European Aviation Safety Agency

Acceptable Means of Compliance (AMC)

and

Guidance Material (GM)

to Part ATCO.OR

Requirements for air traffic controller training organisations and aero-medical centres

Issue 1

13 March 2015[1]

[1] For the date of entry into force of this issue, kindly refer to Decision 2015/010/R in the **Official Publication** of the Agency.

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GM1 ATCO.OR.B.001(c)(2) Application for a training organisation certificate

The requirement to add the list of ATC units is not relevant in the case of training organisations which provide initial training only.

AMC1 ATCO.OR.B.005 Means of compliance

DEMONSTRATION OF COMPLIANCE

In order to demonstrate that the Implementing Rules are complied with, a safety (risk) assessment should be completed and documented. The result of this safety (risk) assessment should demonstrate that an equivalent level of safety to that established by the Acceptable Means of Compliance (AMC) adopted by the Agency is reached.

AMC1 ATCO.OR.B.010(a) Terms of approval and privileges of a training organisation certificate

The management system documentation should contain the privileges and detailed scope of activities including the contracted ones for which the training organisation is certified, as relevant to this Regulation.

GM1 ATCO.OR.B.010(b) Terms of approval and privileges of a training organisation certificate

PROVIDING ON-THE-JOB TRAINING VIA AGREEMENT WITH THE ATC PROVIDER

The specific agreement should detail the issues of liability and insurance for the provision of air traffic control service during on-the-job training and consider the relevant provisions of ATCO.OR.C.005 in order to ensure conformity of the contracted or purchased activity or part of activity to the applicable requirements as well as those of ATCO.OR.B.040 on occurrence reporting and ATCO.OR.C.025 on funding and insurances.

AMC1 ATCO.OR.B.015 Changes to the training organisation

GENERAL

(a) Training organisations should inform the competent authority of any changes to personnel specified in Annex III (Part ATCO.OR) that may affect the certificate or the training approval attached to it.

(b) Training organisations should send to the competent authority each management system documentation amendment. Where the amendment requires the competent authority's approval, the training organisation should receive it in writing.

GM1 ATCO.OR.B.015 Changes to the training organisation

GENERAL

(a) Examples of changes that may affect the certificate or the terms of approval of the training organisation or the training organisation's management system are listed below:

(1) the name of the training organisation;

(2) change of legal entity;

(3) the training organisation's principal place of operation;

(4) the training organisation's type(s) of training;

(5) additional locations of the training organisation;

(6) the accountable manager;

(7) any of the persons referred to in Part ATCO.OR;

(8) the training organisation's documentation as required by Subpart ATCO.OR.B on safety policy and procedures;

(9) the facilities.

(b) Prior approval by the competent authority is required for any changes to the training organisation's procedure describing how changes not requiring prior approval will be managed and notified to the competent authority.

GM2 ATCO.OR.B.015 Changes to the training organisation

CHANGE OF NAME

A change of name requires the training organisation to submit a new application as a matter of urgency.

Where this is the only change to report, the new application can be accompanied by a copy of the documentation previously submitted to the competent authority under the previous name, as a means of demonstrating how the training organisation complies with the applicable requirements.

GM1 ATCO.OR.B.030(a);(b) Findings

CORRECTIVE ACTION PLAN AND ROOT CAUSE

(a) Corrective action is the action to eliminate the root cause of a non-compliance in order to prevent its recurrence.

(b) Determination of the root cause is crucial for defining effective corrective actions.

GM2 ATCO.OR.B.030(c) Findings

COMPETENT AUTHORITY

When reference is made to the competent authority, this means either the competent authority that has issued the certificate or the competent authority ensuring oversight of activities, if they are different, based on the agreement concluded between the authorities.

GM1 ATCO.OR.B.040 Occurrence reporting

The training organisation's report should focus on occurrences taking place during on-the-job training with regard to the training aspects involved.

The report may be submitted together with or as an integral part of the report prepared by the air navigation service provider.

SUBPART C — MANAGEMENT OF AIR TRAFFIC CONTROLLER TRAINING ORGANISATIONS

GM1 ATCO.OR.C.001 Management system of training organisations

The requirements for the management system of training organisations may be satisfied if the training organisation's scope and terms of approval are included in the air navigation service provider's certificate, and the air navigation service provider's management system/safety management system (SMS) specifically covers the requirements of this Regulation.

AMC1 ATCO.OR.C.001(b) Management system of training organisations

SAFETY POLICY

The safety policy should:

(a) be endorsed by the accountable manager;

(b) clearly identify safety as the highest organisational priority over commercial, operational, environmental or social pressures;

(c) include a commitment to:

  (1) improve towards the highest safety standards;

  (2) comply with all applicable legal requirements, meet all applicable standards and consider best practices;

  (3) provide appropriate resources; and

  (4) enforce safety as the primary responsibility of all managers and staff;

(d) be communicated, with visible endorsement, throughout the organisation;

(e) include safety reporting and just culture principles;

(f) enhance and embed safety culture and safety awareness; and

(g) be periodically reviewed to ensure it remains relevant and appropriate to the training organisation.

AMC1 ATCO.OR.C.001(c) Management system of training organisations

IDENTIFICATION OF AVIATION SAFETY HAZARDS

For training organisations not providing on-the-job training, the hazard identification process may be limited to a demonstration that there are no hazards directly identified. However, the training should be designed so as to ensure future safe operations.

AMC1 ATCO.OR.C.001(d) Management system of training organisations

PERSONNEL

A training organisation should demonstrate that:

(a) a list of activities with relevant needed competence has been established;

(b) their personnel have the relevant competence needed to fulfil the activities they are required to perform;

(c) their personnel maintain a level of competence through training as appropriate;

(d) their theoretical and practical instructors are qualified in accordance with Part ATCO, Subpart C of this Regulation;

(e) their practical instructors either hold an OJTI endorsement or an STDI endorsement;

(f) their assessors hold an assessor endorsement; and

(g) their synthetic training device instructors and assessors demonstrate knowledge of and receive refresher training in current operational practices.

