AMS.

3. Applicants with active Tuberculosis shall be assessed as temporarily unfit. A fit assessment after 6 months may be considered by the AMS after treatment with medication with full recovery.

4. Applicants with prophylactic treatment of tuberculosis may be considered fit after 2 weeks in the absence of serious side effects. (See GM to MAR-FCL 3.040)

MAR–FCL 3.280 Respiratory system – Disorders

d. Applicants with active sarcoidosis shall be assessed as unfit. (See paragraph 5 of Appendix 2 to Subpart C)

e. Applicants with spontaneous pneumothorax shall be assessed as unfit pending full evaluation in compliance with paragraph 6 of Appendix 2 to Subpart C.

f. Applicants with a traumatic pneumothorax shall be assessed as unfit pending full evaluation in compliance with paragraph 7 of Appendix 2 to Subpart C.

g. Applicants requiring major chest surgery shall be assessed as unfit for a minimum of three months following operation and until such time as the effects of the operation are no longer likely to interfere with the safe exercise of the privileges of the applicable licence(s). (See paragraph 8 of Appendix 2 to Subpart C) The underlying pathology which necessitated the surgery will need to be considered in the assessment process at revalidation or renewal.

Appendix 2 to Subpart C Respiratory system

(See MAR–FCL 3.275 and 3.280)

5. Applicants with active sarcoidosis are unfit. A fit assessment may be considered by the AMS if the disease is:
   a. investigated with respect to the possibility of systemic involvement;
   b. limited to hilar and mediastinal lymphadenopathy and the applicant requires no medication;
   c. pulmonary function test should be normal;

6 Spontaneous pneumothorax.
   a. A fit assessment following a fully recovered single spontaneous pneumothorax may be acceptable after one year from the event with full respiratory evaluation including CT scan or equivalent.
   b. At revalidation or renewal, a fit assessment may be considered by the AMS with an operational limitation (NDP) if the applicant fully recovers from a single spontaneous pneumothorax after 3 months. A fit assessment without limitation may be considered by the AMS after one year from the event with full respiratory investigation.
   c. A recurrent spontaneous pneumothorax is disqualifying. A fit assessment may be considered by the AMS following surgical intervention with a satisfactory recovery. Lung function must be normal.

7 Traumatic pneumothorax.
   a. A fit assessment after a traumatic pneumothorax may be considered by the AMS 3 months, after full recovery and after respiratory evaluation by a specialist, acceptable to the AMS.
   b. At revalidation or renewal, a fit assessment may be considered after 3 months, after full recovery and respiratory evaluation by a specialist, acceptable to the AMS.

MAR–FCL 3.280 Respiratory system – Disorders

h. Applicants suffering from excessive daytime sleepiness or with unsatisfactorily treated sleep apnoea syndrome shall be assessed as unfit. A fit assessment with SIC limitation, may be appropriate if acceptable treatment leads to satisfactory AHI (Apnoea Hypopnea Index) scores. See also the applicable paragraph in the Neurology and ENT section

i. Applicants with Pulmonary Emphysema shall be assessed as unfit (See paragraph 9 of Appendix 2 to Subpart C)

j. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 2 to Subpart C Respiratory system

(See MAR–FCL 3.275 and 3.280)

8. Pneumonectomy is disqualifying. A fit assessment following lesser chest surgery may be considered after at least 3 months by the AMS after satisfactory recovery and full respiratory evaluation including MRI or equivalent. A fit assessment following lobectomy may be considered after at least 1 year by the AMS after satisfactory recovery and full respiratory evaluation by a specialist, acceptable to the AMS.

9. A fit assessment may be considered by the AMS if the condition is not causing significant symptoms

MAR–FCL 3.285 Digestive System

a. An applicant for or holder of a Class 2 MMC shall not possess any functional or structural disease of the gastro-intestinal tract or its adnexa which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

b. Applicants with recurrent dyspeptic disorders requiring medication shall be assessed as unfit pending assessment. (See paragraph 1 of Appendix 3 to Subpart C)

c. Applicants with pancreatitis shall be assessed as unfit pending assessment. (See paragraph 2 of Appendix 3 to Subpart C)

d. Applicants with asymptomatic gallstones discovered incidentally shall be assessed in compliance with paragraph 3 of Appendix 3 to subpart C.

Appendix 3 to Subpart C Digestive system

(See MAR–FCL 3.285)

1. a. Applicants with recurrent dyspeptic disorder requiring medication shall be investigated. A fit assessment may be considered by the AMS after endoscopy showing no abnormalities and after full recovery. Medication will show no significant side-effects.
   b. Hiatus herniae is disqualifying. A fit assessment may be considered by the AMS after conservative treatment.
   c. Atrophic gastritis is disqualifying. A fit assessment at revalidation or renewal may be considered by the AMS if the applicant is without symptoms and there is no pernicious anaemia.
   d. Alcohol may be a cause of dyspepsia. If considered appropriate a full evaluation of its use/abuse is required. A fit assessment may be considered at revalidation or renewal by the AMS after successful treatment

2. a. Pancreatitis is disqualifying. A fit assessment may be considered by the AMS if the cause of obstruction (e.g. medication, gallstone) is removed.
   b. Alcohol may be a cause of pancreatitis. If considered appropriate a full evaluation of its use/abuse is required. A fit assessment may be considered at revalidation or renewal by the AMS after successful treatment.

3. Applicants with a single asymptomatic large gallstone may be assessed as fit after consideration by the AMS. An applicant with asymptomatic multiple gallstones may be assessed as fit by the AMS.

MAR–FCL 3.285 Digestive system

e. Applicants with an established diagnosis or history of chronic inflammatory bowel disease shall be assessed as unfit. (See paragraph 4 of Appendix 3 to Subpart C)

f. Applicants shall be completely free from herniae that might give rise to incapacitating symptoms. (See paragraph 5 of Appendix 3 to Subpart C)

g. Applicants with any sequelae of disease, which need surgical intervention in any part of the digestive tract or its adnexae likely to cause incapacitation in flight, in particular any obstruction due to stricture or compression, shall be assessed as unfit.

h. Applicants who have undergone a surgical operation on the digestive tract or its adnexa, involving a total or partial excision or a diversion of any of these organs, shall be assessed as unfit for a minimum period of three months or until such time as the effects of the operation are no longer likely to interfere with the safe exercise of the privileges of the applicable licence(s). (See paragraph 6 of Appendix 3 to Subpart C)

i. Applicants with internal or external haemorrhoids shall be assessed as unfit. A fit assessment for applicants may be considered by the AMS according to Paragraph 7 of Appendix 3 to Subpart C.

j. Applicant with liver disease shall be assessed in compliance with paragraph 8 of Appendix 3 to Subpart C.

k. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 3 to Subpart C Digestive system

(See MAR–FCL 3.285)

4. Inflammatory bowel disease is acceptable provided that it is in established remission and stabilised and that systemic steroids are not required for its control. A fit assessment at revalidation or renewal may be considered by the AMS in the case of a mild colitis ulcerosa requiring only sulfasalazine or 5-ASA. A fit assessment may be considered by the AMS after 1-year remission of M. Crohn, requiring only Sulfasalazine or 5-ASA. A colectomy is disqualifying.

5. A fit assessment may be considered by the AMS after a satisfactory investigation of a small umbilical hernia by a surgeon, acceptable to the AMS.

6. Abdominal surgery is disqualifying for a minimum of three months. The AMS may consider an earlier fit assessment at revalidation or renewal if recovery is complete, the applicant is asymptomatic and there is only a minimal risk of secondary complication or recurrence. Laparoscopic operations are disqualifying for a minimum of 6 weeks.

7. Haemorrhoids with grade IV prolapse are disqualifying until surgical treatment has been performed.

8. Liver cirrhosis, adenoma of the liver, cysts in the liver caused by parasites and hepatitis are disqualifying. A fit assessment may be considered by the AMS after surgical treatment of the adenoma or cyst and treatment with medication against the parasites. In the case of a chronic hepatitis a fit assessment at revalidation or renewal may be considered by the AMS if the infection is without symptoms, liver function is normal and the chance to infect other people is acceptable.

MAR–FCL 3.290 Metabolic, nutritional and endocrine diseases

a. An applicant for or holder of a Class 2 MMC shall not possess any functional or structural metabolic, nutritional or endocrine disorder which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

b. Applicants with metabolic, nutritional or endocrine dysfunctions may be assessed as fit in accordance with paragraph 1 of Appendix 4 to Subpart C.

c. Applicants with diabetes mellitus not requiring insulin may be assessed as fit only in accordance with paragraphs 2 and 3 of Appendix 4 Subpart C.

d. Applicants with diabetes requiring insulin shall be assessed as unfit.

e. Applicants with a Body Mass Index > 30 may be assessed as fit only if the excess weight is not likely to interfere with the safe exercise of the applicable licence(s) and a satisfactory cardiovascular risk review has been undertaken. (See MAR-FCL Cardiovascular System 3.260 and paragraph 7 of Appendix 1 to Subpart C)

f. Applicants with a Body Mass Index < 18 shall be assessed as unfit. (See paragraph 4 of Appendix 4 to Subpart C)

g. Addison's disease is disqualifying at initial. A fit assessment may be considered by the AMS at revalidation or renewal provided that cortisone is carried and available for use, whilst exercising the privileges of the licence.

h. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 4 to Subpart C Metabolic, nutritional and endocrine disorders

(See MAR–FCL 3.290)

1. Metabolic, nutritional or endocrinological dysfunction is disqualifying. A fit assessment may be considered by the AMS if the condition is asymptomatic, clinically compensated and stable with or without replacement therapy, and regularly reviewed by an appropriate specialist.

2. Glycosuria and abnormal blood glucose levels require investigation. A fit assessment may be considered by the AMS if normal glucose tolerance is demonstrated (low renal threshold) or impaired glucose tolerance without diabetic pathology is fully controlled by diet and regularly reviewed.

3. The use of antidiabetic drugs is disqualifying. In selected cases, however, the use of biguanides or alpha-glucosidase inhibitors and DPP4 inhibitors may be acceptable for a fit assessment without a limitation. The use of sulphonylureas may be acceptable for a fit assessment at revalidation or renewal.

4. In case of a low BMI (<18) a fit assessment may be considered by the AMS after investigation by specialist in internal medicine and psychiatrist

MAR–FCL 3.295 Haematology

a. An applicant for, or the holder of, a Class 2 MMC shall not possess any haematological disease which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

b. Haemoglobin shall be tested at every medical examination. Applicants with abnormal haemoglobin values (male < 8,0 mmol/l; female < 7,0 mmol/l) shall be investigated. (See paragraph 1 of Appendix 5 to Subpart C)

c. Applicants with hemoglobinopathies, minor thalassaemia or sickle cell disease shall be assessed as unfit. (See paragraph 1 of Appendix 5 to Subpart C)

d. Applicants with significant localised and generalised enlargement of the lymphatic glands and diseases of the blood shall be assessed as unfit. (See paragraph 2 of Appendix 5 to Subpart C)

e. Applicants with acute leukaemia shall be assessed as unfit. Initial applicants with a history of acute lymphatic leukaemia may assesses as fit by the AMS if the ALL is in remission for at least 10 years; after radiation therapy of the skull, a neurological and psychiatric evaluation is necessary. At revalidation or renewal applicants may be assessed as fit by the AMS after established remission.

f. Applicants with chronic leukaemia shall be assessed as unfit. After a period of demonstrated stability a fit assessment may be considered by the AMS. (See paragraph 3 of Appendix 5 to Subpart C)

Appendix 5 to Subpart C Haematology

(See MAR–FCL 3.295)

1. Anaemias demonstrated by reduced haemoglobin level require investigation. Anaemia which is unamenable to treatment is disqualifying. A fit assessment may be considered by the AMS in cases where the primary cause has been satisfactorily treated (e.g. iron deficiency or B12 deficiency or where minor thalassaemia or haemoglobinopathies are diagnosed without a history of crises.

2. Lymphatic enlargement requires investigation. A fit assessment may be considered by the AMS in cases of acute infectious process which is fully recovered or Hodgkin's lymphoma and Non-Hodgkin’s lymphoma of high-Grade which has been treated and is in full remission.

3. In cases of chronic leukaemia, a fit assessment may be considered by the AMS. There shall be no history of central nervous system involvement and no continuing side-effects from treatment of flight safety importance. Haemoglobin and platelets levels shall be satisfactory. Regular follow-up is required.

MAR–FCL 3.295 Haematology

g. Applicants with significant enlargement of the spleen shall be assessed as unfit. (See paragraph 4 of Appendix 5 to Subpart C)

h. Applicants without spleen or functional asplenia shall be assessed as unfit and should be assessed on an individual basis. (See paragraph 5 of Appendix 5 to Subpart C)

i. Applicants with significant polycythaemia (haematocrit >51% by male or >48% by female) shall be assessed as unfit. (See paragraph 6 of Appendix 5 to Subpart C)

j. Applicants with a coagulation defect or a severe thrombocytopaenia (<75 x 10^3) shall be assessed as unfit. (See paragraph 7 and 8 of Appendix 5 to Subpart C)

k. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 5 to Subpart B Haematology

(See MAR–FCL 3.295)

4. Splenomegaly requires investigation. The AMS may consider a fit assessment when the enlargement is minimal, stable and no associated pathology is demonstrable (e.g. treated chronic malaria), or if the enlargement is minimal and associated with another acceptable condition (e.g. Hodgkin's lymphoma in remission).

5. Asplenia (anatomical or functional) requires further investigation. In case of acquired asplenia special attention should be paid to diseases associated with functional asplenia requiring no specialist consultation (e.g. coeliac, sickle cell disease, hemoglobinopathy, high doses corticosteroiD)

6. Polycythaemia requires investigation. The AMS may consider a fit assessment if the condition is stable and no associated pathology has been demonstrated.

7. Significant coagulation defects require investigation. The AMS may consider a fit assessment if there is no history of significant bleeding or clotting episodes.

8. Thrombocytopaenia requires investigation. The AMS may consider a fit assessment after a idiopathic or auto-immune thrombocytopaenia thrombopathy if the amount of thrombocytes is stable.

MAR–FCL 3.300 Urinary system

a. An applicant for, or the holder of, a Class 2 MMC shall not possess any functional or structural disease of the urinary system or its adnexa which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

b. Applicants presenting any signs of organic disease of the kidney shall be assessed as unfit. Urinalysis shall form part of every medical examination. The urine shall contain no abnormal element considered to be of pathological significance. Particular attention shall be paid to disease affecting the urinary passages and the genital organs. (See paragraph 1 of Appendix 6 to Subpart C)

c. Applicants presenting with urinary calculi shall be assessed as unfit. (See paragraph 2 of Appendix 6 to Subpart C)

d. Applicants with any sequela of disease or surgical procedures on the kidneys and the urinary tract likely to cause incapacitation, in particular any obstruction due to stricture or compression, shall be assessed as unfit. Applicants with compensated nephrectomy without hypertension or uraemia may be considered fit. (See paragraph 3 of Appendix 6 to Subpart C)

e. Applicants who have undergone a major surgical operation in the urinary tract (kidney, bladder and prostate) or the urinary apparatus involving a total or partial excision or a diversion of any of its organs shall be assessed as unfit for a minimum period of three months and until such time as the effects of the operation are no longer likely to interfere with the safe exercise of the privileges of the applicable licence(s). (See paragraphs 3 and 4 of Appendix 6 to Subpart C)

f. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 6 to Subpart C Urinary system

(See MAR–FCL 3.300)

1. Any abnormal finding upon urinalysis requires two repeated urinalyses with a week in between. When 2 out of 3 show abnormal findings, the applicant has to be referred to an urinary specialist. Investigation and analysis shall include proteinuria, haematuria and glycosuria.
   Renal failure is disqualifying. A fit assessment at revalidation or renewal may be considered by the AMS if the renal failure is asymptomatic. There shall be no signs of a low haemoglobin or albumin; no haemolysis or disturbance of electrolytes, and no hypertension.

2. An asymptomatic calculus or a history of renal colic requires investigation. While awaiting assessment or treatment, the AMS may consider a fit assessment at revalidation or renewal with an operational limitation. After successful treatment a fit assessment without limitation may be considered by the AMS. A control echogram and/or CT scan at 6 weeks after treatment or spontaneous recovery shall be performed. Annual follow up by ultrasound stays necessary SIC) Residual calculi are disqualifying, unless they are in a location where they are unlikely to move and give symptoms. The AMS may consider a fit assessment at revalidation or renewal, without limitation.

3. Major urological surgery (kidney, bladder and prostate) is disqualifying for a minimum of three months. The AMS may consider a fit assessment if the applicant is completely asymptomatic and there is a minimal risk of secondary complication or recurrence.

4. Renal transplantation, total cystectomy or ureterostomy is not acceptable at initial examination. At revalidation or renewal, a fit assessment may be considered by the AMS, in the case of;
   a. renal transplant which is fully compensated and tolerated with minimal immuno-suppressive therapy after at least twelve months; and
   b. total cystectomy which is functioning satisfactorily with no recurrence of primary pathology.