AMC1 ATCO.OR.C.001(e) Management system of training organisations
PROCESSES

Training organisations should demonstrate that the management system:

(a) policies, processes and procedures are monitored to ensure they are current and subject to periodic review and amendment, when necessary, to maintain their continued accuracy and suitability;

(b) allows for the impromptu recognition and initiation of improvements to policies, processes and procedures between periodic reviews;

(c) controls, records and tracks changes to all of the management system policy, process and procedure documents;

(d) includes a master record index that lists all the policies, processes and procedures; and

(e) includes as a minimum the following:

(1) master record index;

(2) training provider certificate;

(3) management structure;

(4) staff role profiles including accountabilities and responsibilities;

(5) training manuals, plans and courses;

(6) evidence of regulatory compliance;

(7) change control process;

(8) safety management manual;

(9) course design documents;

(10) instructor/assessor qualification and competence records.

AMC1 ATCO.OR.C.001(f) Management system of training organisations
COMPLIANCE MONITORING

(a) The implementation and use of a compliance monitoring function should enable the training organisation to monitor compliance with the relevant requirements of this Regulation.

(b) Training organisations should specify the basic structure of the compliance monitoring function applicable to the activities conducted.

(c) The compliance monitoring function should be structured according to the activities of the training organisation to be monitored.

GM1 ATCO.OR.C.001(f) Management system of training organisations

EXAMPLE OF COMPLIANCE MONITORING SYSTEM

(a) Training organisations may monitor compliance with the procedures they have designed to ensure safe activities. In doing so, they may, as a minimum, and, where appropriate, monitor:

(1) the organisational structure;

(2) the plans and objectives;

(3) the privileges of the organisation;

(4) the manuals, logs and records;

(5) the training standards;

(6) the management system.

(b) Organisational set-up

(1) To ensure that the training organisation continues to meet the requirements of this Regulation, the accountable manager may designate a person responsible for the compliance monitoring function whose role is to verify, by monitoring the activities of the organisation, that the standards required by this Regulation and any additional requirements as established by the organisation are met under the supervision of the relevant head of the functional area. For small training organisations, these identified functions can be fulfilled by the same person.

(2) The person designated for the compliance monitoring function should be responsible for ensuring that the compliance monitoring programme is properly implemented, maintained and continually reviewed and improved.

(3) The designated person responsible for the compliance monitoring function should:

(i) have direct access to the accountable manager; and

(ii) have access to all parts of the training organisation and, as necessary, to any contracted organisation.

(c) Compliance monitoring documentation

(1) Relevant documentation could include the relevant part(s) of the training organisation management system documentation.

(2) In addition, relevant documentation could also include the following:

(i) terminology;

(ii) specified activity standards;

(iii) description of the organisation;

(iv) allocation of duties and responsibilities;

(v) procedures to ensure regulatory compliance;

(vi) compliance monitoring programme, reflecting:

(A) schedule of the monitoring programme;

(B) audit procedures;

(C) reporting procedures;

(D) follow-up and corrective action procedures; and

(E) recording system;

(vii) training elements referred to in paragraph 4(b); and

(viii) document control.

(d) Training

(1) Correct and thorough training is essential to optimise compliance in every training organisation. In order to achieve significant outcomes of such training, the training organisation needs to ensure that all personnel understand the objectives laid down in the organisation's manual.

(2) Those responsible for managing the compliance monitoring function should receive training in this task. Such training could cover the requirements of compliance monitoring, manuals and procedures related to the task, audit techniques, reporting and recording.

(3) Time needs to be provided to train all personnel involved in compliance management and for briefing the rest of the personnel.

(4) The allocation of time and resources needs to be governed by the activities covered by the training organisation.

AMC2 ATCO.OR.C.001(f) Management system of training organisations
COMPLIANCE MONITORING

The person designated for the compliance monitoring function should be responsible for the review and continuous improvement of the established management system's policies, processes and procedures. The following tools are essential to the ongoing continuous improvement process:

(a) organisational risk profile;

(b) risk management plan;

(c) coherence matrix;

(d) corrective and preventive action reports; and

(e) inspection and audit reports.

GM2 ATCO.OR.C.001(f) Management system of training organisations
COMPLIANCE MONITORING

(a) These tools and processes related to the compliance monitoring function are interrelated and help define the continuous improvement efforts of the organisation. For example, any corrective or preventive action report could identify a deficiency or an opportunity for improvement. The person responsible for the compliance monitoring function would then be required to ensure the identified issue was addressed and the corrective or preventive action effectively implemented. The same would be true if the discovery of an issue was identified during an inspection or audit.

(b) The effective implementation of change and the subsequent validation that the change did result in the desired outcome is critical to the continuous improvement process. Simply introducing a well-meaning suggestion for improvement into the organisation without carefully managing that change could have undesirable consequences. It is, therefore, the responsibility of the person in charge of the compliance monitoring function to introduce, monitor and validate improvement efforts.

(c) A simple but effective process to use in managing continuous improvement is known as the plan-do-check-act, or PDCA, approach:

(1) plan — map out the implementation of the recommended change, identifying at least:

(i) those people who will be affected by the change;

(ii) the required measures necessary to mitigate risk; and

(iii) the desired outcome and its intended consequences.

(2) do — execute the implementation plan once all affected groups have accepted the proposal and understand their role in ensuring its success;

(3) check — apply sufficient quality control 'stage' checks throughout the implementation phase to ensure any unintended deviations in the execution are identified and addressed without delay; and

(4) act — analyse the results and take appropriate action as necessary.

AMC1 ATCO.OR.C.001(g) Management system of training organisations

SIZE, NATURE AND COMPLEXITY OF THE ACTIVITY

(a) A training organisation should be considered as complex when it has a workforce of more than 20 full-time equivalents (FTEs) involved in the activity subject to Regulation (EC) No 216/2008[2] and its Implementing Rules.