MAR–FCL 3.305 Sexual transmitted diseases and other infections

a. An applicant for or holder of a Class 2 MMC shall have no established medical history or clinical diagnosis of any sexually transmitted disease or other infection which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

b. An applicant having HIV infection involving symptoms of active disease such as AIDS, AIDS Related Complex, or Central Nervous System involvement shall be assessed as unfit. However, a fit assessment at renewal and revalidation of asymptomatic HIV positive individuals may be considered in accordance with paragraph 1 & 2 of Appendix 7 to Subpart C.

c. Infectious hepatitis may be disqualifying. (See paragraph 3 of Appendix 7 Subpart C)

d. Syphilis is disqualifying. (See paragraph 4 of Appendix 7 Subpart C)

e. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 7 to Subpart C Sexual transmitted diseases and other infections

(See MAR–FCL 3.305)

1. There is no requirement for routine testing of HIV status, but testing may be carried out on clinical indication. Once HIV positivity has been confirmed, a process of rigorous assessment and follow-up should be introduced to enable individuals to continue working provided their ability to exercise their licenced privileges to the required level of safety is not impaired. Treatment must be assessed by a specialist acceptable to the AMS on an individual basis for its appropriateness and any side-effects. At revalidation or renewal, a fit assessment of HIV positive individuals a SIC limitation may be considered by the AMS subject to yearly review. The occurrence of AIDS or AIDS related complex is disqualifying.

2. Since sudden incapacitation by seizure, or subtle incapacitation due to cognitive dysfunction are known manifestations of HIV disease, thorough neurological examination shall form part of the regular assessment of HIV positive individuals.

3. If infectious hepatitis has been confirmed, a process of rigorous assessment and follow-up should be introduced to enable individuals to continue working provided their ability to exercise their licenced privileges to the required level of safety is not impaired. Treatment must be assessed by a specialist acceptable to the AMS on an individual basis for its appropriateness and any side-effects. At revalidation or renewal, a fit assessment of infectious hepatitis individuals a SIC limitation may be considered by the AMS subject to yearly review.

4 A fit assessment may be considered by the AMS in the case of those fully treated and recovered from all possible stages.

MAR–FCL 3.310 Gynaecology and obstetrics

a. An applicant for, or the holder of, a Class 2 MMC shall not possess any functional or structural obstetric or gynaecological condition which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

b. An applicant with a history of severe menstrual disturbances unamenable to treatment shall be assessed as unfit.

c. Pregnancy entails unfitness. If obstetric evaluation indicates a completely normal pregnancy, the applicant may be assessed as fit until the end of the 26th week of gestation, in accordance with paragraph 1 of Appendix 8 to Subpart C by the AMS or AeMC or FS in coordination with the AMS. Licence privileges may be resumed upon satisfactory confirmation of full recovery following confinement or termination of pregnancy.

d. An applicant who has undergone a major gynaecological operation shall be assessed as unfit for a period of three months or until such time as the effects of the operation are not likely to interfere with the safe exercise of the privileges of the licence(s). (See paragraph 2 of Appendix 8 to Subpart C)

Appendix 8 to Subpart C Gynaecology and obstetrics

(See MAR–FCL 3.310)

1. The AMS may assess a pregnant applicant as fit during the first 26 weeks of gestation following review of the obstetric evaluation. An echoscopy is mandatory to exclude extra-uterine gestation. The AMS shall provide written advice to the applicant and the supervising physician regarding potentially significant complications of pregnancy (see Manual). An operational limitation shall be imposed and, following confinement or termination of the pregnancy, removed by the AMS.

2. Major gynaecological surgery is disqualifying for a minimum of three months. The AMS may consider an earlier fit assessment at revalidation or renewal if the holder is completely asymptomatic and there is only a minimal risk of secondary complication or recurrence and the effects of the operation are no longer likely to interfere with the safe exercise of the privileges of the license.

MAR–FCL 3.315 Musculoskeletal requirements

a. An applicant for or holder of a Class 2 MMC shall not possess any abnormality of the bones, joints, muscles and tendons, congenital or acquired which is likely to interfere with the safe exercise of the privileges of the applicable licence(s). (See paragraph 1 of Appendix 9 to Subpart C)

b. An applicant shall have sufficient sitting height, arm and leg length and muscular strength for the safe exercise of the privileges of the applicable licence. Abnormal physique, including obesity (BMI ≥ 30), or muscular weakness at initial is disqualifying. At renewal or revalidation this may require medical flight or flight simulator testing approved by the AMS. (See paragraph 2 of Appendix 9 to Subpart C)

c. An applicant shall have satisfactory functional use of the musculoskeletal system. An applicant with any significant sequela from disease, injury or congenital abnormality of the bones, joints, muscles or tendons with or without surgery, mentioned in medical investigation and or medical examination, shall be assessed in accordance with paragraphs 1, 2, and 3 of Appendix 9 to Subpart C.

d. An applicant with inflammatory, infiltrative, traumatic or degenerative disease of the musculoskeletal system may be assessed as fit by the AMS in accordance with paragraphs 1, 2 and 3 of Appendix 9 to Subpart C.

e. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 9 to Subpart C Musculoskeletal requirements

(See MAR–FCL 3.315)

1. X-ray examination at initial shall be performed and assessed by a specialist. In case of X-ray abnormalities referral to a specialist acceptable to AMS is needed for further analysis. The following abnormalities are disqualifying:

    a. Kyphosis > 50°. A kyphosis of 40°-49° needs an assessment of an orthopaedic specialist, acceptable to the AMS.
    b. Scoliosis > 25°, according Cobb. A scoliosis between 15° and 25° needs an assessment of an orthopaedic specialist, acceptable to the AMS.
    c. C-curve > 15°.
    d. Spondylolisthesis and ~~A~~ spondylolysis shall be assessed by an orthopaedic specialist, acceptable to the AMS.
        Spondylolysis without symptoms may be accepted.
        Spondylolysis with symptoms is disqualifying.
        Spondylolisthesis gr 1-2 without symptoms may be accepted.
        Spondylolisthesis gr 1-2 with symptoms is disqualifying.
        Spondylolisthesis gr 3 and 4 with or without symptoms is disqualifying.

2. Particular attention shall be paid to emergency procedures and evacuation

3. An applicant with inflammatory, infiltrative, traumatic or degenerative disease of the musculoskeletal system may be assessed as fit by the AMS. Provided the condition is in remission and the applicant is taking no disqualifying medication and has satisfactorily completed a medical flight or simulator flight test when necessary,

MAR–FCL 3.320 Psychiatric requirements

a. An applicant for or holder of a Class 2 MMC shall have no established medical history or clinical diagnosis of any psychiatric disease or disability, condition or disorder, acute or chronic, congenital or acquired, which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

b. An established condition including psychotic symptoms is disqualifying (See paragraph 1 of Appendix 10 to Subpart C)

c. An established depressive or anxiety disorder is disqualifying (See paragraph 2 of Appendix 10 to Subpart C)

d. A single self-destructive action or repeated acts of deliberate self-harm are disqualifying (See paragraph 3 of Appendix 10 to Subpart C)

e. Abuse of alcohol and use of psychoactive drugs or substances with or without dependency is disqualifying (See paragraph 4 of Appendix 10 to Subpart C)

Appendix 10 to Subpart C Psychiatric requirements

(See MAR–FCL 3.320)

1. A fit assessment may only be considered if the AMS concludes that the original diagnosis was inappropriate or inaccurate, or in the case of a single episode of delirium provided that the applicant has suffered no permanent impairment.

2. The AMS may consider a fit assessment after full consideration of an individual case, depending on the depressive or anxiety disorder characteristics and gravity and after all psychotropic medication has been stopped for an appropriate period of at least 3 months. Prolonged administration of limited psychotropic medication to prevent relapse may be considered, only by a psychiatric specialist acceptable to the AMS. An established mania is disqualifying permanently.

3. A fit assessment may be considered by the AMS after full consideration of an individual case and may require psychological or psychiatric review.

4. A fit assessment at initial examination may be considered by the AMS after a period of two years documented sobriety or freedom from substance use. At revalidation or renewal, a fit assessment may be considered by the AMS after 6 months. Depending on the individual case and at the discretion of the AMS, treatment and review may include:
   a. in-patient treatment of some weeks followed by
   b. review by a psychiatric specialist acceptable to the AMS; and
   c. ongoing review including blood and urine testing and peer reports, which may be required indefinitely.

MAR–FCL 3.320 Psychiatric requirements

f. Neurobiological development disorders (e.g. dyslexia, dyscalculia) requires investigation (See paragraph 5 of Appendix 10 to Subpart C)

g. An established trauma- or stress-related disorder is disqualifying (See paragraph 6 of Appendix 10 to Subpart C)

h. A personality disorder requires investigation (See paragraph 7 of Appendix 10 to Subpart C)

i. An established neurocognitive disorder is disqualifying (See paragraph 8 of Appendix 10 to Subpart C)

Appendix 10 to Subpart C Psychiatric requirements

(See MAR–FCL 3.320)

5. The AMS may consider a fit assessment after full consideration of an individual case and may require extensive evaluation.

6. A fit assessment may be considered by the AMS after full consideration of an individual case and may require psychological or psychiatric review.

7. The AMS may consider a fit assessment after full consideration of an individual case and may require extended psychological or psychiatric evaluation.

8. The AMS may consider a fit assessment after full consideration of an individual case, depending on the gravity of the disorder, and may require extensive psychological or psychiatric review.

MAR-FCL 3.325 Neurological requirements

a. An applicant for holder of a Class 2 MMC shall have no established medical history or clinical diagnosis of any neurological condition which is likely to interfere with the safe exercise of the privileges of the applicable license(s).

b. Any neurological condition which might interfere with the safe exercise of the privileges of the applicable license(s) shall be assessed by a neurologist acceptable to the AMS.

c. Progressive diseases of the nervous system shall be assessed as unfit (See paragraph 1 to Appendix 11, Subpart C)

d. Cerebrovascular disease and intracerebral malformations shall be assessed by a neurologist acceptable to the AMS (See paragraph 2 to Appendix 11, Subpart C)

e. Epilepsy and other causes of disturbance of consciousness shall be assessed as unfit (See paragraph 3 to Appendix 11, Subpart C)

Appendix 11 to Subpart C Neurological requirements

(See MAR–FCL 3.325)

1. Any stationary or progressive disease of the nervous system which has caused or is likely to cause a significant disability is disqualifying. However, in case of minor functional losses, associated with stationary disease, the AMS may consider a fit assessment after full evaluation.
   A diagnosis of Multiple Sclerosis is disqualifying. At revalidation or renewal, a fit assessment may be considered by the AMS in case of full remission and after full evaluation.

2. Cerebrovascular disease and intracerebral malformations.
   a. TIA (including transient monocular blindness) or ischemic stroke is disqualifying.
   b. A history of intracerebral hemorrhage is disqualifying.
   c. Unruptured intracerebral aneurysms are disqualifying.
   d. Intracerebral cavernoma and intracerebral arterio-venous malformation (AVM) are disqualifying.
   e. Aneurysmal subarachnoid hemorrhage is disqualifying, as is subarachnoid hemorrhage due to other vascular anomalies.
   f. A fit assessment may be considered by the AMS for peri mesencephalic hemorrhage after neurological assessment.
   g. A fit assessment may be considered by the AMS for intracerebral developmental venous anomaly (DVA) after neurological assessment.

3. Epilepsy and other causes of disturbance of consciousness.
   a. Syncope of uncertain cause is disqualifying. In case of a single episode of disturbance of consciousness, which can be satisfactorily explained, a fit assessment may be considered by the AMS. More than 3 episodes per year requires evaluation. Restrictions may be applied.
   b. A diagnosis of epilepsy is disqualifying. A fit assessment may be considered by the AMS if the applicant has been free of recurrence and off treatment for more than 10 years. In case of an acute symptomatic seizure which is considered to have a very low risk of recurrence a fit assessment may be considered by the AMS after 2 years. Restrictions may be applied.
   c. Electroencephalography is required when indicated by the applicant's history or on clinical grounds. Epileptiform paroxysmal EEG abnormalities and focal slow waves are disqualifying. Further evaluation shall be carried out by the AMS.

MAR-FCL 3.325 Neurological requirements

f. Migraine, Trigeminal Autonomic Cephalalgias and trigeminal neuralgia are disqualifying (See paragraph 4 to Appendix 11, Subpart C)

g. Any head injury which has been severe enough to cause loss of consciousness or is associated with penetrating brain injury shall be examined by a neurologist acceptable to the AMS (See paragraph 5 to Appendix 11, Subpart C)

h. Intracerebral tumors shall be assessed as unfit (See paragraph 6 to Appendix 11, Subpart C)

i. Spinal or peripheral nerve injury shall be assessed by a neurologist acceptable to the AMS (See paragraph 7 to Appendix 11, Subpart C)

j. Neurological infectious diseases shall be assessed as unfit (See paragraph 8 to Appendix 11, Subpart C)

Appendix 11 to Subpart C Neurological requirements

(See MAR–FCL 3.325)

4. Headache syndromes.
   a. A history of migraine is disqualifying. After neurological assessment a fit assessment at revalidation of renewal may be considered by the AMS at least 6 months after first presentation. Restrictions may be appropriate for a period of 2 years.
   b. A diagnosis of TAC (trigeminal autonomic cephalgia) is disqualifying.
   c. A diagnosis of trigeminal neuralgia is disqualifying.

5. Head injury.
   a. A fit assessment after mild head injury may be considered by the AMS after 1 month.
   b. A fit assessment after moderate head injury at revalidation or renewal with restrictions may be considered by the AMS after 6 months. A fit assessment without limitations may be considered by the AMS after 2 years.
   c. A fit assessment after severe head injury at revalidation or renewal with long term restrictions may be considered by the AMS after 5 years.

6. Intracerebral tumors are disqualifying. A fit assessment at revalidation or renewal may be considered by the AMS in case of accidental finding of benign intracranial lesions which are asymptomatic, restrictions may be applied.

7. Spinal or peripheral nerve injury.
   a. Assessment of applicants with a history of spinal or peripheral nerve injury shall be undertaken in conjunction with the musculoskeletal requirements.
   b. Peripheral or spinal nerve injury that does not interfere with the safe exercise of the privileges of the applicable license(s) may be assessed as fit by the AMS provided there is no underlying progressive neurological disorder. Restrictions may be applied.
   c. Asymptomatic lumbar disc herniations (found accidentally on CT or MRI) may be assessed as fit after neurological consultation.

8. Neurological infectious diseases are disqualifying.
   a. Bacterial meningitis is disqualifying. A fit assessment may be considered by the AMS after full evaluation at least 6 months after full recovery.
   b. Viral meningitis is disqualifying. A fit assessment may be considered after full evaluation at least 3 months after full recovery.
   c. Viral encephalitis is disqualifying.

MAR–FCL 3.330 Ophthalmological requirements

a. An applicant for or holder of a Class 2 MMC shall not possess any abnormality of the function of the eyes or their adnexa or any active pathological condition, congenital or acquired, acute or chronic, or any sequela of eye surgery or trauma, which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

b. At initial examination an extended ophthalmological examination is required (See paragraph 1 of Appendix 12 to subpart C)

c. At all revalidation and renewal examinations a routine eye examination must be performed (See paragraph 2 of Appendix 12 to Subpart C) Every other examination shall include an extended ophthalmological examination (See paragraph 1 of Appendix 12 to Subpart C)

d. The report of the examination shall be forwarded to the AMS. If any abnormality is detected, such that the applicant's ocular health is in doubt, further ophthalmological examination will be required. (See paragraph 3 of Appendix 12 to Subpart C)

e. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 12 to Subpart C Ophthalmological requirements

(See MAR–FCL 3.330)

1. The extended ophthalmological examination shall be carried out by an ophthalmologist or a vision care specialist acceptable to the AMS. All abnormal and doubtful cases shall be referred to an ophthalmologist acceptable to the AMS. Applicants requiring visual correction to meet the standards shall submit a copy of the recent spectacle prescription.
   The extended ophthalmological examination shall include:
   1. history; history of night blindness;
   2. visual acuity, near, intermediate and distant vision: with or without best optical correction (if needed) to meet standard;
   3. objective refraction. Hyperopic applicants under age 25 in cycloplegia;
   4. stereopsis (TNO stereopsis red green test)
   5. ocular motility and binocular vision;
   6. colour vision (HRR test);
   7. visual fields, in case of abnormalities an OCT is required;
   8. tonometry, in case of abnormalities an OCT is required;
   9. examination of the external eye, anatomy, media (slit lamp) and fundoscopy;
   10. cornea topography.
   11. assessment of contrast and glare sensitivity after refractive surgery and on clinical indication.

2. A routine eye examination may be performed by a FS. It shall include:
   1. history;
   2. visual acuity, near, intermediate and distant vision: uncorrected and with best optical correction if needed;
   3. morphology by ophthalmoscopy;
   4. further examination on clinical indication.

   All abnormal and doubtful cases shall be referred to an ophthalmologist acceptable to the AMS.

3. Conditions which indicate specialist ophthalmological examination include, but are not limited to, a substantial decrease in the uncorrected visual acuity, any decrease in best corrected visual acuity and/or the occurrence of eye disease, eye injury, or eye surgery.

MAR–FCL 3.335 Visual requirements

a. Distant visual acuity. Distant visual acuity, with or without correction, shall be 1.0 or better in each eye separately and visual acuity with both eyes shall be 1.0 or better. (See MAR–FCL 3.335.g. below) The uncorrected visual acuity shall be 0.1 or better in each eye separately and the visual acuity with both eyes without correction shall be 0.2 or better.

b. Refractive errors. Refractive error is defined as the deviation from emmetropia measured in dioptres in the most ametropic meridian. Refraction shall be measured by standard methods. (See paragraph 1 of Appendix 13 to Subpart C) Applicants shall be assessed as fit with respect to refractive errors if they meet the following requirements.
   1. Refractive error
      i. At the initial examination the refractive error shall not exceed +3 to –3 dioptres before age of 25. Higher dioptres may be acceptable to the AMS after age of 25. Because of physiological processes of the eyes further changes of dioptres after the age of 25 is not to be expected. (See paragraph 2.a of Appendix 13 to Subpart C)
      ii. At revalidation or renewal examinations, an applicant experienced to the satisfaction of the AMS with a refractive error not exceeding + 5 dioptres or a high myopic refractive error not exceeding – 6 dioptres may be assessed as fit by the AMS. (See paragraph 2.b of Appendix 13 to Subpart C)
      iii. Applicants with a large refractive error shall use contact lenses or high-index spectacle lenses.

Appendix 13 to Subpart C Visual requirements

(See MAR–FCL 3.330 and 3.335)

1. Refraction of the eye and functional performance shall be the index for assessment.

2. a. For those, who reach the functional performance standards (1.0 OS; 1.0 OD; 1.0 ODS; N14; N5) only with corrective lenses the AMS may consider a fit assessment if the refractive error is not exceeding + 5 to – 6 dioptres in applicants aged 25 and older, and if:
      1. no significant pathology can be demonstrated;
      2. optimal correction has been considered;
   b. The AMS may consider a fit assessment at revalidation or renewal if the myopic refraction is greater than – 6 dioptres if:
      1. no significant pathology can be demonstrated;
      2. optimal correction has been considered;
      3. a yearly review is undertaken by an ophthalmologist or vision care specialist acceptable to the AMS.

MAR–FCL 3.335 Visual requirements

b. 2. Astigmatism
   i. In an initial applicant with a refractive error with an astigmatic component, the astigmatism shall not exceed 3.0 dioptres.
   ii. At revalidation or renewal examinations, an applicant experienced to the satisfaction of the AMS with a refractive error with an astigmatic component of more than 3.0 dioptres may be assessed as fit by the AMS.
3. Keratoconus is disqualifying. The AMS may consider a fit assessment if the applicant meets the requirements for visual acuity. (See paragraph 4 of Appendix 13 to Subpart C)
4. Anisometropia
   i. In an initial applicant the difference in refractive error between the two eyes (anisometropia) shall not exceed 3.0 dioptres.
   ii. At revalidation or renewal examinations, an applicant experienced to the satisfaction of the AMS with a difference in refractive error between the two eyes (anisometropia) of more than 3.0 dioptres may be assessed as fit by the AMS. (See paragraph 5 of Appendix 13 to Subpart C)
5. The development of presbyopia shall be followed at all aeromedical renewal examinations.
6. An applicant shall be able to read N5 chart (or equivalent) at 30–50 centimetres and N14 chart (or equivalent) at 100 centimetres, with correction if prescribed. (See MAR–FCL 3.340 g. below) The visual acuity for near and intermediate distance, with or without correction, shall be 6/12 (0.5) or better.

Appendix 13 to Subpart C Visual requirements

(See MAR–FCL 3.330 and 3.335)

3. Astigmatism. The AMS may consider a fit assessment at revalidation or renewal if the astigmatic component is greater than 3.0 dioptres if:
   a. no significant pathology can be demonstrated;
   b. optimal correction has been considered;
   c. a 2-year review is undertaken by an ophthalmologist or vision care specialist acceptable to the AMS.

4. Keratoconus. The AMS may consider fit assessment after diagnosis of a keratoconus provided that:
   a. the visual requirements are met with the use of corrective lenses or after surgery;
   b. review is undertaken by an ophthalmologist acceptable to the AMS, the frequency to be determined by the AMS.

5. Anisometropia. The AMS may consider fit assessment at revalidation or renewal if the anisometropia exceeds 3.0 dioptres if:
   a. no significant pathology can be demonstrated;
   b. optimal correction has been considered;
   c. contact lenses shall be worn,
   d. a 2-year review is undertaken by an ophthalmologist or vision care specialist acceptable to the AMS.

MAR–FCL 3.335 Visual requirements

c. An applicant with significant defects of binocular vision shall be assessed as unfit. (See paragraph 6 of Appendix 13 to Subpart C)

d. An applicant with diplopia shall be assessed as unfit.

e. An applicant with abnormal visual fields shall be assessed as unfit. (See paragraph 6 of Appendix 13 to Subpart C)

f. An applicant boom operator shall have a normal stereopsis (better than 60”).

g. 1. If a visual requirement is met only with the use of correction, the spectacles or contact lenses must provide optimal visual function and be well-tolerated and suitable for aviation purposes. If contact lenses are worn, they shall be monofocal and for distant vision. Orthokeratological lenses shall not be used.
   2. Correcting lenses, when worn for aviation purposes, shall permit the licence holder to meet the visual requirements at all distances. No more than one pair of spectacles shall be used to meet the requirements.
   3. Contact lenses, when worn for aviation purposes, shall be monofocal and non-tinted.
   4. A spare set of similarly correcting spectacles shall be readily available when exercising the privileges of the licence.

Appendix 13 to Subpart C Visual requirements

(See MAR–FCL 3.330 and 3.335)

6. a. In case of reduction of vision in one eye to below the limits stated in MAR–FCL 3.340 a fit assessment at revalidation or renewal may be considered if the underlying pathology and the visual ability of the remaining eye are acceptable following ophthalmological evaluation acceptable to the AMS and subject to a satisfactory medical flight test, if indicated.
   b. An applicant with a visual field defect may be considered as fit if the binocular visual field is normal and the underlying pathology is acceptable to the AMS.

MAR–FCL 3.335 Visual requirements

h. Eye Surgery
   1. Refractive surgery entails unfitness. A fit assessment may be considered by the AMS. (See paragraph 7 of Appendix 13 to Subpart C)
   2. Cataract surgery, retinal surgery and glaucoma surgery entail unfitness. A fit assessment may be considered by the AMS at revalidation or renewal. (See paragraph 8 of Appendix 13 to Subpart C)

Appendix 13 to Subpart C Visual requirements

(See MAR–FCL 3.330 and 3.335)

7. After refractive surgery, a fit assessment may be considered by the AMS provided that:
   a. pre-operative refraction (as defined in MAR-FCL 3.340b.) was no greater than + 5 or – 8 dioptres;
   b. the applicant was at least 21 years old at the time of the operation;
   c. pre-operative astigmatic component was not greater than 3.0 dioptres;
   d. no significant pathology can be demonstrated;
   e. after surgery a satisfactory stability of refraction has been achieved (less than 0.75 dioptres variation diurnally);
   f. examination of the eye shows no postoperative complications like haze;
   g. glare sensitivity is within normal standards;
   h. mesopic contrast sensitivity is not impaired;
   i. review is undertaken by an ophthalmologist acceptable to the AMS at the discretion of the AMS.

8. a. Cataract surgery. A fit assessment may be considered by the AMS after 3 months, provided that the visual requirements are met either with contact lenses or with intraocular lenses (mono-focal, non-tinteD)
   b. Retinal surgery. A fit assessment may be considered by the AMS normally 6 months after successful surgery. A fit assessment may be acceptable to the AMS after retinal Laser therapy. Follow-up, as necessary, will be determined by the AMS.
   c. Glaucoma surgery. A fit assessment may be considered by the AMS 6 months after successful surgery. Follow-up, as necessary, will be determined by the AMS.

MAR–FCL 3.340 Colour perception

a. Normal colour perception is defined as the ability to pass Ishihara's test and HRR test or to pass Nagel's anomaloscope as a normal trichromat. (See paragraph 1 Appendix 14 to Subpart C)

b. An applicant shall have normal perception of colours or be colour safe. At the initial examination applicants have to pass the Ishihara test and the HRR test. Applicants who fail Ishihara's test or HRR test shall be assessed as colour safe if they pass extensive testing with methods acceptable to the AMS (anomaloscopy and Cone Contrast Test (CCT). (See paragraph 2 Appendix 14 to Subpart C) At revalidation or renewal colour vision needs only to be tested by the HRR test at the extended ophthalmological examination.

c. An applicant who fails the acceptable colour perception tests is to be considered colour unsafe and shall be assessed as unfit.

Appendix 14 to Subpart C Colour perception

(See MAR–FCL 3.340)

1. The Ishihara test (24 plate version) is to be considered passed if the first 19 plates are identified without error, without uncertainty or hesitation (less than 3 seconds per plate). These plates shall be presented randomly. For lighting conditions see the JAA Manual of Civil Aviation Medicine.

2. Those failing the Ishihara test shall be examined either by:
   a. Anomaloscopy (Oculus HMC or equivalent). This test is considered passed if the colour match is trichromatic and the AQ is between 0.7 and 1.4, or by
   b. Cone contrast test (CCT) This test is considered passed if the applicant gets a score of 75 out of 100, or higher.

MAR–FCL 3.345 Otorhinolaryngological requirements

a. An applicant for or holder of a Class 2 MMC shall not possess any abnormality of the function of the ears, nose, sinuses, or throat (including oral cavity, teeth and larynx), or any active pathological condition, congenital or acquired, acute or chronic, or any sequela of surgery and trauma which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

b. A comprehensive otorhinolaryngological is required at the initial examination and subsequently on clinical indication (Comprehensive examination – see paragraph 1 and 2 of Appendix 15 to Subpart C) and shall include:
   1. history;
      a: special attention should be paid to allergic rhinitis, nose passage problems, chronic sinusitis, sinus block and tuba dysfunction.
      Special attention should be paid to snoring and fatigue in daytime.
   2. clinical examination including otoscopy, rhinoscopy, and examination of the mouth and throat;
   3. tympanometry or equivalent;
   4. clinical assessment of the vestibular system.

c. A routine Ear-Nose-Throat examination shall form part of all revalidation and renewal examinations. (See paragraph 2 of Appendix 15 to Subpart C)

Appendix 15 to Subpart C Otorhinolaryngological requirements

(See MAR–FCL 3.345)

1. At the initial examination a comprehensive ORL examination shall be carried out by an AeMC or a specialist in aviation otorhinolaryngology acceptable to the AMS.

2. At revalidation or renewal examinations all abnormal and doubtful cases within the ENT region shall be referred to a specialist in aviation otorhinolaryngology acceptable to the AMS.

MAR–FCL 3.345 Otorhinolaryngological requirements

d. Presence of any of the following disorders in an applicant shall result in an unfit assessment.
   1. Active pathological process, acute or chronic, of the internal or middle ear;
   2. Unhealed perforation or dysfunction of the tympanic membranes; (See paragraph 3 of Appendix 15 to Subpart C)
   3. Disturbances of vestibular function; (See paragraph 4 of Appendix 15 to Subpart C)
   4. Significant restriction of the nasal air passage on either side, or any dysfunction of the sinuses;
   5. Perforation of the nasal septum;
   6. Significant malformation or significant, acute or chronic infection of the oral cavity or upper respiratory tract;
   7. Significant disorder of speech or voice;
   8. Anosmia;
   9. Treated or untreated allergic rhinitis with symptoms of an impaired nasal airway, recurrent sinusitis, recurrent sinus blocks or Eustachian tube dysfunction is disqualifying. (See paragraph 5 of Appendix 15 to Subpart C)
   10. Otosclerosis at initial examination.
   11. Obstructive Sleep Apnoea Syndrome (OSAS) is disqualifying. (See paragraph 6 of Appendix 15 to Subpart C)

e. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 15 to Subpart C Otorhinolaryngological requirements

(See MAR–FCL 3.345)

3. Dry perforation(s) of non-infectious origin which do not interfere with the normal function of the ear may be considered acceptable for certification.

4. The presence of spontaneous or positional nystagmus shall entail complete vestibular evaluation by a specialist acceptable to the AMS. In such cases no significant abnormal caloric or rotational vestibular responses can be accepted. At revalidation or renewal examinations abnormal vestibular responses shall be assessed in their clinical context by the AMS.

5. Allergic rhinitis is disqualifying. A fit assessment may be considered by the AMS if the applicant is without symptoms, with or without medication.

6. At initial OSAS is disqualifying. At renewal and revalidation untreated OSAS is disqualifying. A fit assessment may be considered by AMS when OSAS is treated and has a AHI score of < 15 without complaints, yearly follow up by ENT stays necessary (SIC limitation).

MAR–FCL 3.350 Hearing requirements

a. Hearing shall be tested at all examinations. The applicant shall be able to understand correctly ordinary conversational speech when tested with each ear at a distance of 2 metres from and with his back turned towards the FS.

b. A hearing test with pure tone audiometry (See paragraph 1 Appendix 16 to Subpart C) is required at the first examination and at every examination thereafter.
   1. At initial examination there shall be no hearing loss in either ear, when tested separately of more than 20 dB (HL) at any of the frequencies 500, 1000, and 2000 Hz, or more than 30 dB (HL) at 3000 Hz.
   2. At revalidation or renewal there shall be no hearing loss in either ear, when tested separately of more than 35 dB at the frequencies of 500, 1000 and 2000 Hz and more than 50 dB at 3000 Hz.
   3. Cases of hypoacusis shall be referred to the AMS for further evaluation and assessment. (See paragraph 2 and 3 Appendix 16 to Subpart C)

Appendix 16 to Subpart C Hearing requirements

(See MAR–FCL 3.350)

1. The pure tone audiogram shall cover the frequencies from 250-8000 Hz. Frequency thresholds shall be determined as follows:
   500 Hz
   1000 Hz
   2000 Hz
   3000 Hz

2. Applicants for initial examination who do not meet the hearing requirements shall be referred to an ENT specialist for further examination. They may be assessed as fit by the AMS if ENT evaluation shows no signs of disease and a speech discrimination test demonstrates a satisfactory hearing ability.

3. At revalidation or renewal an applicant with hypoacusis may be assessed as fit by the AMS if a functional hearing test demonstrates a satisfactory hearing ability.

MAR-FCL 3.355 Dental Requirements

(See MAR-FCL 3.345 a and d.6)
(See GM FCL 3.235)

a. The holder of a Class 2 MMC shall be dentally fit to exercise safely the privileges of the applicable licence.

b. An applicant for or holder of a MMC shall not possess any abnormality of the function of the oral cavity and teeth, which is likely to interfere with the safe exercise of the privileges of the applicable licence(s). (See Paragraph 1 of Appendix 17 to Subpart C)

c. The system used for assessing the dental health status is the dental fitness (DF) classification system. All applicants shall be DF class 1 or 2 in order to be declared fit for flight. (See Paragraph 2 of Appendix 17 to Subpart C)

d. The dental record, including radiographs, is used as an initial document for forensic identification and should be complete and up to date at all times. The importance of this record cannot be overemphasized.

Appendix 17 to Subpart C Dental requirements

(See MAR-FCL 3.355)

1. The review and evaluation of each applicant's dental/oral health status must describe if there are any limitations which will adversely affect the safe exercise of the privileges of the applicable licence(s). All cases will be assessed by a dental officer.

2. All applicants will be assessed on an individual case-by-case basis. In any case in which the rejection of the applicant is recommended by the dental officer, the evaluation must clearly indicate why the applicant's dental condition precludes exercising safely the privileges of the applicable licence.

MAR–FCL 3.360 Psychological requirements

a. An applicant for or holder of a Class 2 MMC shall have no established psychological deficiencies, particularly in operational aptitudes or any relevant personality factor, which are likely to interfere with the safe exercise of the privileges of the applicable licence(s). A psychological evaluation (See paragraph 1 Appendix 187 to Subpart C) may be required by the AMS where it is indicated as part of, or complementary to, a specialist psychiatric or neurological examination. (See paragraph 1 and 2 of Appendix 187 to Subpart C)

b. When a psychological evaluation is indicated, it shall be carried out by a psychologist with extensive knowledge of the aviation environment acceptable to the AMS. The psychologist shall submit a written report to the AMS, detailing his opinion and recommendation. (See paragraph 2 to Appendix 18 to Subpart C)

c. An applicant who exhibits inability to cope with stress or stress-related problems to an extent where the symptoms are likely to interfere with an individual's ability to exercise safely the privileges of the licence/certificate of competence shall be assessed as unfit. (However, see paragraph 3 and 4 of Appendix 18 to Subpart C)

Appendix 18 to Subpart C Psychological requirements

(See MAR–FCL 3.360)

1. Indication. A psychological evaluation should be considered as part of, or complementary to, a specialist psychiatric or neurological examination when the AMS receives verifiable information from an identifiable source which evokes doubts concerning the mental fitness or personality of a particular individual. Sources for this information can be accidents or incidents, problems in training or proficiency checks, delinquency or knowledge relevant to the safe exercise of the privileges of the applicable licences. Within psychiatric management, psychological assessment may have a pivotal role in enabling the psychiatrist to make a holistic assessment.