(b) A training organisation with up to 20 FTEs involved in the activity subject to Regulation (EC) No 216/2008 and its Implementing Rules may also be considered complex based on an assessment of the following factors:

(1) the extent and scope of contracted activities subject to the certificate, in terms of complexity; and

(2) the different types of training provided, in terms of risk criteria.

AMC1 ATCO.OR.C.005 Contracted activities

(a) Training organisations may decide to contract certain parts of their activities to external organisations.

(b) A written agreement should exist between the training organisation and the contracted organisation clearly defining the contracted activities and the applicable requirements.

(c) The contracted safety-related activities relevant to the agreement should be included in the training organisation's compliance monitoring programme.

(d) Training organisations should ensure that the contracted organisation has the necessary authorisation or approval when required, and commands the resources and competence to undertake the task.

[2] Regulation (EC) No 216/2008 of the European Parliament and of the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC (OJ L 79, 19.3.2008, p. 1).

GM1 ATCO.OR.C.005 Contracted activities

RESPONSIBILITY WHEN CONTRACTING ACTIVITIES

(a) Regardless of the approval status of the contracted organisation, the contracting organisation is responsible to ensure that all contracted activities are subject to hazard identification and risk management as required by ATCO.OR.C.001(c) and to compliance monitoring as required by ATCO.OR.C.001(f).

(b) When the contracted organisation is itself certified to carry out the contracted activities, the organisation's compliance monitoring should at least check that the approval effectively covers the contracted activities and that it is still valid.

GM1 ATCO.OR.C.010(b);(c) Personnel requirements

(a) Training organisations may nominate the person responsible for training and a person or persons subordinate to him or her as chief training instructor(s)/unit responsible training officer(s).

(b) Usually, training organisations nominate only one person responsible for training.

(c) Prerequisites, typical function and responsibilities of the person responsible for training may be:

(1) to have extensive experience in instructing for all types of ATC training and possess sound managerial capability;

(2) to have overall responsibility for ensuring satisfactory integration of all training provided and for supervising the progress of the persons undertaking training;

(3) to be responsible for coordinating and delegating the contact to the competent authority in training-related issues; and

(4) to be ultimately responsible to the accountable manager.

(d) Prerequisites, typical functions and responsibilities of the chief training instructor(s)/unit responsible training officer(s) may be:

(1) to have extensive experience in instructing for all types of ATC training and possess sound managerial capability;

(2) to have responsibility for ensuring satisfactory training is provided and for supervising the progress of the persons undertaking training in the areas that have been delegated by the person responsible for training; and

(3) to report to the person responsible for training.

AMC1 ATCO.OR.C.015(a) Facilities and equipment

(a) General areas

A training organisation should have access to facilities appropriate to the size and scope of the intended operations provided in an environment conducive to learning.

(b) Training areas

For training organisations providing theoretical training, the facilities should also include sufficient suitably equipped classroom areas.

GM1 ATCO.OR.C.015(a) Facilities and equipment

(a) General areas

These facilities should include general areas, which consist of sufficient:

(1) office space for managerial and administrative as well as training staff;

(2) rooms for study and testing;

(3) library facilities; and

(4) storage areas, including secure areas for training and personnel records.

(b) Training areas

For training organisations providing practical training, the facilities should also include sufficient:

(1) rooms for briefing and debriefing; and

(2) suitably equipped rooms for practical training.

AMC1 ATCO.OR.C.015(b) Facilities and equipment

SPECIFICATIONS FOR SYNTHETIC TRAINING DEVICES

(a) Synthetic training devices classifications

Synthetic training devices used for training should be classified according to one of the following classifications:

(1) simulator (SIM);

(2) part-task trainer (PTT).

(b) Synthetic training device (STD) criteria

If an STD is used for training, it should be approved by the competent authority as part of the course approval process for any training plan. Training organisations should demonstrate how the STD will provide adequate support for the intended training, in particular, how the STD will meet the stated objectives of the practical training exercises and enable the performance objectives to be assessed to the level determined in the training programme.

This demonstration and the related documentation should include the following relevant criteria:

(1) the general environment, which should provide an environment in which STD exercises may be run without undue interference from unrelated activities;

(2) the STD layout;

(3) the equipment provided;

(4) the display presentation, functionality, and updating of operational information;

(5) data displays, including strip displays, where appropriate;

(6) coordination facilities;

(7) aircraft performance characteristics, including the availability of manoeuvres, e.g. holding or instrumental landing system (ILS) operation, required for a particular simulation;

(8) the availability of real-time changes during an exercise;

(9) the processes by which the training organisation can be assured that staff associated with the training conducted with the use of an STD are competent;

(10) the degree of realism of any voice recognition system associated with the STD; and

(11) where a simulator is an integral part of an operational ATC system, the processes by which the training organisation is assured that interference between the simulated and operational environments is prevented.

The extent to which the STD achieves the above criteria will be used to determine the adequacy of the STD for the proposed use. As a general principle, the greater the degree of replication of the operational position being represented, the greater the use will be possible for any particular training.

(c) STD used for pre-on-the-job training

When an STD is used for pre-on-the-job training and the training time is counted as operational training, the STD classification should be a full-size replica of a working position, including all equipment, and computer programmes necessary to represent the full tasks associated with that position, including realistic wind at all levels to facilitate SRA. In the case of a working position at a tower unit, it includes an out-of-the-tower view.

AMC1 ATCO.OR.C.020(a);(b) Record keeping

Training organisations should maintain the following records:

(a) Records of persons undertaking training:

(1) personal information;

(2) details of training received including the starting date of the training, as well as the results of the examinations and assessments;

(3) detailed and regular progress report forms;

(4) certificate of completion of training courses.

(b) Records of instructors and assessors:

(1) personal information;

(2) qualification records;

(3) records of refresher training for instructors and assessors;

(4) assessment reports;

(5) instructional and/or assessment time records.

Training organisations should submit training records and reports to the competent authority as required.