2. The psychological evaluation should be broad-based and may include a collection of medical history, biographical data, life-event history and aptitude testing, in addition to personality tests and psychological interview.

3. If stress-related problems, which are likely to interfere with safe exercise of the privileges of the individual's licence/certificate of competence, are reported or indicated, a psychological evaluation by an appropriately qualified specialist acceptable to the AMS may be required. (See MAR-FCL 3.360 c.)

4. Coping with stress includes the following:
   a. coping with high workload;
   b. coping with boredom;
   c. 'unwinding' after work;
   d. controlling anxiety and anger;
   e. managing critical incidents.

   If there are indications of a lack of skills or of incidents relating to any of the above, the applicant should be referred to an appropriately qualified specialist acceptable to the AMS.

MAR–FCL 3.365 Dermatological requirements

a. An applicant for, or holder of a Class 2 MMC shall have no established dermatological condition, likely to interfere with the safe exercise of the privileges of the applicable licence(s).

b. Particular attention should be paid to chronic and residual skin diseases: (See paragraph 1 and 2 of Appendix 19 to Subpart B) Referral to the AMS shall be made if doubt exists about any condition.

c. In case of dermatological aspects of a generalised condition, an assessment of treatment and any underlying condition is required before fit assessment by the AMS.

d. Malignant conditions of the skin need referral to dermatologist (See paragraph 3 of Appendix 19 to Subpart B) The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 19 to Subparts B Dermatological requirements

(See MAR–FCL 3.365)

1. Any skin condition causing pain, discomfort, irritation or itching can distract flight crew from their tasks and thus affect flight safety (e.g. eczema of any cause, psoriasis, bacterial infections, candidiasis, drug induces eruptions, urticarial).

2. Any skin treatment, radiant or pharmacological, may have systemic effects which must be considered before fit assessment.

3. Malignant or Pre-malignant Conditions of the Skin
   a. Malignant melanoma, squamous cell epithelioma, Bowen's disease and Paget's disease are disqualifying. A fit assessment may be considered by the AMS if, when necessary, lesions are totally excised and there is adequate follow-up.
   b. In case of basal cell epithelioma, rodent ulcer, keratoacanthoma or actinic keratoses a fit assessment may be considered after treatment and/or excision in order to maintain certification.

MAR–FCL 3.370 Oncology

a. An applicant for or holder of a Class 2 MMC shall have no established primary or secondary malignant disease likely to interfere with the safe exercise of the privileges of the applicable licence(s).

b. Any malignant disease entails unfitness. At initial, revalidation or renewal a fit assessment may be considered by the AMS after successful treatment. (See paragraph 1 and 2 of Appendix 20 to Subpart B)

c. In the assessment of malignant conditions, the Chapter specific to the relevant system should always be consulted in combination with this Chapter.

Appendix 20 to Subpart C Oncology Requirements

(See MAR-FCL 3.370)

1. A fit assessment may be considered by the AMS and by the FS in consultation with the AMS if:
   a. There is no evidence of residual malignant disease after treatment;
   b. A period of time appropriate to the type of tumour has elapsed since the end of treatment;
   c. The risk of inflight incapacitation from a recurrence or metastasis is within limits acceptable to the AMS;
   d. There is no evidence of short or long-term sequelae from treatment. Special attention shall be paid to applicants who have received anthracycline chemotherapy;
   e. Arrangements for follow-up are acceptable to the AMS.

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SUBPART D – CLASS 3 MEDICAL REQUIREMENTS

MAR-FCL 3.375 Cardiovascular system - Examination

a. An applicant for or holder of a Class 3 Military MMC shall not possess any abnormality of the cardiovascular system, congenital or acquired, which is likely to interfere with the safe exercise of the privileges of the applicable licence(s)/certificate(s) of competence.

b. A standard 12 lead resting electrocardiogram (ECG) and report are required at the examination for first issue of a MMC, at every examination thereafter and on clinical indication. (See Appendix 1, paragraph 1 to Subpart D)

c. Exercise electrocardiography (symptom limited to Bruce Stage IV or equivalent) is required only at the first examination after the 50th birthday and when clinically indicated in accordance with paragraph 1 of Appendix 1 to Subpart D.

d. Reporting of resting and exercise electrocardiograms shall be carried out by the FS or other specialists acceptable to the AMS.

e. At age of 50, a Military MMC holder shall be reviewed at the Center for Man in Aviation. This review shall include exercise electrocardiography, or other tests that will provide equivalent information, and shall be repeated on clinical indication.

f. Estimation of serum lipids, including cholesterol and HDL Cholesterol, is required to facilitate risk assessment at the examination for first issue of a MMC, and at all revalidation or renewal examinations thereafter and on clinical indication. (See paragraph 2 of Appendix 1 to Subpart D)

Appendix 1 to Subpart D Cardiovascular system

(See MAR-FCL 3.375 through 3.395)

1. Exercise electrocardiography, or other appropriate cardiological testing shall be required:
   a. when indicated by signs or symptoms suggestive of cardiovascular disease;
   b. for clarification of a resting electrocardiogram;
   c. at the discretion of an aeromedical specialist acceptable to the AMS.

2. a. Serum lipid estimation is case finding and significant abnormalities shall require review, investigation and supervision by the AeMC or FS in conjunction with the AMS.
   b. An accumulation of risk factors (smoking, diabetes, family history, lipid abnormalities, hypertension, metabolic syndrome etc.) shall require cardiovascular evaluation by the AeMC or FS in conjunction with the AMS, and cardiologist, acceptable to the AMS.

MAR-FCL 3.380 Cardiovascular system - Blood pressure

a. The blood pressure shall be recorded with the technique given in paragraph 3 of Appendix 1 to Subpart D.

b. When the blood pressure at initial examination exceeds 140 mmHg systolic and/or 90 mmHg diastolic consistently, with or without treatment, the applicant shall be addressed as unfit. At revalidation or renewal, a blood pressure of 141-160 mmHg systolic and/or 91-95 mmHG diastolic with or without treatment may be acceptable to the AMS. The diagnosis of hypertension shall require review of other potential vascular risk factors. (See paragraph 4 of Appendix 1 to Subpart D)

c. Treatment for the control of blood pressure shall be compatible with the safe exercise of the privileges of the applicable licence(s)/certificate(s) of competence. (See paragraph 5 of Appendix 1 to Subpart D)

d. Applicants with symptomatic hypertension or with comorbidity shall be assessed as unfit and may be referred to a specialist acceptable to AMS. (See paragraph 6 Appendix 1 Subpart D)

e. Applicants with symptomatic hypotension shall be assessed as unfit.

Appendix 1 to Subpart D Cardiovascular system

(See MAR-FCL 3.375 through 3.395)

3. The systolic pressure shall be recorded at the appearance of the Korotkoff sounds (phase I) and the diastolic pressure at their disappearance (phase V). Half hour tension recording may be applied, automatic blood pressure equipment acceptable to the AMS shall be used. If the blood pressure is raised and/or the resting heart rate is increased, further observations should be made in the same fashion to ensure uniform results.

4. A candidate with a systolic blood pressure between 140-160 mmHg and/or a diastolic blood pressure between 90-95 mmHg, shall undergo observations on a regular basis (monthly). The results of these observations shall be part of the revalidation or renewal medical examination.

5. Anti-hypertensive treatment shall be agreed by the AMS. Medication acceptable to the AMS may include:
   a. non-loop diuretic agents;
   b. certain (generally hydrophilic) beta-blocking agents;
   c. Angiotensin Converting Enzyme (ACE) Inhibitors;
   d. long-acting slow-channel calcium blocking agents;
   e. angiotensin II receptor blocking agents;

   At commencement of anti-hypertensive treatment, the individual will be assessed as temporarily unfit because of potential side-effects, until the blood pressure is satisfactory controlled without side-effects.

6. Symptomatic hypertension or hypertension with comorbidity may require a special restriction as specified (SSL: only multicrew environment).

MAR-FCL 3.385 Cardiovascular system - Coronary artery disease

a. An applicant with suspected coronary artery disease shall be investigated. An applicant with asymptomatic, minor, coronary artery disease may be considered fit by the AMS subject to compliance with paragraph 7 of Appendix 1 to Subpart D.

b. Applicants with symptomatic coronary artery disease, or with cardiac symptoms controlled by medication, shall be assessed as unfit.

c. Applicants shall be assessed as unfit following myocardial infarction. A fit assessment may be considered by the AMS subject in compliance with paragraph 8 of Appendix 1 to Subpart D.

d. After an ischemic cardiac event (defined as a myocardial infarction, angina, significant arrhythmia or heart failure due to ischemia, or any type of cardiac revascularization) a fit assessment for initial applicants is not possible. At revalidation or renewal, a fit assessment may be considered by the AMS if the investigations in paragraph 8 of Appendix 1 to Subpart B are completed satisfactorily.

Appendix 1 to Subpart D Cardiovascular system

(See MAR-FCL 3.375 through 3.395)

7. In suspected asymptomatic coronary artery disease, or peripheral arterial disease, or BMI>30 with an increased cardiovascular risk (See MAR-FCL 3.415 Metabolic, nutritional and endocrine disease), exercise electrocardiography shall be required followed, if necessary, by further tests (myocardial perfusion scanning, stress echocardiography, coronary angiography or equivalent investigations acceptable to the AMS) which shall show no evidence of myocardial ischaemia or significant coronary stenosis.

8. An asymptomatic applicant who has satisfactorily controlled risk factors if any, and requiring no medication for ischaemic heart pain six months after the index event (myocardial infarction) shall have completed investigations, demonstrating:
   a. satisfactory symptom limited exercise ECG;
   b. left ventricular ejection fraction of greater than 50% without significant abnormality of wall motion and normal right ventricular function;
   c. satisfactory 24-hour ambulatory ECG recording;

   Follow-up investigation requires annual cardiovascular system review, including exercise ECG or exercise scintigraphy.

   Coronary angiography or other imaging testing is required no later than five years after the index event, unless non-invasive tests, e.g. exercise ECG/stress echo, are impeccable.

MAR-FCL 3.385 Cardiovascular system - Coronary artery disease

d. Applicants demonstrating satisfactory recovery six months following coronary by-pass surgery or angioplasty and or stenting may be assessed as fit by the AMS subject to compliance with paragraph 9 of Appendix 1 to Subpart D.

Appendix 1 to Subpart D Cardiovascular system

(See MAR-FCL 3.375 through 3.395)

9. An asymptomatic applicant having satisfactorily controlled risk factors and using, if necessary, Beta blockers, ACE inhibitors, Statins and Aspirin, who does not need to suppress ischaemic heart pain, may be reviewed. This review shall include the following investigations demonstrating:
   a. satisfactory symptom limited exercise ECG into Bruce Stage 4 or equivalent;
   b. left ventricular ejection fraction of greater than 50% without significant abnormality of wall motion and normal right ventricular ejection function;
   c. satisfactory 24-hour ambulatory ECG recording if indicating;

   The whole coronary vascular tree shall be assessed as satisfactory by a cardiologist acceptable to the AMS, and particular attention should be paid to multiple stenoses and/or multiple revascularizations. An untreated stenosis greater than 30% with functional flow limitation in the left main or proximal left anterior descending coronary artery should not be acceptable.
   Follow-up investigation requires annual cardiovascular system review, including exercise ECG or exercise scintigraphy. Coronary angiography or other imaging testing is required no later than five years after the index event, unless non-invasive tests, e.g. exercise ECG/stress echo, are impeccable.

MAR-FCL 3.390 Cardiovascular system - Rhythm/conduction disturbances

a. Applicants with clinically significant disturbance of supraventricular rhythm, whether intermittent or established, shall be assessed as unfit. A fit assessment may be considered by the AMS in compliance with paragraph 10 of Appendix 1 to Subpart D.

b. Applicants with asymptomatic sinus bradycardia or sinus tachycardia may be assessed as fit in the absence of significant underlying abnormality.

c. Applicants with evidence of sinoatrial disease require cardiological assessment in accordance with paragraph 10 of Appendix 1 to Subpart D.

d. Applicants with asymptomatic isolated uniform supraventricular or ventricular ectopic complexes need not to be assessed as unfit. (See paragraph 11 of Appendix 1 to Subpart D) Frequent or complex forms require full cardiological evaluation in accordance with paragraph 10 of Appendix 1 to Subpart D.

e. In the absence of any other abnormality, applicants with incomplete bundle branch block or stable left axis deviation may be assessed as fit. Applicants with complete right or left bundle branch block require cardiological evaluation on first presentation in accordance with paragraph 10 of Appendix 1. (See paragraph 12 of Appendix 1 to Subpart D)

f. Applicants with first degree and Mobitz type 1 A-V block may be assessed as fit in the absence of underlying abnormality. Applicants with Mobitz type 2 op complete A-V block shall be assessed as unfit. A fit assessment may be considered by the AMS in accordance with paragraph 10 of Appendix 1 to Subpart D.

Appendix 1 to Subpart D Cardiovascular system

(See MAR-FCL 3.375 through 3.395)

10. Any significant rhythm or conduction disturbance requires evaluation by a cardiologist acceptable to the AMS and appropriate follow-up in the case of a fit assessment.
    a. Such evaluation shall include:
        i. Exercise ECG to the Bruce protocol or equivalent. The test should be to maximum effort or symptom limited. Bruce stage IV shall be achieved and no significant abnormality of rhythm or conduction, nor evidence of myocardial ischaemia shall be demonstrated. Withdrawal of cardioactive medication prior to the test should be considered.
        ii. 24-hour ambulatory ECG which shall demonstrate no significant rhythm or conduction disturbance,
        iii. 2D Doppler echocardiogram which shall show no selective chamber enlargement, or significant structural, or functional abnormality, and a left ventricular ejection fraction of at least 50%.
    b. Further evaluation may include:
        i. Repeat 24-hour ECG recording;
        ii. electrophysiological study;
        iii. myocardial perfusion scanning, or equivalent test;
        iv. cardiac MRI or equivalent test;
        v. coronary angiogram or equivalent test.

11. Supraventricular or ventricular ectopy complexes on a resting electrocardiogram may require no further evaluation, provided the frequency can be shown to be not greater than one per minute (for example, on an extended rhythm strip).

MAR-FCL 3.390 Cardiovascular system - Rhythm/conduction disturbances

g. Applicants with broad and/or narrow complex tachycardias shall be assessed as unfit. A fit assessment may be considered by the AMS in accordance with paragraph 12 of Appendix 1 to Subpart D.

h. Applicants who have received ablation therapy shall be assessed as unfit. A fit assessment may be considered by the AMS in accordance with paragraph 13 of Appendix 1 to Subpart D. (See paragraph 12 of Appendix 1 to Subpart D)

i. Applicants with ventricular pre-excitation, e.g. Wolf-Parkinson-White syndrome, shall be assessed as unfit unless cardiological evaluation confirms that the applicant fulfils the requirement of paragraph 14 of Appendix 1 to Subpart D.

Appendix 1 to Subpart D Cardiovascular system

(See MAR-FCL 3.375 through 3.395)

12. Applicants who develop complete right bundle branch block over the age of 40 years should demonstrate a period of stability, normally 12 months, before a fit assessment may be carried out. Left bundle branch block is more commonly associated with coronary artery disease and thus requires more in-depth investigation, which may need to be invasive. The applicant for initial examination who has been thoroughly investigated and no pathology found may be assessed as fit. In case of a de-novo left bundle branch block at revalidation or renewal examinations a fit assessment may be considered after close follow-up and a period of stability not less than 12 months.

13. A fit assessment for applicants having undergone successful catheter ablation after at least three months, unless an electrophysiological study, undertaken at a minimum of two months after the ablation, demonstrates satisfactory results. In case of atrial fibrillation, revalidation or renewal applicants are unfit during 6 months after a pulmonary vein isolation or comparable procedure aimed at the treatment of the atrial fibrillation. A fit assessment may be considered following a cardiac evaluation satisfactory to the AMS. An annual cardiologic evaluation shall be necessary (SIC limitation).

14. a. A fit assessment may be considered by the AMS subject to satisfactory outcome of appropriate cardiological investigation as in paragraph 7.
    b. Asymptomatic applicants with pre-excitation may be considered fit by the AMS if an electrophysiological study, including adequate drug-induced autonomic stimulation reveals no inducible re-entry tachycardia and the existence of multiple pathways is excluded.