AMC1 ATCO.OR.C.025 Funding and insurances

SUFFICIENT FUNDING

To demonstrate compliance with the requirement on the availability of sufficient funding, training organisations may be required to present an economic study identifying the minimum amount necessary to ensure that the training is conducted in accordance with the applicable requirements.

AMC2 ATCO.OR.C.025 Funding and insurances

SUFFICIENT INSURANCE COVER

To demonstrate compliance with the requirement on sufficient insurance cover, training organisations may be required to provide a deposit of an insurance certificate or other evidence of valid insurance.

The insurance cover should be established by taking into account the nature of the training provided, the frequency and the fees applicable to the training courses.

European Aviation Safety Agency

Acceptable Means of Compliance (AMC)

and

Guidance Material (GM)

to Part ATCO.MED

Medical requirements for air traffic controllers

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AMC/GM TO PART ATCO.MED
MEDICAL REQUIREMENTS FOR AIR TRAFFIC CONTROLLERS

SUBPART A — GENERAL REQUIREMENTS

SECTION 1
GENERAL

AMC1 ATCO.MED.A.015 Medical confidentiality

To ensure medical confidentiality, all medical reports and records should be securely held with accessibility restricted to personnel authorised by the medical assessor.

GM1 ATCO.MED.A.020 Decrease in medical fitness

MEDICATION — GUIDANCE FOR AIR TRAFFIC CONTROLLERS

(a) Any medication can cause side effects, some of which may impair the safe exercise of the privileges of the licence. Equally, symptoms of colds, sore throats, diarrhoea and other abdominal upsets may cause little or no problem whilst not exercising the privileges of the licence, but may distract the air traffic controller and degrade their performance whilst on duty. Therefore, one issue with medication and the safe exercise of the privileges of the licence is the underlying condition and, in addition, the symptoms may be compounded by the side effects of the medication prescribed or bought over the counter for treatment. This guidance material provides some help to air traffic controllers in deciding whether expert aero-medical advice by an AME, AeMC or Medical Assessor is needed.

(b) Before taking any medication and exercising the privileges of the licence, the following three basic questions should be satisfactorily answered:

(1) Do I feel fit to control?

(2) Do I really need to take medication at all?

(3) Have I given this particular medication a personal trial whilst not exercising the privileges of my licence to ensure that it will not have any adverse effects on my ability to exercise the privileges of my licence?

(c) Confirming the absence of adverse effects may well need expert aero-medical advice.

(d) The following are some widely used medicines with a description of their compatibility with the safe exercise of the privileges of the licence:

(1) Antibiotics. Antibiotics may have short-term or delayed side effects which can affect the performance of the air traffic controller. More significantly, however, their use usually indicates that an infection is present and, thus, the effects of this infection may mean that an air traffic controller is not fit to control and should obtain expert aero-medical advice.

(2) Anti-malaria drugs. The decision on the need for anti-malaria drugs depends on the geographical areas to be visited, and the risk that the air traffic controller has of being exposed to mosquitoes and of developing malaria. An expert medical opinion should be obtained to establish whether anti-malaria drugs are needed and what kind of drugs should be used. Most of the anti-malaria drugs (atovaquone plus proguanil, chloroquine, doxycycline) are compatible with the safe exercise of the privileges of the licence.

However, adverse effects associated with mefloquine include insomnia, strange dreams, mood changes, nausea, diarrhoea and headaches. In addition, mefloquine may cause spatial disorientation and lack of fine coordination and is, therefore, not compatible with the safe exercise of the privileges of the licence.

(3) Antihistamines. Antihistamines can cause drowsiness. They are widely used in 'cold cures' and in treatment of hay fever, asthma and allergic rashes. They may be in tablet form or a constituent of nose drops or sprays. In many cases, the condition itself may preclude the safe exercise of the privileges of the licence, so that, if treatment is necessary, expert aero-medical advice should be sought so that so-called non-sedative antihistamines, which do not degrade human performance, can be prescribed.

(4) Cough medicines. Antitussives often contain codeine, dextromethorfan or pseudo-ephedrine which are not compatible with the safe exercise of the privileges of the licence. However, mucolytic agents (e.g. carbocysteine) are well tolerated and are compatible with the safe exercise of the privileges of the licence.

(5) Decongestants. Nasal decongestants with no effect on alertness may be compatible with the safe exercise of the privileges of the licence.

(6) Nasal corticosteroids are commonly used to treat hay fever, and are compatible with the safe exercise of the privileges of the licence.

(7) (i) Common pain killers and antifebrile drugs. Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) and paracetamol, commonly used to treat pain, fever or headaches, may be compatible with the safe exercise of the privileges of the licence. However, the air traffic controller should give affirmative answers to the three basic questions in paragraph (b) before using the medication and exercising the privileges of the licence.

(ii) Strong analgesics. The more potent analgesics including codeine are opiate derivatives, and may produce a significant decrement in human performance and, therefore, are not compatible with the safe exercise of the privileges of the licence.

(8) Anti-ulcer medicines. Gastric secretion inhibitors such as H2 antagonists (e.g. ranitidine, cimetidine) or proton pump inhibitors (e.g. omeprazole) may be acceptable after diagnosis of the pathological condition. It is important to seek for the medical diagnosis and not to only treat the dyspeptic symptoms.

(9) Anti-diarrhoeal drugs. Loperamide is one of the more common anti-diarrhoeal drugs and is usually safe to take whilst exercising the privileges of the licence. However, the diarrhoea itself often makes the air traffic controller unable to exercise the privileges of the licence.

(10) Hormonal contraceptives and hormone replacement therapy usually have no adverse effects and are compatible with the safe exercise of the privileges of the licence.

(11) Erectile dysfunction medication. This medication may cause disturbances in colour vision and dizziness. There should be at least six hours between taking sildenafil and exercising the privileges of the licence; and 36 hours between taking vardenafil or tadalafil and exercising the privileges of the licence.

(12) Smoking cessation. Nicotine replacement therapy may be acceptable. However, other medication affecting the central nervous system (buproprion, varenicline) is not acceptable for air traffic controllers.

(13) High blood pressure medication. Most anti-hypertensive drugs are compatible with the safe exercise of the privileges of the licence. However, if the level of blood pressure is such that drug therapy is required, the air traffic controller should be monitored for any side effects before exercising the privileges of the licence. Therefore, consultation with the AME, AeMC or Medical Assessor as applicable, is needed.

(14) Asthma medication. Asthma has to be clinically stable before an air traffic controller can return to exercising the privileges of the licence. The use of respiratory aerosols or powders, such as corticosteroids, beta-2-agonists or chromoglycic acid may be compatible with the safe exercise of the privileges of the licence. However, the use of oral steroids or theophylline derivatives is usually incompatible with the safe exercise of the privileges of the licence. Air traffic controllers using medication for asthma should consult an AME, AeMC, or Medical Assessor, as applicable.

(15) Tranquillisers, anti-depressants and sedatives. The inability to react, due to the use of this group of medicines, together with the underlying condition for which these medications have been prescribed, will almost certainly mean that the mental state of an air traffic controller is not compatible with the safe exercise of the privileges of the licence. Air traffic controllers using tranquillisers, anti-depressants and sedatives should consult an AME, AeMC, or Medical Assessor, as applicable.

(16) Sleeping tablets. Sleeping tablets dull the senses, may cause confusion and slow reaction times. The duration of effect may vary from individual to individual and may be unduly prolonged. Air traffic controllers using sleeping tablets should consult an AME, AeMC, or Medical Assessor, as applicable.

(17) Melatonin. Melatonin is a hormone that is involved with the regulation of the circadian rhythm. In some countries it is a prescription medicine, whereas in most other countries it is regarded as a ‘dietary supplement’ and can be bought without any prescription. The results from the efficiency of melatonin in treatment of jet lag or sleep disorders have been contradictory. Air traffic controllers using melatonin should consult an AME, AeMC, or Medical Assessor, as applicable.

(18) Coffee and other caffeinated drinks may be acceptable, but excessive coffee drinking may have harmful effects, including disturbance of the heart’s rhythm. Other stimulants including caffeine pills, amphetamines, etc. (often known as ‘pep’ pills) used to maintain wakefulness or suppress appetite can be habit forming. Susceptibility to different stimulants varies from one individual to another, and all may cause dangerous overconfidence. Overdosage causes headaches, dizziness and mental disturbance. These other stimulants should not be used.

(19) Anaesthetics. Following local, general, dental and other anaesthetics, a period of time should elapse before returning to exercising the privileges of the licence. The period will vary considerably from individual to individual, but an air traffic controller should not exercise the privileges of the licence for at least 12 hours after a local anaesthetic, and for at least 48 hours after a general, spinal or epidural anaesthetic.

(e) Many preparations on the market nowadays contain a combination of medicines. It is, therefore, essential that if there is any new medication or dosage, however slight, the effect should be observed by the air traffic controller whilst not exercising the privileges of the licence. It should be noted that medication which would not normally affect air traffic controller performance may

do so in individuals who are 'oversensitive' to a particular preparation. Individuals are, therefore, advised not to take any medicines before or whilst exercising the privileges of their licence unless they are completely familiar with their effects on their own bodies. In cases of doubt, air traffic controllers should consult an AME, AeMC, or Medical Assessor, as applicable.

(f) Other treatments

Alternative or complementary medicine, such as acupuncture, homeopathy, hypnotherapy and several other disciplines, is developing and gaining greater credibility. Such treatments are more acceptable in some States than others. There is a need to ensure that 'other treatments', as well as the underlying condition, are declared and considered by the AME, AeMC, or Medical Assessor, as applicable, for assessing fitness.

AMC1 ATCO.MED.A.025 Obligations of AeMC and AME

(a) If the aero-medical examination is carried out by two or more AMEs, only one of them should be responsible for coordinating the results of the examination, evaluating the findings with regard to medical fitness and signing the report.

(b) The applicant should be made aware that the associated medical certificate may be suspended or revoked if the applicant provides incomplete, inaccurate or false statements on their medical history to the AME or AeMC.

(c) The AME or AeMC should give advice to the applicant on treatment and preventive measures if, during the course of the examination, medical conditions which may endanger the medical fitness of the applicant in the future are found.

GM1 ATCO.MED.A.025 Obligations of AeMC and AME

GUIDELINES FOR THE AEMC AND AME CONDUCTING THE AERO-MEDICAL EXAMINATIONS AND ASSESSMENTS FOR CLASS 3 MEDICAL CERTIFICATES

(a) Before performing the aero-medical examination, the AeMC or AME should:

(1) verify the applicant's identity by checking their identity card, passport, driving licence or other official document containing a photograph of the applicant;

(2) obtain details of the applicant's licence from the applicant's licensing authority if they do not have their licence with them;

(3) obtain details of the applicant's most recent medical certificate from the applicant's licensing authority if they do not have their certificate with them;

(4) in the case of a specific medical examination (SIC) on the existing medical certificate, obtain details of the specific medical condition and any associated instructions from the applicant's licensing authority. This could include, for example, a requirement to undergo a specific examination or test;

(5) except for initial applicants, ascertain, from the previous medical certificate, which routine medical test(s) should be conducted, for example electrocardiogram (ECG);

(6) provide the applicant with the application form for a medical certificate and the instructions for its completion and ask the applicant to complete the form but not to sign it yet;

(7) go through the form with the applicant and give information to help the applicant understand the significance of the entries and ask any questions which might help the applicant to recall important historical medical data; and

(8) verify that the form is complete and legible, ask the applicant to sign and date the form and then sign it as well. If the applicant declines to complete the application form fully or declines to sign the declaration consent to the release of medical information, inform the applicant that it may not be possible to issue a medical certificate regardless of the outcome of the clinical examination.

(b) Once all the items in (a) have been addressed, the AeMC or AME should:

(1) perform the aero-medical examination of the applicant in accordance with the applicable rules;

(2) arrange for additional specialist medical examinations, such as otorhinolaryngology or ophthalmology, to be conducted as applicable and obtain the associated report forms or reports;

(3) complete the aero-medical examination report form in accordance with the associated instructions for completion; and

(4) ensure that all of the report forms are complete, accurate and legible.