MAR-FCL 3.390 Cardiovascular system - Rhythm/conduction disturbances

j. Applicants with an endocardial pacemaker shall be assessed as unfit unless cardiological evaluation confirms that the requirements of paragraph 15 of Appendix 1 to Subpart D can be met.

Appendix 1 to Subpart D Cardiovascular system

(See MAR-FCL 3.375 through 3.395)

15. Applicants with an endocardial pacemaker may be considered for recertification three months after an insertion provided:
    a. there is no other disqualifying disorder;
    b. bipolar lead systems have been used;
    c. the applicant is not pacemaker dependent
    d. symptom limited exercise electrocardiography into Bruce Stage IV or equivalent shows no abnormality or evidence of myocardial ischaemia. Scintigraphy may be helpful in the presence of conduction disturbance/paced complexes in the resting electrocardiogram;
    e. regular follow-up by a cardiologist acceptable to the AMS with a pacemaker check and Holter monitoring if indicated;
    f. experience has shown that any failures of pacemakers are most likely to occur in the first three months after being fitted. Therefore, a fit assessment should not be considered before this period has elapsed. It is known that certain operational equipment may interfere with the performance of the pacemaker. The type of pacemaker used, therefore, shall have been tested to ensure it does not suffer from interference in the operational environment. Supporting data and a performance statement to this effect must be available from the supplier.

MAR-FCL 3.395 Cardiovascular system - General

a. Applicants with peripheral vascular disease shall be assessed as unfit, before or after surgery. Provided there is no significant impairment, a fit assessment may be considered by the AMS subject to compliance with paragraph 16.a of Appendix 1 to Subpart D.

b. Applicants with aneurysm of the thoracic or abdominal aorta, before or after surgery, shall be assessed as unfit. Applicants with aneurysm of the infrarenal abdominal aorta may be considered fit by the AMS at renewal or revalidation examinations, subject to compliance paragraph 16.b of Appendix 1 to Subpart D.

c. Applicants with clinically significant abnormality of any of the heart valves shall be assessed as unfit.

d. Applicants with minor cardiac valvular abnormalities may be assessed as fit by the AMS following cardiological evaluation in accordance with paragraph 16.c and d. of Appendix 1 to Subpart D.

Appendix 1 to Subpart D Cardiovascular system

(See MAR-FCL 3.375 through 3.395)

16.a. Fit assessment may be considered by the AMS if there is no sign of significant coronary disease, or evidence of significant atheroma elsewhere, and no functional impairment of the end organ supplied. Evaluation will include an exercise ECG and a duplex ultrasound investigation.

b. After surgery for infra renal abdominal aortic aneurysm without complications and subject to the individual being free of disease of the carotid and coronary circulation a fit assessment may be considered by the AMS.

c. Unidentified cardiac murmurs shall require assessment by the AMS following evaluation by a cardiologist acceptable to the AMS. If considered significant, further investigation shall include 2D Doppler echocardiography.

d. Valve conditions

1. Applicants with bicuspid aortic valve may be assessed as fit without a limitation if no other cardiac or aortic abnormality is demonstrated. Follow-up with echocardiography, as necessary, will be determined by the AMS. Until the age of 30 years, the follow-up shall be 2 yearly, after the 30th birthday, the follow-up shall be yearly.
2. Applicants with aortic stenosis requires AMS review. Left ventricular function must be intact. A history of systemic embolism or significant dilatation of the thoracic aorta are disqualifying. Those with a mean pressure gradient of up to 20 mmHg may be assessed as fit. Those with mean pressure gradient above 20 mmHg but no greater than 40 mmHg may be assessed as fit without limitation. A mean pressure gradient up to 50 mmHg may be acceptable, at the discretion of the AMS. Follow-up with 2D Doppler echocardiography, as necessary, will be determined by the AMS.
3. Applicants with aortic regurgitation may be assessed as fit without a limitation only if trivial. There shall be no demonstrable abnormality of the ascending aorta on 2D Doppler echocardiography. Follow-up, as necessary, will be determined by the AMS.
4. Applicants with rheumatic mitral valve disease shall normally assessed as unfit.
5. Mitral leaflet prolapse/mitral regurgitation. Asymptomatic applicants with isolated mid-systolic click may need no limitation. Applicants with uncomplicated minor regurgitation may require a limitation as determined by the AMS. Applicants with evidence of volume overloading of the left ventricle demonstrated by increased left ventricular end-diastolic diameter shall be assessed as unfit. Periodic review and assessment as determined by the AMS is required.

MAR-FCL 3.395 Cardiovascular system - General

e. Applicants with cardiac valve replacement/repair shall be assessed as unfit. Favourable cases may be assessed as fit by the AMS following cardiological evaluation in accordance with paragraph 16.e of Appendix 1 to Subpart D.

f. Systemic anticoagulant therapy is disqualifying. Applicants who have received treatment of limited duration may be considered for a fit assessment by the AMS. Systemic anticoagulant therapy for pulmonary embolism or DVT is disqualifying. Anticoagulant for possible arterial thromboembolism is disqualifying. Pulmonary embolism requires full evaluation. Applicants may be considered fit by the AMS in accordance with paragraph 17 of Appendix 1 to Subpart D.

Appendix 1 to Subpart D Cardiovascular system

(See MAR-FCL 3.375 through 3.395)

16.e. Valvular surgery

1. Asymptomatic applicants with a tissue valve may be assessed as fit by the AMS six months after valvular surgery subject to:
   i. normal valvular and ventricular function as judged by 2D Doppler echocardiography;
   ii. Satisfactory symptom limited exercise electrocardiography, or equivalent;
   iii. the demonstrated absence of coronary artery disease unless this has been satisfactorily treated by re-vascularisation;
   iv. no cardioactive medication is required;
   v. annual cardiological review to include an exercise ECG and 2 Doppler echocardiography carried out by a cardiologist acceptable to the AMS shall be required.
2. Applicants with implanted mechanical valves may be assessed as fit subject to documented exemplary control of their anticoagulant therapy. Age factors should form part of the risk assessment.

17. After full evaluation and in cases of anticoagulant therapy for pulmonary embolism or DVT, once anticoagulant therapy is stable and subject to exemplary control the applicant may be found fit subject to a report from an appropriate specialist acceptable to the AMS. Subcutaneous heparin treatment may be acceptable subject to a satisfactory report from an appropriate specialist according to the AMS.

MAR-FCL 3.395 Cardiovascular system - General

g. Applicants with any abnormality of the pericardium, myocardium or endocardium shall be assessed as unfit until complete resolution has occurred or following cardiological evaluation in accordance with paragraph 18 of Appendix 1 to Subpart D.

h. Applicants with congenital heart conditions, before or after corrective surgery, shall generally be assessed as unfit. Applicants with minor abnormalities may be assessed as fit by the AMS following cardiological investigation in accordance with paragraph 19 of Appendix 1 to Subpart D.

i. An applicant having undergone cardiac or heart/lung transplantation shall be assessed as unfit.

j. Applicants with a history of recurrent vasovagal syncope shall be assessed as unfit. A fit assessment may be considered by the AMS in applicants with a suggestive history subject to compliance with paragraph 20 of Appendix 1 to Subpart D.

h. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 1 to Subpart D Cardiovascular system

(See MAR-FCL 3.375 through 3.395)

18. Abnormalities of the pericardium, myocardium and endocardium, primary or secondary, shall generally be assessed as unfit until clinical resolution has taken place. Cardiovascular assessment at the discretion of a cardiologist acceptable to the AMS may need to include 2D Doppler echocardiography, exercise electrocardiography, 24-hour ambulatory electrocardiographic monitoring, myocardial scintigraphy and coronary angiography.

19. Congenital heart conditions including those surgically corrected, shall normally be assessed as unfit unless functionally unimportant and no medication is required. Cardiological assessment by the AMS shall be required. Investigations may include Doppler echocardiography, exercise electrocardiography and 24-hour ambulatory electrocardiographic monitoring. Regular cardiological review shall be required. Periodicity of review should be at the discretion of a cardiologist acceptable to the AMS.

20. Applicants who have suffered recurrent episodes of syncope shall undergo the following:
    a. a symptom limited 12 lead exercise ECG to Bruce Stage IV, or equivalent, which a specialist acceptable to the AMS interprets as showing no abnormality. If the resting ECG is abnormal, myocardial scintigraphy/stress echocardiography shall be required.
    b. a 2D Doppler echocardiogram showing no significant selective chamber enlargement nor structural nor functional abnormality of the heart, valves nor myocardium.
    c. a 24-hour ambulatory ECG recording showing no conduction disturbance, nor complex, nor sustained rhythm disturbance nor evidence of myocardial ischaemia.
    d. and may include a tilt test, carried out to a standard protocol, which in the opinion of a cardiologist acceptable to the AMS shows no evidence of vasomotor instability.

    Neurological review will normally be indicated.

MAR-FCL 3.400 Respiratory System - General

a. An applicant for the holder of a Class 3 Military MMC shall not possess any abnormality of the respiratory system, congenital or acquired, which is likely to interfere with the safe exercise of the privileges of the applicable licence(s)/ certificate(s) of competence.

b. Posterior/anterior chest radiography shall be carried out on clinical indication.

c. Pulmonary function tests (See paragraph 1 of Appendix 2 to Subpart D) are required at the initial examination and all examinations thereafter and on clinical indication. Applicants with significant impairment of pulmonary function shall be assessed as unfit.

d. If pulmonary allergy is expected, further examination should take place. Allergic disease should be excluded by methacholine and provocative pulmonary testing.

e. Any significant abnormality shall require further evaluation by a specialist in respiratory diseases.

MAR-FCL 3.405 Respiratory system - Disorders

a. Applicants with significant chronic obstructive airway disease shall be assessed as unfit. Where appropriate, applicants shall be referred to a specialist in respiratory diseases for assessment.

b. Applicants with asthma requiring medication shall be assessed in accordance with the criteria in paragraph 2 of Appendix 2 to Subpart D.

c. Applicants with active inflammatory diseases of the respiratory system shall be assessed as temporarily unfit.

d. Applicants with active sarcoidosis shall be assessed as unfit. (See paragraph 3 of Appendix 2 to Subpart D)

Appendix 2 to Subpart D Respiratory System

(See MAR-FCL 3.400 and 3.405)

1. Spirometry examination is required for all examinations. An FEV1/FVC ratio less than z-score -1,96 shall require evaluation by a specialist in respiratory disease

2. Applicants experiencing recurrent attacks of asthma shall be assessed as unfit. Certification may be considered by the AMS if the applicant has mild asthma, with acceptable pulmonary function tests and medication compatible with the safe execution of the privileges of the applicable licence/certificate of competence.

3. A fit assessment may be considered by the AMS if the disease is:
   a. fully investigated with respect to the possibility of systemic involvement;
   b. limited to hilar and mediastinal lymphadenopathy and the applicant is taking no medication; and
   c. pulmonary function test should be normal.

MAR-FCL 3.405 Respiratory system - Disorders

e. Applicants with spontaneous pneumothorax shall be assessed as unfit pending full evaluation. (See paragraph 4 of Appendix 2 to Subpart D)

f. Applicants requiring major chest surgery shall be assessed as unfit for a minimum period of 3 months following operation and until such time as the effects of the operation are no longer likely to interfere with the safe exercise of the privileges of the applicable licences/certificates of competence. (See paragraph 5 of Appendix 2 to Subpart D) The underlying pathology which necessitated the surgery will need to be considered in the assessment process at revalidation or renewal.

g. Applicants with Pulmonary emphysema shall be assessed as unfit. (See paragraph 6 of Appendix 2 to Subpart D)

h. Applicants with active tuberculosis shall be assessed as unfit. (See paragraph 7 of Appendix 2 to Subpart D)

i. Applicants suffering from excessive daytime sleepiness or with unsatisfactorily treated sleep apnoea syndrome shall be assessed as unfit. A fit assessment with SIC limitation, may be appropriate if acceptable treatment leads to satisfactory AHI (Apnoea Hypopnea Index) scores. See also the applicable paragraph in the Neurology and ENT section

j. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 2 to Subpart D Respiratory system

(See MAR-FCL 3.400 and 3.405)

4. Spontaneous pneumothorax
   a. A fit assessment following a fully recovered single spontaneous pneumothorax may be acceptable following a period of assessment after the event with full respiratory evaluation including CT-scan or equivalent.
   b. A fit assessment at revalidation or renewal may be considered by the AMS if the applicant fully recovers from a single spontaneous pneumothorax after 3 months.
   c. A recurrent spontaneous pneumothorax is disqualifying. A fit assessment may be considered by the AMS following surgical intervention with a satisfactory recovery, lung function must be normal.

5. A fit assessment at revalidation or renewal following pneumonectomy or lesser chest surgery may be considered by the AMS after satisfactory recovery and full respiratory evaluation including CT scan or equivalent.

6. A fit assessment may be considered by the AMS if the condition is not causing significant symptoms.

7. Applicants with active Tuberculosis shall be assessed as temporarily unfit.
   a. A fit assessment after 6 months may be considered by the AMS after treatment with medication with full recovery.
   b. Applicants with quiescent or healed lesions may be assessed as fit.

MAR-FCL 3.410 Digestive System

a. An applicant for, or the holder of, a Class 3 MMC shall not possess any functional or structural disease of the gastro-intestinal tract or its adnexae which is likely to interfere with the safe exercise of the privileges of the applicable licence(s)/certificate(s) of competence.

b. Applicants with recurrent dyspeptic disorders requiring medication shall be assessed as unfit. (See paragraph 1 of Appendix 3 to Subpart D)

c. Pancreatitis is disqualifying. (However, see paragraph 2.a and 2.b of Appendix 3 to Subpart D)

d. Applicants exhibiting symptomatic multiple gallstones or a single large gallstone shall be assessed as unfit until effective treatment has been applied. (See paragraph 3 of Appendix 3 to Subpart D)

e. An applicant who has an established medical history or clinical diagnosis of acute or chronic inflammatory bowel disease (regional ileitis, ulcerative colitis, diverticulitis) shall be assessed as unfit. (See paragraph 4 of Appendix 3 to Subpart D)

f. An applicant with herniae that may give rise to complications leading to incapacitation shall be assessed as unfit.

g. Any sequela of disease ~~or~~ which needs surgical intervention in any part of the digestive tract or its adnexae likely to cause incapacitation, in particular any obstruction due to stricture or compression, shall be assessed as unfit. (See paragraph 5 of Appendix 3 to Subpart D)

h. An applicant who has undergone a surgical operation on the digestive tract or its adnexae, involving a total or partial excision or a diversion of any of these organs, shall be assessed as unfit. (See paragraph 5 of Appendix 3 to Subpart D)

i. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 3 to Subpart D Digestive system

(See MAR-FCL 3.410)

1. a. Recurrent dyspepsia requiring medication shall be investigated. Laboratory testing should include haemoglobin assessment and faecal examination. Any demonstrated ulceration or significant inflammation requires evidence of recovery before revalidation or renewal by the AMS.

2. a. A fit assessment may be considered by the AMS if the cause or obstruction (e.g. drug, gallstone) is removed.
   b. Alcohol may be a cause of dyspepsia and pancreatitis. If considered appropriate a full evaluation of its use/abuse is required.

3. A single large gallstone may be compatible with a fit assessment after consideration by the AMS. An individual with asymptomatic multiple gallstones while awaiting assessment or treatment may be considered as fit pending investigation.

4. A fit assessment may be considered by the AMS provided that the disease is in an established remission and stabilised and that minimal, if any, medication is being taken. Regular follow-up is required.

5. Following major abdominal surgery, it is unlikely that an individual will be fit to return to work before a minimum of three months has elapsed. The AMS may consider earlier fit assessment at revalidation or renewal if recovery is complete, the applicant is asymptomatic, there is a minimal risk of secondary complication or recurrence and the effects of the operation are no longer likely to interfere with the safe exercise of the privileges of the applicable licences/certificates of competence.

MAR-FCL 3.415 Metabolic, Nutritional and Endocrine Diseases

a. An applicant for, or the holder of, a Class 3 MMC shall not possess any functional or structural metabolic, nutritional or endocrine disorder which is likely to interfere with the safe exercise of the privileges of the applicable licence(s)/certificate(s) of competence.

b. An applicant with metabolic, nutritional or endocrine dysfunction shall be assessed as unfit. (See paragraph 1 of Appendix 4 to Subpart D)

c. Endocrine surgery entails unfitness. Fit assessment will be considered by the AMS after full recovery as outlined in paragraph 1 of Appendix 4 to Subpart D.

d. Applicants with diabetes mellitus shall be assessed as unfit. (See paragraph 2 and 3 of Appendix 4 to Subpart D)

e. Applicants with diabetes requiring insulin shall be assessed as unfit.

f. The use of antidiabetic medications is disqualifying. (See paragraph 3 of Appendix 4 to Subpart D)

g. Applicants with a Body Mass Index ≥ 30 may be assessed as fit only if the excess weight is not likely to interfere with the safe exercise of the applicable licence(s). (See paragraph 4 of Appendix 4 to Subpart D)

h. A Body Mass Index lower than 18 is disqualifying (See paragraph 5 of Appendix 4 to Subpart D)

i. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 4 to Subpart D Metabolic, Nutritional and Endocrine Diseases

(See MAR-FCL 3.415)

1. A fit assessment may be considered by the AMS if the condition is asymptomatic, clinically compensated and stable with or without replacement therapy, and regularly reviewed by an appropriate specialist.