(c) Once all the actions in (b) have been carried out, the AeMC or AME should review the report forms and:

(1) if satisfied that the applicant meets the applicable medical requirements as set out in this Part, issue a medical certificate, with limitations if necessary. The applicant should sign the certificate once signed by the AeMC or AME; or

(2) if the applicant does not meet the applicable medical requirements or if the fitness of the applicant is in doubt:

(i) refer the decision on medical fitness to the licensing authority as indicated in ATCO.MED.B.001; or

(ii) deny issuance of a medical certificate, explain the reason(s) for denial to the applicant and inform them of their right of a review according to the procedures of the competent authority.

(d) The AeMC or AME should send the documents as required by ATCO.MED.A.025(b) to the applicant's licensing authority within five days from the date of the aero-medical examination. If a medical certificate has been denied or the decision has been referred, the documents should be sent to the licensing authority on the same day that the denial or referral decision is reached.

SECTION 2
REQUIREMENTS FOR MEDICAL CERTIFICATES

AMC1 ATCO.MED.A.035 Application for a medical certificate

Except for initial applicants, when applicants do not present the most recent medical certificate to the AeMC or AME prior to the relevant examinations, the AeMC or AME should not issue the medical certificate unless relevant information is received from the licensing authority.

SUBPART B — SPECIFIC REQUIREMENTS FOR CLASS 3 MEDICAL CERTIFICATES

SECTION 1
GENERAL

AMC1 ATCO.MED.B.001 Limitations to medical certificates

(a) An AeMC or AME may refer the decision on fitness of an applicant to the licensing authority in borderline cases or where fitness is in doubt.

(b) In cases where a fit assessment may only be considered with a limitation, the AeMC, AME or the licensing authority should evaluate the medical condition of the applicant with appropriate personnel from the air navigation service provider and other experts, if necessary.

(c) Entry of limitations

(1) Limitations TML, VDL, VML, VNL, CCL, HAL, RXO may be imposed by an AME or an AeMC.

(2) Limitations VXL and VXN should be imposed with advice of the air navigation service provider.

(3) Limitations SIC and SSL should only be imposed by the licensing authority.

(d) Removal of limitations

All limitations should only be removed by the licensing authority.

AMC2 ATCO.MED.B.001 Limitations to medical certificates

LIMITATION CODES

(a) The following abbreviations for limitations should be used on the medical certificate as applicable:

Code	Limitation
TML	Restriction of the period of validity of the medical certificate
VDL	Wear correction for defective distant vision and carry spare set of spectacles
VXL	Correction for defective distant vision depending on the working environment
VML	Wear correction for defective distant, intermediate and near vision and carry spare set of spectacles
VNL	Have correction available for defective near vision and carry spare set of spectacles
VXN	Correction for defective near vision; correction for defective distant vision depending on the working environment
RXO	Specialist ophthalmological examinations
CCL	Correction by means of contact lenses
HAL	Valid only when hearing aids are worn
SIC	Specific medical examination(s)
SSL	Special restrictions as specified

(b) The abbreviations for the limitation codes should be explained to the holder of a medical certificate as follows:

(1) TML — Time limitation

The period of validity of the medical certificate is limited to the duration as shown on the medical certificate. This period of validity commences on the date of the aero-medical examination. Any period of validity remaining on the previous medical certificate is no longer valid. The holder of a medical certificate should present him/herself for reassessment or examination when advised and should follow any medical recommendations.

(2) VDL — Wear corrective lenses and carry a spare set of spectacles

Correction for defective distant vision: whilst exercising the privileges of the licence, the holder of a medical certificate should wear spectacles or contact lenses that correct for defective distant vision as examined and approved by the AeMC or AME. Contact lenses may not be worn until cleared to do so by an AeMC or AME. A spare set of spectacles, approved by the AeMC or AME, should be readily available.

(3) VXL — Correction for defective distant vision depending on the working environment

Correction for defective distant vision does not have to be worn if the air traffic controller's visual working environment is in the area of up to 100 cm. Applicants who do not meet the uncorrected distant visual acuity requirement but meet the visual acuity requirement for intermediate and near vision without correction and whose visual working environment is only the intermediate and near vision area (up to 100 cm) may work without corrective lenses.

(4) VML — Wear multifocal spectacles and carry a spare set of spectacles

Correction for defective distant, intermediate and near vision: whilst exercising the privileges of the licence, the holder of a medical certificate should wear spectacles that correct for defective distant, intermediate and near vision as examined and approved by the AeMC or AME. Contact lenses or full-frame spectacles, when either correct for near vision only, may not be worn.

(5) VNL — Have available corrective spectacles and a spare set of spectacles

Correction for defective near vision: whilst exercising the privileges of the licence, the holder of a medical certificate should have readily available spectacles that correct for defective near vision as examined and approved by the AeMC or AME. Contact lenses or full-frame spectacles, when either correct for near vision only, may not be worn.

(6) VXN — Have available corrective spectacles and a spare set of spectacles; correction for defective distant vision depending on the working environment.

Correction for defective distant vision does not have to be worn if the air traffic controller's visual working environment is in the area of up to 100 cm. Applicants who do not meet the uncorrected distant and uncorrected near visual acuity requirements, but meet the visual acuity requirement for intermediate vision without correction and whose visual working environment is only the intermediate and near vision area (up to 100 cm) should have readily available spectacles and a spare set that correct for defective near vision as

examined and approved by the AeMC or AME. Contact lenses or full-frame spectacles, when either correct for near vision only, may not be worn.

(7) CCL — Wear contact lenses that correct for defective vision

Correction for defective distant vision: whilst exercising the privileges of the licence, the holder of a medical certificate should wear contact lenses that correct for defective distant vision, as examined and approved by the AeMC or AME. A spare set of similarly correcting spectacles shall be readily available for immediate use whilst exercising the privileges of the licence.