2. Glycosuria and abnormal blood glucose levels require investigation. A fit assessment may be considered by the AMS if normal glucose tolerance is demonstrated (low renal threshold) or impaired glucose tolerance without diabetic pathology is fully controlled by diet and regularly reviewed.

3. The use of biguanides, alpha-glucosidase inhibitors, glitazones and DPP4 inhibitors may be acceptable for type 2 diabetes, as they do not cause hypoglycaemia.

4. A cardiovascular risk review may be necessary.

5. In case of a low BMI (<18) a fit assessment may be considered by the AMS after investigation by specialist in internal medicine and psychiatrist

MAR–FCL 3.420 Haematology

a. An applicant for, or the holder of, a Class 3 MMC shall not possess any haematological disease which is likely to interfere with the safe exercise of the privileges of the applicable licence(s)/certificate(s) of competence.

b. Haemoglobin shall be tested at every medical examination. Applicants with abnormal haemoglobin values (male < 8,0 mmol/l; female < 7,0 mmol/l) shall be investigated. (See paragraph 1 of Appendix 5 to Subpart D) (See paragraph 1 of Appendix 5 to Subpart D)

c. Applicants with significant localised and generalised enlargement of the lymphatic glands and diseases of the blood shall be assessed as unfit. (See paragraph 2 of Appendix 5 to Subpart D)

d. Applicants with acute leukaemia shall be assessed as unfit. Initial applicants with a history of acute lymphatic leukaemia may assesses as fit by the AMS if the ALL is in remission for at least 10 years; after radiation therapy of the skull, a neurological and psychiatric evaluation is necessary. At revalidation or renewal applicants may be assessed as fit by the AMS after established remission.

e. Applicants with chronic leukaemia shall be assessed as unfit. After a period of demonstrated stability a fit assessment may be considered by the AMS. (See paragraph 3 of Appendix 5 to Subpart D)

f. Applicants with significant enlargement of the spleen shall be assessed as unfit. (See paragraph 4 of Appendix 5 to Subpart D)

Appendix 5 to Subpart D Hematology

(See MAR–FCL 3.420)

1. Anaemias demonstrated by reduced haemoglobin level require investigation. Anaemia which is unamenable to treatment is disqualifying. A fit assessment may be considered by the AMS in cases where the primary cause has been satisfactorily treated (e.g. iron deficiency or B12 deficiency) or where minor thalassaemia or haemoglobinopathies are diagnosed without a history of crises.

2. Lymphatic enlargement requires investigation. A fit assessment may be considered by the AMS in cases of acute infectious process which is fully recovered or Hodgkin's lymphoma and Non-Hodgkin’s lymphoma of high-Grade which has been treated and is in full remission.

3. In cases of chronic leukaemia, a fit assessment may be considered by the AMS. There shall be no history of central nervous system involvement and no continuing side-effects from treatment of flight safety importance. Haemoglobin and platelets levels shall be satisfactory. Regular follow-up is required.

4. Splenomegaly requires investigation. The AMS may consider a fit assessment when the enlargement is minimal, stable and no associated pathology is demonstrable (e.g. treated chronic malaria), or if the enlargement is minimal and associated with another acceptable condition (e.g. Hodgkin’s lymphoma in remission).

MAR–FCL 3.420 Haematology

g. Applicants without spleen or functional asplenia shall be assessed as unfit and should be assessed on an individual basis. (See paragraph 5 of Appendix 5 to Subpart D)

h. Applicants with significant polycythaemia (haematocrit >51% by male or >48% by female) shall be assessed as unfit. (See paragraph 6 of Appendix 5 to Subpart C)

i. Applicants with a coagulation defect or a severe thrombocytopaenia (<75 x 10^3) shall be assessed as unfit. (See paragraph 7 and 8 of Appendix 5 to Subpart C)

j. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 5 to Subpart D Haematology

(See MAR–FCL 3.420)

5. Asplenia (anatomical or functional) requires further investigation. In case of acquired asplenia special attention should be paid to diseases associated with functional asplenia requiring no specialist consultation (e.g. coeliac, sickle cell disease, hemoglobinopathy, high doses corticosteroiD)

6. Polycythaemia requires investigation. The AMS may consider a fit assessment if the condition is stable and no associated pathology has been demonstrated.

7. Significant coagulation defects require investigation. The AMS may consider a fit assessment if there is no history of significant bleeding or clotting episodes.

8. Thrombocytopaenia requires investigation. The AMS may consider a fit assessment after an idiopathic or auto-immune thrombocytopaenia thrombopathy if the number of thrombocytes is stable/

MAR-FCL 3.425 Urinary System

a. An applicant for, or the holder of, a Class 3 MMC shall not possess any functional or structural disease of the urinary system or its adnexae which is likely to interfere with the safe exercise of the privileges of the applicable licence(s)/certificate(s) of competence.

b. An applicant presenting any signs of organic disease of the kidney shall be assessed as unfit. Urinalysis shall form part of every medical examination. The urine shall contain no abnormal element considered to be of pathological significance. Particular attention shall be paid to disease affecting the urinary passages and the genital organs. (See paragraph 1 of Appendix 6 to Subpart D)

c. An applicant presenting with urinary calculi shall be assessed as unfit. (See paragraph 2 of Appendix 6 to Subpart D)

d. An applicant with any sequela of disease or surgical procedures on the kidneys and the urinary tract likely to cause incapacitation, in particular any obstruction due to stricture or compression, shall be assessed as unfit. An applicant with compensated nephrectomy without hypertension or uraemia may be considered fit. (See paragraph 3 of Appendix 6 to Subpart D)

e. An applicant who has undergone a major surgical operation (kidney, bladder and prostate) in the urinary tract or the urinary apparatus involving a total or partial excision or a diversion of any of its organs shall be assessed as unfit until such time as the effects of the operation are no longer likely to cause incapacity. (See paragraph 3 and 4 of Appendix 6 to Subpart D)

f. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 6 to Subpart D Urinary System

(See MAR-FCL 3.425)

1. Any abnormal finding upon urinalysis requires two repeated urinalyses with a week in between. When 2 out of 3 show abnormal findings, the applicant has to be referred to an urinary specialist. Investigation and analysis shall include proteinuria, haematuria and glycosuria.

2. An asymptomatic calculus or history of renal colic requires investigation. After treatment a fit assessment may be considered with appropriate follow-up, which is to be decided by a specialist acceptable to the AMS. Residual calculi shall be disqualifying unless they are in a location where they are unlikely to move and give rise to symptoms.

3. Major urological surgery (kidney, bladder and prostate) is disqualifying for a minimum of 3 months. The AMS may consider a fit assessment if the applicant is completely asymptomatic and there is a minimal risk of secondary complication or recurrence.

4. Renal transplantation or total cystectomy or ureterostomy is disqualifying for initial certification. At renewal or revalidation, a fit assessment may be considered by the AMS in case of:
   a. renal transplant which is fully compensated and tolerated with minimal immuno-suppressive therapy after at least twelve months; and
   b. total cystectomy which is functioning satisfactorily with no recurrence of primary pathology.

MAR–FCL 3.430 Sexual transmitted diseases and other infections

a. An applicant for, or the holder of, a Class 3 MMC shall have no established medical history or clinical diagnosis of any sexually transmitted disease or other infection which is likely to interfere with the safe exercise of the privileges of the applicable licence(s)/certificate(s) of competence. (See paragraph 1 of Appendix 7 to Subpart D)

b. An applicant having HIV infection involving symptoms of active disease such as AIDS, AIDS Related Complex, or Central Nervous System involvement shall be assessed as unfit. However, a fit assessment at renewal and revalidation of asymptomatic HIV positive individuals may be considered in accordance with paragraph 1 of Appendix 7 to Subpart D.

c. Infectious hepatitis may be disqualifying. (See paragraph 2 of Appendix 7 Subpart D)

d. A diagnosis of syphilis is disqualifying. Symptoms and complications of the disease which impair the safe exercise of the privileges of the licence/certificate of competence are disqualifying. (See paragraph 3 of Appendix 7 to Subpart D)

e. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 7 to Subpart D Sexual transmitted diseases and other infections

(See MAR–FCL 3.430)

1. There is no requirement for routine testing of HIV status, but testing may be carried out on clinical indication. Once HIV positivity has been confirmed, a process of rigorous assessment and follow-up should be introduced to enable individuals to continue working provided their ability to exercise their licenced privileges to the required level of safety is not impaired. At revalidation or renewal, a fit assessment of HIV positive individuals with a SIC limitation may be considered by the AMS subject to yearly review. The occurrence of AIDS or AIDS related complex is disqualifying.

2. If infectious hepatitis has been confirmed, a process of rigorous assessment and follow-up should be introduced to enable individuals to continue working provided their ability to exercise their licenced privileges to the required level of safety is not impaired. Treatment must be assessed by a specialist acceptable to the AMS on an individual basis for its appropriateness and any side-effects. At revalidation or renewal, a fit assessment of infectious hepatitis individuals a SIC limitation may be considered by the AMS subject to yearly review.

3. Acute syphilis is disqualifying. A fit assessment may be considered by the AMS in the case of those fully treated and recovered from all possible stages.

MAR-FCL 3.435 Gynaecology and Obstetrics

a. An applicant for, or the holder of, a Class 3 MMC shall not possess any functional or structural obstetric or gynaecological condition which is likely to interfere with the safe exercise of the privileges of the applicable licence(s)/certificate(s) of competence.

b. If obstetric evaluation indicates a normal pregnancy, the applicant may be assessed as fit until no later than the end of the 34th week of gestation. (See paragraph 1 and 2 of Appendix 8 to Subpart D)

c. An applicant who has undergone a major gynaecological operation shall be assessed as unfit. (See paragraph 3 of Appendix 8 to Subpart D)

d. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 8 to Subpart D Gynaecology and Obstetrics

(See MAR-FCL 3.435)

1. The AMS, or the FS under the direction of the AMS where appropriate, should notify the candidate in writing of any potentially significant complications of pregnancy.

2. Licence privileges may be resumed upon satisfactory confirmation of full recovery following confinement or termination of pregnancy.

3. Major gynaecological surgery is normally disqualifying. The AMS may consider a fit assessment at revalidation or renewal if the holder is completely asymptomatic, there is only a minimal risk of secondary complication or recurrence and the effects of the operation are no longer likely to interfere with the safe exercise of the privileges of the licence/certificate of competence.

MAR-FCL 3.440 Musculoskeletal Requirements

a. An applicant for or holder of a Class 3 MMC shall not possess any abnormality of the bones, joints, muscles and tendons, congenital or acquired, which is likely to interfere with the safe exercise of the privileges of the applicable licence(s)/certificate(s) of competence. (See paragraph 1 and 2 of Appendix 9 to Subpart D)

b. An applicant suffering from severe obesity shall be assessed as unfit. (See paragraph 3 of Appendix 9 to Subpart D)

c. Applicants with osteoarthritic or muscular tendon progressive conditions resulting in functional upset may be assessed as unfit. (See paragraph 4 of Appendix 9 to Subpart D)

d. A fit assessment at revalidation or renewal in cases of limb deficiency, with or without limb prosthesis, may be considered by the AMS following satisfactory assessment in the working environment.

e. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 9 to Subpart D Musculoskeletal Requirements

(See MAR-FCL 3.440)

1. Abnormal physique, including obesity (BMI ≥ 30), or muscular weakness may require medical assessment (including that in the working environment) as approved by the AMS.

2. Locomotor dysfunction, amputations, malformations, loss of function and progressive osteoarthritic disorders will be assessed on an individual basis. This will be carried out by the FS in conjunction with the appropriate operational expert with acknowledge of the complexity of the tasks involved.

3. The applicant's age and body mass index should be taken into account when making the assessment.

4. Osteoarthritic or muscular tendon progressive conditions may be of congenital or acquired origin. Any functional upset should be evaluated against its impact on the individual's ability to operate satisfactorily in the working environment. They shall not be taking any disqualifying medication. (See paragraph 2 of Appendix 9 to Subpart D)

MAR-FCL 3.445 Psychiatric requirements

a. An applicant for or holder of a Class 3 MMC shall have no established medical history or clinical diagnosis of any psychiatric disease or disability, condition or disorder, acute or chronic, congenital or acquired, which is likely to interfere with the safe exercise of the privileges of the applicable licence(s)/certificate(s) of competence.

b. Particular attention shall be paid to the following (See paragraph 1 to 5 of Appendix 10 to Subpart D):

   1. psychotic symptoms;
   2. depressive and anxiety disorders;
   3. personality disorders, especially if severe enough to have resulted in overt acts;
   4. neurocognitive disorders; or
   5. use of psychoactive drugs or other substances, or abuse of alcohol, with or without dependency.

c. An established condition including psychotic symptoms is disqualifying (See paragraph 2 of Appendix 10 to Subpart D)

d. Depressive or anxiety disorders or an established neurocognitive disorder is disqualifying (See paragraph 3 of Appendix 10 to Subpart D)

e. A single self-destructive action or repeated overt acts are disqualifying (See paragraph 4 of Appendix 10 to Subpart D)

f. Abuse of alcohol and use of psychoactive drugs or substances with or without dependency is disqualifying (See paragraph 5 of Appendix 10 to Subpart D)

Appendix 10 to Subpart D Psychiatric requirements

(See MAR-FCL 3.445)

1. The issues raised in this section are complex. Some guidance may be found in the chapter on Aviation Psychiatry of the JAR FCL 3 Manual.

2. A fit assessment may only be considered if the AMS can be satisfied that the original diagnosis was inappropriate or inaccurate, or in the case of a single episode of delirium provided that the applicant has suffered no permanent impairment.

3. An established depressive or anxiety disorder is disqualifying. The AMS may consider a fit assessment after review by a psychiatric specialist acceptable to the AMS and after psychotropic treatment has been stopped for an appropriate period. Prolonged administration of limited psychotropic medication to prevent relapse may be considered, only by a psychiatric specialist acceptable to the AMS.

4. A fit assessment may be considered by the AMS after full consideration of an individual case and will require psychological and psychiatric review.

5. A fit assessment may be considered by the AMS after a period of two years documented sobriety or freedom from drug use. A fit assessment at revalidation or renewal at an earlier point may be considered at the discretion of the AMS following treatment and review which may include:
   a. inpatient treatment;
   b. review by a psychiatric specialist acceptable to the AMS; and
   c. ongoing review including blood testing and peer reports, which may be required indefinitely.

MAR-FCL 3.450 Neurological requirements

a. An applicant for holder of a Class 3 MMC shall have no established medical history or clinical diagnosis of any neurological condition which is likely to interfere with the safe exercise of the privileges of the applicable license(s).

b. Any neurological condition which might interfere with the safe exercise of the privileges of the applicable license(s) shall be assessed by a neurologist acceptable to the AMS.

c. Progressive diseases of the nervous system shall be assessed as unfit (See paragraph 1 to Appendix 11, Subpart D)

d. Cerebrovascular disease and intracerebral malformations shall be assessed by a neurologist acceptable to the AMS (See paragraph 2 to Appendix 11, Subpart D)

e. Epilepsy and other causes of disturbance of consciousness shall be assessed as unfit (See paragraph 3 to Appendix 11, Subpart D)

Appendix 11 to Subpart D Neurological requirements

(See MAR-FCL 3.450)

1. Any stationary or progressive disease of the nervous system which has caused or is likely to cause a significant disability is disqualifying. However, in case of minor functional losses, associated with stationary disease, the AMS may consider a fit assessment after full evaluation.
   A diagnosis of Multiple Sclerosis is disqualifying. At revalidation or renewal, a fit assessment may be considered by the AMS in case of full remission and after full evaluation.

2. Cerebrovascular disease and intracerebral malformations.
   a. TIA (including transient monocular blindness) or ischemic stroke is disqualifying.
   b. A history of intracerebral hemorrhage is disqualifying.
   c. Unruptured intracerebral aneurysms are disqualifying.
   d. Intracerebral cavernoma and intracerebral arterio-venous malformation (AVM) are disqualifying.
   e. Aneurysmal subarachnoid hemorrhage is disqualifying, as is subarachnoid hemorrhage due to other vascular anomalies.
   f. A fit assessment may be considered by the AMS for peri mesencephalic hemorrhage after neurological assessment.
   g. A fit assessment may be considered by the AMS for intracerebral developmental venous anomaly (DVA) after neurological assessment.