(8) RXO — Specialist ophthalmological examination(s)

Specialist ophthalmological examination(s), other than the examinations stipulated in this Part, are required for a significant reason.

(9) HAL — Hearing aid(s)

Whilst exercising the privileges of the licence, the holder of the medical certificate should use hearing aid(s) that compensate(s) for defective hearing as examined and approved by the AeMC or AME. A spare set of batteries should be available.

(10) SIC — Specific medical examination(s)

This limitation requires the AeMC or AME to contact the licensing authority before embarking upon renewal or revalidation aero-medical assessment. It is likely to concern a medical history of which the AME should be aware prior to undertaking the aero-medical assessment.

(11) SSL — Special restrictions as specified

This limitation may be considered when an individually specified limitation, not defined in this paragraph, is appropriate to mitigate an increased level of risk to the safe exercise of the privileges of the licence. The description of the SSL should be entered on the medical certificate or in a separate document to be carried with the medical certificate.

SECTION 2
SPECIFIC REQUIREMENTS FOR CLASS 3 MEDICAL CERTIFICATES

AMC1 ATCO.MED.B.010 Cardiovascular system

(a) Electrocardiography

(1) An exercise electrocardiogram (ECG) when required as part of a cardiovascular assessment should be symptom-limited and completed to a minimum of Bruce Stage IV or equivalent.

(2) Reporting of resting and exercise ECGs should be carried out by the AME or an appropriate specialist.

(b) General

(1) Cardiovascular risk factor assessment

(i) Serum/plasma lipid estimation is case finding and significant abnormalities should require investigation and management under the supervision of the AeMC or AME in consultation with the licensing authority if necessary.

(ii) An accumulation of risk factors (smoking, family history, lipid abnormalities, hypertension, etc.) should require cardiovascular evaluation by the AeMC or AME in consultation with the licensing authority if necessary.

(2) Extended cardiovascular assessment

(i) The extended cardiovascular assessment should be undertaken at an AeMC or by a cardiologist.

(ii) The extended cardiovascular assessment should include an exercise ECG or other test that will provide equivalent information.

(c) Peripheral arterial disease

Applicants with peripheral arterial disease, before or after surgery, should undergo satisfactory cardiological evaluation including an exercise ECG and 2D echocardiography. Further tests may be required which should show no evidence of myocardial ischaemia or significant coronary artery stenosis. A fit assessment may be considered provided:

(1) the exercise ECG is satisfactory; and

(2) there is no sign of significant coronary artery disease or evidence of significant atheroma elsewhere, and no functional impairment of the end organ supplied.

(d) Aortic aneurysm

(1) Applicants with an aneurysm of the infra-renal abdominal aorta may be assessed as fit following a satisfactory cardiological evaluation.

(2) Applicants may be assessed as fit after surgery for an aneurysm of the thoracic or abdominal aorta if the blood pressure and cardiovascular evaluation are satisfactory. Regular evaluations by a cardiologist should be carried out.

(e) Cardiac valvular abnormalities

(1) Applicants with previously unrecognised cardiac murmurs should require cardiological evaluation. If considered significant, further investigation should include at least 2D Doppler echocardiography.

(2) Applicants with minor cardiac valvular abnormalities may be assessed as fit by the licensing authority. Applicants with significant abnormality of any of the heart valves should be assessed as unfit.

(3) Aortic valve disease

(i) Applicants with bicuspid aortic valve may be assessed as fit if no other cardiac or aortic abnormality is demonstrated. Regular cardiological follow-up, including 2D Doppler echocardiography, may be required.

(ii) Applicants with mild aortic stenosis may be assessed as fit. Annual cardiological follow-up may be required and should include 2D Doppler echocardiography.

(iii) Applicants with aortic regurgitation may be assessed as fit only if regurgitation is minor and there is no evidence of volume overload. There should be no demonstrable abnormality of the ascending aorta on 2D Doppler echocardiography. Cardiological follow-up including 2D Doppler echocardiography may be required.

(4) Mitral valve disease

(i) Applicants with rheumatic mitral stenosis may only be assessed as fit in favourable cases after cardiological evaluation including 2D echocardiography.

(ii) Applicants with uncomplicated minor regurgitation may be assessed as fit. Regular cardiological follow-up including 2D echocardiography may be required.

(iii) Applicants with mitral valve prolapse and mild mitral regurgitation may be assessed as fit.

(iv) Applicants with evidence of volume overloading of the left ventricle demonstrated by increased left ventricular end-diastolic diameter should be assessed as unfit.

(f) Valvular surgery

Applicants with cardiac valve replacement/repair should be assessed as unfit. After a satisfactory cardiological evaluation, fit assessment may be considered.

(1) Asymptomatic applicants may be assessed as fit by the licensing authority six months after valvular surgery subject to:

(i) normal valvular and ventricular function as judged by 2D Doppler echocardiography;

(ii) satisfactory symptom-limited exercise ECG or equivalent;

(iii) demonstrated absence of coronary artery disease unless this has been satisfactorily treated by re-vascularisation;

(iv) no cardioactive medication is required;

(v) annual cardiological follow-up to include an exercise ECG and 2D Doppler echocardiography. Longer periods may be acceptable once a stable condition has been confirmed by cardiological evaluations.

(2) Applicants with implanted mechanical valves may be assessed as fit subject to documented exemplary control of their anti-coagulant therapy. Age factors should form part of the risk assessment.

(g) Thromboembolic disorders

Applicants with arterial or venous thrombosis or pulmonary embolism should be assessed as unfit during the first six months of anticoagulation. A fit assessment, with a limitation if necessary, may be considered by the licensing authority after six months of stable anticoagulation. Anticoagulation should be considered stable if, within the last six months, at least five international normalised ratio (INR) values are documented, of which at least four are within the INR target range and the haemorrhagic risk is acceptable. In cases of anticoagulation medication not requiring INR monitoring, a fit assessment may be considered after review by the licensing authority after a period of three months. Applicants with pulmonary embolism should also be evaluated by a cardiologist. Following cessation of anticoagulant therapy, for any indication, applicants should undergo a reassessment by the licensing authority.