3. Epilepsy and other causes of disturbance of consciousness.
   a. Syncope of uncertain cause is disqualifying. In case of a single episode of disturbance of consciousness, which can be satisfactorily explained, a fit assessment may be considered by the AMS. More than 3 episodes per year requires evaluation. Restrictions may be applied.
   b. A diagnosis of epilepsy is disqualifying. A fit assessment may be considered by the AMS if the applicant has been free of recurrence and off treatment for more than 10 years. In case of an acute symptomatic seizure which is considered to have a very low risk of recurrence a fit assessment may be considered by the AMS after 2 years. Restrictions may be applied.
   c. Electroencephalography is required when indicated by the applicant's history or on clinical grounds. Epileptiform paroxysmal EEG abnormalities and focal slow waves are disqualifying. Further evaluation shall be carried out by the AMS.

MAR-FCL 3.450 Neurological requirements

f. Migraine, Trigeminal Autonomic Cephalalgias and trigeminal neuralgia are disqualifying (See paragraph 4 to Appendix 11, Subpart D)

g. Any head injury which has been severe enough to cause loss of consciousness or is associated with penetrating brain injury shall be examined by a neurologist acceptable to the AMS (See paragraph 5 to Appendix 11, Subpart D)

h. Intracerebral tumors shall be assessed as unfit (See paragraph 6 to Appendix 11, Subpart D)

i. Spinal or peripheral nerve injury shall be assessed by a neurologist acceptable to the AMS (See paragraph 7 to Appendix 11, Subpart D)

j. Neurological infectious diseases shall be assessed as unfit (See paragraph 8 to Appendix 11, Subpart D)

Appendix 11 to Subpart D Neurological requirements

(See MAR-FCL 3.450)

4. Headache syndromes.
   a. A history of migraine is disqualifying. After neurological assessment a fit assessment at revalidation of renewal may be considered by the AMS at least 6 months after first presentation. Restrictions may be appropriate for a period of 2 years.
   b. A diagnosis of TAC (trigeminal autonomic cephalgia) is disqualifying.
   c. A diagnosis of trigeminal neuralgia is disqualifying.

5. Head injury.
   a. A fit assessment after mild head injury may be considered by the AMS after 1 month.
   b. A fit assessment after moderate head injury at revalidation or renewal with restrictions may be considered by the AMS after 6 months. A fit assessment without limitations may be considered by the AMS after 2 years.
   c. A fit assessment after severe head injury at revalidation or renewal with long term restrictions may be considered by the AMS after 5 years.

6. Intracerebral tumors are disqualifying. A fit assessment at revalidation or renewal may be considered by the AMS in case of accidental finding of benign intracranial lesions which are asymptomatic, restrictions may be applied.

7. Spinal or peripheral nerve injury.
   a. Assessment of applicants with a history of spinal or peripheral nerve injury shall be undertaken in conjunction with the musculoskeletal requirements.
   b. Peripheral or spinal nerve injury that does not interfere with the safe exercise of the privileges of the applicable license(s) may be assessed as fit by the AMS provided there is no underlying progressive neurological disorder. Restrictions may be applied.
   c. Asymptomatic lumbar disc herniations (found accidentally on CT or MRI) may be assessed as fit after neurological consultation.

8. Neurological infectious diseases are disqualifying.
   a. Bacterial meningitis is disqualifying. A fit assessment may be considered by the AMS after full evaluation after at least 6 months.
   b. Viral meningitis is disqualifying. A fit assessment may be considered after full evaluation after at least 3 months.
   c. Viral encephalitis is disqualifying.

MAR-FCL 3.455 Ophthalmological Requirements

a. An applicant for or holder of a Class 3 MMC shall not possess any abnormality of the function of the eyes or their adnexae or any active pathological condition, congenital or acquired, acute or chronic, or any sequela of eye surgery (See paragraph 1 of Appendix 12 to Subpart D) or trauma, which is likely to interfere with the safe exercise of the privileges of the applicable licence(s)/certificate(s) of competence.

b. A comprehensive ophthalmological examination is required at the initial examination and at every extended examination thereafter. (See paragraph 2 of Appendix 12 to Subpart D)

c. A routine eye examination shall form part of all general revalidation or renewal examinations. (See paragraph 3 of Appendix 12 to Subpart D)

d. Where at revalidation or renewal examinations the functional performance shows significant changes or the standards (1.0 in each eye separately and 1.0 with both eyes) can only be reached with corrective lenses, the applicant shall supply to the FS an examination report from an ophthalmologist or vision care specialist acceptable to the AMS.

e. The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 12 to Subpart D Ophthalmological Requirements

(See MAR-FCL 3.455)

1. Ophthalmological specialists used by the AMS should have a basic understanding of the functionality required by air traffic controllers in the exercise of the privileges of their licences/certificates of competence.
2. An ophthalmological examination by an ophthalmologist or a vision care specialist acceptable to the AMS (All abnormal and doubtful cases shall be referred to an ophthalmologist acceptable to the AMS.) is required at the initial examination for MMC and shall include:
    1. history; history of night blindness;
    2. visual acuity, near, intermediate and distant vision: with or without best optical correction (if needed) to meet standard;
    3. objective refraction. Hyperopic applicants under age 25 in cycloplegia;
    4. stereopsis (TNO stereopsis red green test)
    5. ocular motility and binocular vision;
    6. colour vision;
    7. visual fields;
    8. tonometry;
    9. examination of the external eye, anatomy, media (slit lamp) and fundoscopy;
    10. corneatopography.
    11. assessment of contrast and glare sensitivity after refractive surgery and on clinical indication.

3. At each general aeromedical revalidation or renewal examination an assessment of the visual fitness of the applicant shall be performed and the eyes shall be examined with regard to possible pathology and shall include:
    a. history;
    b. visual acuity, near, intermediate and distant vision: uncorrected and with best optical correction if needed;
    c. morphology by ophthalmoscopy;
    d. further examination on clinical indication. All abnormal and doubtful cases shall be referred to a specialist in aviation ophthalmology acceptable to the AMS.

MAR-FCL 3.455 Ophthalmological Requirements

f. An applicant who has undergone refractive surgery shall be assessed as unfit. (However, see paragraph 4 of Appendix 12 to Subpart D)

g. Other Ophthalmological Surgery is disqualifying. (However, see paragraph 5 of Appendix 12 to Subpart D)

h. Keratoconus is disqualifying. The AMS may consider a fit assessment for revalidation or renewal if the applicant meets the visual acuity requirements. (See paragraph 6 of Appendix 12 to Subpart D)

Appendix 12 to Subpart D Ophthalmological Requirements

(See MAR-FCL 3.455)

4. After refractive surgery, applicants may be considered fit by the AMS provided that:
   a. pre-operative refraction was less than +5 or -6 dioptres;
   b. the applicant was at least 21 years old at the time of the operation;
   c. pre-operative astigmatic component was not greater than 3.0 dioptres;
   d. no significant pathology can be demonstrated;
   e. satisfactory stability of refraction has been achieved; (less than 0.75 dioptres variation diurnally);
   f. examination of the eye shows no postoperative complications like haze;
   g. glare sensitivity is within normal standards;
   h. mesopic contrast sensitivity is not impaired;
   i. review is undertaken by an ophthalmologist acceptable to the AMS at the discretion of the AMS.

5. a. Cataract surgery. A fit assessment may be considered by the AMS after 2 months, provided that the visual requirements are met either with contact lenses or with intraocular lenses (monofocal, non-tinted)
   b. Retinal surgery. A fit assessment at revalidation or renewal may be considered by the AMS normally 6 months after successful surgery. A fit assessment may be acceptable to the AMS after Retinal Laser Therapy. The applicant should be re-examined by an ophthalmologist annually.
   c. Glaucoma Surgery. Fit assessment may be considered by the AMS normally 6 months after successful surgery. The applicant should be re-examined by an ophthalmologist semi-annually.
   d. Extra Ocular Muscle Surgery. A fit assessment may be considered by the AMS not less than 6 months after surgery. The applicant shall be examined by an ophthalmologist acceptable to the AMS.

6. The AMS may consider a fit assessment at revalidation or renewal after diagnosis of a keratoconus provided that:
   a. The visual requirements are met with the use of corrective lenses;
   b. Review is undertaken by an ophthalmologist acceptable by the AMS, the frequency is at the discretion of the AMS.

MAR-FCL 3.460 Visual Requirements

a. Distant visual acuity, after correction if necessary, shall be 1.0 or better in each eye separately using Snellen charts (or equivalent) under appropriate illumination and binocular visual acuity shall be 1.0 or better. (See MAR-FCL 3.460.j below)

b. Refractive errors. Refractive error is defined as the deviation from emmetropia measured in dioptres in the most ametropic meridian. Refraction shall be measured by standard methods. Applicants shall be considered fit with respect to refractive errors if they meet the requirements in the paragraphs below.

c. At initial examination, an applicant with a refractive error within the range +5.0/- 6.0 dioptres may be assessed as fit if:
   1. no significant pathology can be demonstrated;
   2. optimal correction has been considered; and
   3. 5 yearly review is undertaken by an ophthalmologist or vision care specialist acceptable to the AMS. (See paragraph 2 of Appendix 13 to Subpart D)

d. At initial examination, an applicant with a refractive error with an astigmatic component, the astigmatism shall not exceed 2.0 dioptres. (See paragraph 3 of Appendix 13 to Subpart D)

e. In initial applicants the difference in refractive error between the two eyes (anisometropia) shall not exceed 2.0 dioptres. (See paragraph 4 of Appendix 13 to Subpart D)

f. The progress of presbyopia must be checked at every revalidation or renewal examination. The applicant must be capable of reading the Parinaud 2 chart, N5 (or equivalent) at 30-50 cm and the Parinaud 6 chart, N14 (or equivalent) at 100 cm distance, if necessary, with the aid of correction. The visual acuity for near and intermediate distance, with or without correction, shall be 6/12 (0.5) or better.

Appendix 13 to Subpart D Visual Requirements

(See MAR-FCL 3.460)

1. Where clinical evidence suggests that Snellen may not be appropriate, Landolt ‘C’ may be used for assessment of visual acuity.

2. At revalidation or renewal, an applicant with refractive errors of up to +5 dioptres or high myopic refractive errors exceeding -6 dioptres may be considered fit by an AMS if:

   a. no significant pathology can be demonstrated;
   b. optimal correction has been considered; and
   c. a 2 yearly review is undertaken by an ophthalmologist or vision care specialist acceptable to the AMS if the applicant is under the age of 40 years. After the 40th birthday, the review shall be undertaken yearly.

3. At revalidation or renewal examinations, an applicant with an astigmatic component exceeding 2 dioptres, may be considered fit by the AMS subject to a satisfactory report from an ophthalmologist acceptable to the AMS.

4. At revalidation or renewal examinations, an applicant with a difference in refractive error between the two eyes (anisometropia) of up to 3.0 dioptres may be considered fit by the AMS.

MAR-FCL 3.460 Visual Requirements

g. An applicant with diplopia shall be assessed as unfit. (See paragraph 5 of Appendix 13 to Subpart D)

h. An applicant with convergence which is not normal shall be assessed as unfit. (See paragraph 6 of Appendix 13 to Subpart D)

i. An applicant with imbalance of the ocular muscles (heterophorias) exceeding (when measured with usual correction, if prescribed):
   2.0 prism dioptres in hyperphoria at 6 metres;
   10.0 prism dioptres in esophoria at 6 metres;
   8.0 prism dioptres in exophoria at 6 metres;
   and
   1.0 prism dioptres in hyperphoria at 33 cm;
   8.0 prism dioptres in esophoria at 33 cm;
   12.0 prism dioptres in exophoria at 33 cm
   shall be assessed as unfit unless the fusional reserves are sufficient to prevent asthenopia and diplopia. (See paragraph 7 of Appendix 13 to Subpart D)

j. An applicant with binocular visual fields which are not normal shall be assessed as unfit. (However, see MAR-FCL 3.460.l.)

k. An applicant shall have a normal stereopsis (better than 60”).

Appendix 13 to Subpart D Visual Requirements

(See MAR-FCL 3.460)

5. Phoria testing will identify significant abnormalities in the ocular muscle balance. TNO testing may be carried out if considered appropriate. However, an abnormal result will not necessarily be disqualifying.

6. Convergence outside the normal range may be considered acceptable provided it does not interfere with near vision (30–50 cm) and intermediate vision (100 cm) with or without correction.

7. Above 12 prism dioptres in exophoria, applicants shall be referred to an ophthalmologist for assessment of fusional reserve.

MAR-FCL 3.460 Visual Requirements

l. An initial applicant with functionally significant defects of binocular vision, as determined by an ophthalmologist with regard to the working environment, shall be assessed as unfit. (See paragraph 8 of Appendix 13 to Subpart D)

m. At the initial examination, an applicant having monocular vision must be assessed unfit. At revalidation or renewal, the applicant may be assessed fit if the ophthalmological examination is satisfactory and the condition does not preclude the applicant from safely exercising the privileges of his licence/certificate of competence. (See paragraph 9 of Appendix 13 to Subpart D)

n. If a visual requirement is met only with the use of correction, the spectacles or contact lenses must provide optimal visual function and be suitable for air traffic control purposes. Correcting lenses, when worn during the exercise of licenced privileges, shall permit the holder of the licence/certificate of competence to meet the visual requirements at all distances. No more than one pair of spectacles shall be used to meet the requirement. (However, see paragraph 10-12 of Appendix 13 to Subpart D)

Appendix 13 to Subpart D Visual Requirements

(See MAR-FCL 3.460)

8. Central vision in one eye below the limits stated may be considered fit for recertification if binocular visual fields are normal and the underlying pathology is acceptable according to ophthalmic assessment by a specialist acceptable to the AMS.

9. Testing at revalidation or renewal under these circumstances shall include functional testing within the appropriate working environment.

10. It is recommended that a spare set of similarly correcting spectacles is readily available when exercising the privileges of the licence/certificate of competence.

11. Where high myopic correction (greater than -6 dioptres) is needed, individuals shall be required to use either contact lenses or spectacles with high-index lenses in order to minimise peripheral field distortion.

12. When contact lenses are used, they shall be monofocal, not coloured and not orthokeratological. Monovision contact lenses shall not be used.

MAR-FCL 3.465 Colour Perception

a. Normal colour perception is required. It is defined as the ability to pass the Ishihara test and the HRR test or to pass an anomaloscope of the Colour Cone Test as a normal trichromat. (See paragraph 1 of Appendix 14 to Subpart D)

b. An applicant who fails the acceptable colour perception tests is to be considered colour unsafe and shall be assessed as unfit. (See paragraph 2 of Appendix 14 to Subpart D)

Appendix 14 to Subpart D Colour Perception

(See MAR-FCL 3.465)

1. The Ishihara test is to be considered passed if consecutive plates are identified correctly as specified in the Ishihara User Manual.

2. Those failing the Ishihara test or HRR test shall be examined by anomaloscopy or Cone Contrast Test.
   a. Anomaloscopy (Oculus HMC or equivalent). This test is considered passed if the colour match is normal trichromatic and the AQ is between 0.7 and 1.4, or by
   b. Cone contrast test (CCT) This test is considered passed if the applicant gets a score of 75 out of 100, or higher.

MAR-FCL 3.470 Otorhinolaryngological System

a. An applicant for or holder of a Class 3 MMC shall not possess any abnormality of the function of the ears, nose, sinuses or throat (including oral cavity, teeth and larynx), or any active pathological condition, congenital or acquired, acute or chronic, or any sequela of surgery and trauma which is likely to interfere with the safe exercise of the privileges of the applicable licence(s)/certificate(s) of competence. ENT specialists used by AMS should have an understanding of the functionality required by air traffic controllers in the exercise of their licenced functions.

b. A comprehensive otorhinolaryngological (ORL) examination is required at the initial examination. (See paragraph 1 of Appendix 15 to Subpart D)

c. A routine otorhinolaryngological (ORL) examination shall form part of all revalidation and renewal examinations. (See paragraph 2 of Appendix 15 to Subpart D)

d. An applicant with any of the following disorders shall be assessed as unfit:
   1. Active pathological process, acute or chronic, of the internal or middle ear;
   2. Unhealed perforation (s) or dysfunction of the tympanic membranes; (See paragraph 3 of Appendix 15 to Subpart D)
   3. Disturbances of vestibular function; (See paragraph 4 of Appendix 15 to Subpart D)
   4. Significant malformation or significant, acute or chronic infection of the oral cavity or upper respiratory tract;
   5. Significant disorder of speech or voice; (See paragraph 5 of Appendix 15 to Subpart D)
   6. Allergic rhinitis, (See paragraph 6 of Appendix 15 to Subpart D), or:
   7. Otosclerosis at initial examination.
   8. Obstructive Sleep Apnea Syndrome (See paragraph 7 of Appendix 15 to Subpart D)

e. Particular attention shall be paid to significant restriction of the nasal air passage on either side, or of any dysfunction of the sinuses. These should not necessarily entail unfitness provided exercise of the licenced function is not impaired.

f. Any speech or voice disorder that reduces intelligibility shall be referred to a speech specialist.

Appendix 15 to Subpart D Otorhinolaryngological System

(See MAR-FCL 3.470)

1. At the initial examination a comprehensive ORL examination shall be carried out by or under the guidance and supervision of a specialist in aviation otorhinolaryngology acceptable to the AMS.

2 At revalidation or renewal examinations abnormal and doubtful cases within the ENT region shall be referred to a specialist in aviation otorhinolaryngology acceptable to the AMS.

3. Dry perforation (s) of non-infectious origin and which does not interfere with the normal function of the ear may be considered acceptable.

4. The presence of spontaneous or positional nystagmus shall entail complete vestibular investigation by an ENT specialist, acceptable to the AMS. In these cases, no significant abnormal caloric or rotational vestibular responses are acceptable. At revalidation or renewal, abnormal vestibular responses shall be assessed by the AMS within their clinical context.

5. Where full assessment and a functional check is needed, due regard should be paid to the operating environment in which the licenced functions are undertaken.

6. A fit assessment may be considered by the AMS if the applicant is without symptoms, with or without medication.

7. At initial OSAS is disqualifying. At renewal and revalidation untreated OSAS is disqualifying. A fit assessment may be considered by AMS when OSAS is treated and has a AHI score of < 15 without complaints, yearly follow up by ENT stays necessary (SIC limitation).

MAR-FCL 3.475 Hearing Requirements

a. Hearing shall be tested at all examinations. The applicant shall understand correctly conversational speech when tested with each ear at a distance of two metres from and with his back turned towards the FS.

b. Hearing shall be tested with pure tone audiometry at the initial examination and at all subsequent revalidation or renewal examinations. (See Paragraph 1 of Appendix 16 to Subpart D)

c. At the initial examination for an MMC there shall be no hearing loss in either ear, when tested separately, of more than 20 dB (HL) at any of the frequencies 500, 1000 and 2000 Hz, or of more than 30 dB (HL) at 3000 Hz. An applicant whose hearing loss is within 5 dB (HL) of these limits in two or more of the frequencies tested, shall undergo pure tone audiometry at least annually. (See paragraph 2 and 3 of Appendix 16 to Subpart D)

d. At revalidation or renewal examinations, there shall be no hearing loss in either ear, when tested separately, of more than 35 dB (HL) at any of the frequencies 500, 1000, and 2000 Hz, or of more than 50 dB (HL) at 3000 Hz. An applicant whose hearing loss is within 5 dB (HL) of these limits in two or more of the frequencies tested, shall undergo pure tone audiometry at least annually. (See paragraph 2 and 4 of Appendix 16 to Subpart D)

f. At initial examination, the use of a hearing aid is disqualifying. For a fit assessment at revalidation or renewal examinations, a controller needing hearing aids for both ears shall be assessed as unfit. However, the use of hearing aids or other appropriate prosthetic aids (such as a special headset with individual earpiece volume controls) may be acceptable for revalidation or renewal when it can improve a controller's hearing to achieve a normal standard. (See paragraph 4 of Appendix 16 to Subpart D)

Appendix 16 to Subpart D Hearing Requirements

(See MAR-FCL 3.475)

1. The pure tone audiogram shall cover at least the frequencies from 250 – 8000 Hz. Frequency thresholds shall be determined as follows:
   500 Hz
   1000 Hz
   2000 Hz
   3000 Hz
   Testing at frequencies at or above 4000 Hz will aid the early diagnosis of Noise Induced Hearing loss (NIH).

2. In cases of hearing loss, if at the next annual test there is no indication of further deterioration, the normal frequency of medical examination may be resumed.

3. Applicants for initial examination who do not meet the hearing requirements shall be referred to an ENT specialist for further examination. They may be assessed as fit by the AMS if ENT evaluation shows no signs of disease and a speech discrimination test demonstrates a satisfactory hearing ability.

4. Applicants for revalidation or renewal examinations who do not meet the hearing requirements may be assessed as fit by the AMS if a functional hearing test (in a noise field corresponding to normal working conditions) demonstrates a satisfactory hearing ability.

5. Full functional and environmental assessments should be carried out with the chosen prosthetic equipment in use to ensure that the individual is able to perform the functions of his licence/certificate of competence and that the equipment is not adversely affected by interference from headsets or other factors. As failure of the equipment is possible, a spare set of the equipment and accessories, such as batteries, shall be available.

MAR-FCL 3.480 Psychological Requirements

a. An applicant for or holder of a Class 3 MMC shall have no established psychological deficiencies which are likely to interfere with the safe exercise of the privileges of the applicable licence(s)/certificate(s) of competence. (See paragraph 1 to 4 of Appendix 17 to Subpart D)

b. When a psychological evaluation is indicated, it shall be carried out by an or a psychologist with extensive knowledge of the ATC environment acceptable to the AMS. The evaluation shall be directed by a neurologist or psychiatrist, as appropriate. (See paragraph 2 to Appendix 17 to Subpart D)

c. An applicant who exhibits inability to cope with stress or stress-related problems to an extent where the symptoms are likely to interfere with an individual's ability to exercise safely the privileges of the licence/certificate of competence shall be assessed as unfit. (However, see paragraph 2 and 3 of Appendix 17 to Subpart D)

Appendix 17 to Subpart D Psychological Requirements

(See MAR-FCL 3.480)

1. Within psychiatric management, psychological assessment may have a pivotal role in enabling the psychiatrist to make a holistic assessment.

2. If stress-related problems, which are likely to interfere with safe exercise of the privileges of the individual's licence/certificate of competence, are reported or indicated, a psychological evaluation by an appropriately qualified specialist acceptable to the AMS may be required. (See MAR-FCL 3.485 c.)

3. Coping with stress includes the following:
   a. coping with high workload;
   b. coping with boredom;
   c. 'unwinding' after work;
   d. controlling anxiety and anger;
   e. managing critical incidents.

   If there are indications of a lack of skills or of incidents relating to any of the above, the applicant should be referred to an appropriately qualified specialist acceptable to the AMS. (See paragraph 3 and 4 of Appendix 17 to Subpart D)

4. A psychological evaluation may be required by the AMS as part of, or complementary to, a specialist psychiatric or neurological examination when the FS or the AMS receives verifiable information from an identifiable source which evokes doubts concerning the mental fitness or personality of a particular individual. Sources for this information can be accidents or incidents, problems in training or proficiency checks, delinquency or knowledge relevant to the safe exercise of the privileges of the applicable licences.

5. The psychological evaluation should be broad-based and may include medical history, life-event history and aptitude testing, in addition to personality tests and psychological interview.

MAR-FCL 3.485 Dermatological Requirements

a. An applicant for or holder of a Class 3 MMC shall have no established dermatological pathology likely to interfere with the safe exercise of the privileges of the applicable licence(s)/certificate(s) of competence shall be assessed as unfit. (See paragraph 1 and 2 of Appendix 18 to Subpart D)

b. Particular attention should be paid to chronic and residual skin diseases: (See paragraph 1 and 2 of Appendix 18 to Subpart D) Referral to the AMS shall be made if doubt exists about any condition.

c. In case of dermatological aspects of a generalised condition, an assessment of treatment and any underlying condition is required before fit assessment by the AMS.

d. Malignant conditions of the skin need referral to dermatologist (See paragraph 3 of Appendix 18 to Subpart D) The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding assessment and should be consulted together with the Chapter specific to this system.

Appendix 18 to Subparts D Dermatological requirements

(See MAR–FCL 3.485)

1. Any skin condition causing pain, discomfort, irritation or itching can distract flight crew from their tasks and thus affect flight safety (e.g. eczema of any cause, psoriasis, bacterial infections, candidiasis, drug induces eruptions, urticarial).

2. Any skin treatment, radiant or pharmacological, may have systemic effects which must be considered before fit assessment.

3. Malignant or Pre-malignant Conditions of the Skin
   a. Malignant melanoma, squamous cell epithelioma, Bowen's disease and Paget's disease are disqualifying. A fit assessment may be considered by the AMS if, when necessary, lesions are totally excised and there is adequate follow-up.
   b. In case of basal cell epithelioma, rodent ulcer, keratoacanthoma or actinic keratoses a fit assessment may be considered after treatment and/or excision in order to maintain certification.

MAR-FCL 3.490 Oncology

a. An applicant for or holder of a Class 3 MMC shall have no established primary or secondary malignant disease likely to interfere with the safe exercise of the privileges of the applicable licence(s)/certificate(s) of competence.

b. Any malignant disease entails unfitness. At initial, revalidation or renewal a fit assessment may be considered by the AMS after successful treatment. (See paragraph 1 of Appendix 19 to Subpart D)

c. In the assessment of malignant conditions, the Chapter specific to the relevant system should always be consulted in combination with this Chapter.

Appendix 19 to Subpart D Oncology

(See MAR-FCL 3.490)

1. A fit assessment may be considered by the AMS if:
   a. there is no evidence of residual malignant disease after treatment;
   b. time appropriate to the type of tumour has elapsed since the end of treatment;
   c. the risk of incapacitation from a recurrence or metastasis is within limits acceptable to the AMS;
   d. there is no evidence of short- or long-term sequelae from treatment. Special attention shall be paid to applicants who have received anthracycline chemotherapy;
   e. arrangements for follow-up are acceptable to the AMS.

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SUBPART E – ORGANISATIONAL REQUIREMENTS

MAR-FCL 3.500 MAA-NLD

The MAA-NLD exercises oversight over on organizations subject to a certification obligation which have their principal place of business located in the Netherlands.

MAR-FCL 3.505 Application for an organization certificate

a. The application for an organization certificate or an amendment to an existing certificate shall be made in a form and manner established by the MAA-NLD.

b. Applicants for an initial certificate shall provide the MAA-NLD with documentation demonstrating how they will comply with the MAR-FCL3 requirements. Such documentation shall include a procedure describing how changes not requiring prior approval will be managed and notified to the MAA-NLD.

MAR-FCL 3.510 Means of compliance

(See AMC to MAR-FCL 3.510)

a. Alternative means of compliance to the AMC adopted by the MAA-NLD may be used by an organization to establish compliance with MAR-FCL3 requirements.

b. When an organization wishes to use an alternative means of compliance, it shall, prior to implementing it, provide the MAA-NLD with a full description of the alternative means of compliance. The description shall include any revisions to manuals or procedures that may be relevant, as well as an assessment demonstrating that MAR-FCL3 requirements are met.

c. The organization may implement these alternative means of compliance subject to prior approval by the MAA-NLD.

MAR-FCL 3.515 Terms of approval and privileges of an organization

(See AMC to MAR-FCL 3.515)

A certified organization shall comply with the scope and privileges defined in the terms of approval attached to the organization's certificate.

MAR-FCL 3.520 Changes to organizations

(See AMC to MAR-FCL 3.520)
(See GM to MAR-FCL 3.520)

a. Any change affecting:
   1. The scope of the certificate or the terms of approval of an organization; or
   2. Any of the elements of the organization's management system as required in MAR-FCL 3.550, shall require prior approval by the MAA-NLD.

   For any changes requiring prior approval in accordance with MAR-FCL3, the organization shall apply for and obtain an approval issued by the MAA-NLD. The application shall be submitted before any such change takes place, in order to enable the MAA-NLD to determine continued

compliance with MAR-FCL3 and to amend, if necessary, the organization certificate and related terms of approval attached to it.

The organization shall provide the MAA-NLD with any relevant documentation.

The organization shall operate under the conditions prescribed by the MAA-NLD during such changes, as applicable.

b. All changes not requiring prior approval shall be managed and notified to the MAA-NLD as defined in the procedure approved by the MAA-NLD.

MAR-FCL 3.525 Continued validity

a. The organization's certificate shall remain valid subject to:
   1. The organization remaining in compliance with the relevant requirements of MAR-FCL3, taking into account the provisions related to the handling of findings;
   2. The MAA-NLD being granted access to the organization to determine continued compliance with the relevant requirements of MAR-FCL3; and
   3. The certificate not being surrendered or revoked.
b. Upon revocation or surrender the certificate shall be returned to the MAA-NLD without delay.

MAR-FCL 3.530 Access

For the purpose of determining compliance with the relevant requirements of MAR-FCL3, the organization shall grant access to any facility, aircraft, document, records, data, procedures or any other material relevant to its activity subject to certification, whether it is contracted or not, to any person authorized by the MAA-NLD defined.

MAR-FCL 3.535 Findings
(See AMC to MAR-FCL 3.535)
(See GM to MAR-FCL 3.535)

After receipt of notification of findings, the organization shall:
a. Identify the root cause of the non-compliance;
b. Define a corrective action plan; and
c. Demonstrate corrective action implementation to the satisfaction of the MAA-NLD within a defined period:
   - Level 1: Immediate;
   - Level 2: not to exceed 3 months;
   - Level 3: not to exceed 1 year.

MAR-FCL 3.540 Immediate reaction to a safety problem

The organization shall implement:
a. Any safety measures issued by the MAA-NLD; and
b. Any relevant mandatory safety information issued by the MAA-NLD, including safety directives.

MAR-FCL 3.545 Occurrence reporting

a. The organization shall report to the MAA-NLD, and to any other organization required by the State of the operator to be informed, any accident, serious incident and occurrence as defined in SMLE-1 (SMAR-1)

b. The reports referred in paragraphs (a)shall be made in a form and manner acceptable to the MAA-NLD and contain all pertinent information about the condition known to the organization.

c. Reports shall be made as soon as practicable, but in any case, within 72 hours of the organization identifying the condition to which the report relates, unless exceptional circumstances prevent this.

d. Where relevant, the organization shall produce a follow-up report to provide details of actions it intends to take to prevent similar occurrences in the future, as soon as these actions have been identified.

MAR-FCL 3.550 Management system
(See AMC to MAR-FCL 3.550)
(See GM to MAR-FCL 3.550)

a. The organization shall establish, implement and maintain a management system that includes:
   1. Clearly defined lines of responsibility and accountability throughout the organization, including a direct safety accountability of the accountable manager;
   2. A description of the overall philosophies and principles of the organization with regard to safety, referred to as the safety policy;
   3. The identification of aviation safety hazards entailed by the activities of the organization, their evaluation and the management of associated risks, including taking actions to mitigate the risk and verify their effectiveness;
   4. Maintaining personnel trained and competent to perform their tasks;
   5. Documentation of all management system key processes, including a process for making personnel aware of their responsibilities and the procedure for amending this documentation;
   6. A function to monitor compliance of the organization with the relevant requirements. Compliance monitoring shall include a feedback system of findings to the accountable manager to ensure effective implementation of corrective actions as necessary; and
   7. Any additional requirements that are prescribed in the relevant subparts of this Part or other applicable Parts.

b. The management system shall correspond to the size of the organization and the nature and complexity of its activities, taking into account the hazards and associated risks inherent in these activities.

MAR-FCL3.605 Scope

This Subpart establishes the additional requirements to be met by an organization to qualify for the issue or continuation of an approval as an aero-medical centre (AeMC)

MAR-FCL3.615 Application
(See AMC to MAR-FCL 3.615)

Applicants for an AeMC certificate shall in addition to the documentation for the approval of an organization required provide details of clinical attachments to or liaison with designated hospitals or medical institutes for the purpose of specialist medical examinations.

MAR-FCL3.635 Continued validity
(See AMC to MAR-FCL 3.635)

The AeMC certificate shall be issued for an unlimited duration. It shall remain valid subject to the holder and the aero-medical examiners of the organization complying with MAR-FCL3.

MAR-FCL3.700 Management system
(See GM to MAR-FCL 3.700)

The AeMC shall establish and maintain a management system that includes the items addressed in MAR-FCL 3.550 and, in addition, processes to ensure medical confidentiality at all times.

MAR-FCL3.715 Facility requirements
(See AMC to MAR-FCL 3.715)

The AeMC shall be equipped with medico-technical facilities adequate to perform aero-medical examinations necessary for the exercise of the privileges included in the scope of the approval.

MAR-FCL3.720 Record-keeping

In addition to the records required in MAR-FCL3.550, the AeMC shall:

a. Maintain records with details of medical examinations and assessments performed for the issue, revalidation or renewal of medical certificates and their results, for a minimum period of 10 years after the last examination date; and
b. Keep all medical records in a way that ensures that medical confidentiality is respected at all times.

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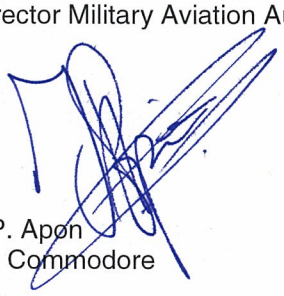
FINAL CLAUSES

This requirement is known as: MAR-FCL 3 and is published on the intranet site of the Ministry of Defence.

Hoofddorp, 19 December, 2018

Director Military Aviation Authority – The Netherlands



J.P. Apon
Air Commodore