(h) Other cardiac disorders

(1) Applicants with a primary or secondary abnormality of the pericardium, myocardium or endocardium should be assessed as unfit. A fit assessment may be considered following complete resolution and satisfactory cardiological evaluation which may include 2D Doppler echocardiography, exercise ECG, 24-hour ambulatory ECG, and/or myocardial perfusion

scan or equivalent test. Coronary angiography may be indicated. Regular cardiological follow-up may be required.

(2) Applicants with a congenital abnormality of the heart should be assessed as unfit. Applicants following surgical correction or with minor abnormalities that are functionally unimportant may be assessed as fit following cardiological assessment. No cardioactive medication is acceptable. Investigations may include 2D Doppler echocardiography, exercise ECG and 24-hour ambulatory ECG. Regular cardiological follow-up may be required.

(i) Syncope

(1) Applicants with a history of recurrent episodes of syncope should be assessed as unfit. A fit assessment may be considered after a sufficient period of time without recurrence provided cardiological evaluation is satisfactory.

(2) A cardiological evaluation should include:

(i) a satisfactory symptom exercise ECG. If the exercise ECG is abnormal, a myocardial perfusion scan or equivalent test should be required;

(ii) a 2D Doppler echocardiogram showing neither significant selective chamber enlargement nor structural or functional abnormality of the heart, valves or myocardium;

(iii) a 24-hour ambulatory ECG recording showing no conduction disturbance, complex or sustained rhythm disturbance or evidence of myocardial ischaemia;

(iv) a tilt test carried out to a standard protocol showing no evidence of vasomotor instability.

(3) Neurological review should be required.

(j) Blood pressure

(1) Anti-hypertensive treatment should be agreed by the licensing authority. Medication may include:

(i) non-loop diuretic agents;

(ii) Angiotensin Converting Enzyme (ACE) inhibitors;

(iii) angiotensin II receptor blocking agents;

(iv) long-acting slow channel calcium blocking agents;

(v) certain (generally hydrophilic) beta-blocking agents.

(2) Following initiation of medication for the control of blood pressure, applicants should be re-assessed to verify that the treatment is compatible with the safe exercise of the privileges of the licence.

(k) Coronary artery disease

(1) Applicants with chest pain of an uncertain cause should undergo a full investigation before a fit assessment may be considered. Applicants with angina pectoris should be assessed as unfit, whether or not it is abolished by medication.

(2) Applicants with suspected asymptomatic coronary artery disease should undergo a cardiological evaluation including exercise ECG. Further tests (myocardial perfusion

scanning, stress echocardiography, coronary angiography or equivalent) may be required, which should show no evidence of myocardial ischaemia or significant coronary artery stenosis.

(3) After an ischaemic cardiac event, including revascularisation, applicants without symptoms should have reduced any vascular risk factors to an appropriate level. Medication, when used to control cardiac symptoms, is not acceptable. All applicants should be on acceptable secondary prevention treatment.

(i) A coronary angiogram obtained around the time of, or during, the ischaemic myocardial event and a complete, detailed clinical report of the ischaemic event and of any operative procedures should be available.

(A) there should be no stenosis more than 50 % in any major untreated vessel, in any vein or artery graft or at the site of an angioplasty/stent, except in a vessel subtending a myocardial infarction;

(B) the whole coronary vascular tree should be assessed as satisfactory by a cardiologist, and particular attention should be paid to multiple stenoses and/or multiple revascularisations;

(C) an untreated stenosis greater than 30 % in the left main or proximal left anterior descending coronary artery should not be acceptable.

(ii) At least six months from the ischaemic myocardial event, including revascularisation, the following investigations should be completed:

(A) an exercise ECG showing neither evidence of myocardial ischaemia nor rhythm or conduction disturbance;

(B) an echocardiogram or equivalent test 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 equivalent test, which should 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 should also be required;

(D) further investigations, such as a 24-hour ECG, may be necessary to assess the risk of any significant rhythm disturbance.

(iii) Follow-up should be conducted annually (or more frequently, if necessary) to ensure that there is no deterioration of the cardiovascular status. It should include a cardiological evaluation, exercise ECG and cardiovascular risk assessment. Additional investigations may be required.

(iv) After coronary artery vein bypass grafting, a myocardial perfusion scan or equivalent test should be performed on clinical indication, and in all cases within five years from the procedure.

(v) In all cases, coronary angiography, or an equivalent test, should be considered at any time if symptoms, signs or non-invasive tests indicate myocardial ischaemia.

(vi) Applicants may be assessed as fit after successful completion of the three-month or subsequent review.

(l) Rhythm and conduction disturbances

(1) Applicants with any significant rhythm or conduction disturbance may be assessed as fit after cardiological evaluation and with appropriate follow-up. Such evaluation should include:

(i) exercise ECG which should show no significant abnormality of rhythm or conduction, and no evidence of myocardial ischaemia. Withdrawal of cardioactive medication prior to the test should be required;

(ii) 24-hour ambulatory ECG which should demonstrate no significant rhythm or conduction disturbance;

(iii) 2D Doppler echocardiogram which should show no significant selective chamber enlargement or significant structural or functional abnormality, and a left ventricular ejection fraction of at least 50 %.

Further evaluation may include:

(iv) 24-hour ECG recording repeated as necessary;

(v) electrophysiological study;

(vi) myocardial perfusion imaging or equivalent test;

(vii) cardiac magnetic resonance imaging (MRI) or equivalent test;

(viii) coronary angiogram or equivalent test.

(2) Applicants with supraventricular or ventricular ectopic complexes on a resting ECG may require no further evaluation, provided the frequency can be shown to be no greater than one per minute, for example on an extended ECG strip.

Applicants with asymptomatic isolated uniform ventricular ectopic complexes may be assessed as fit, but frequent or complex forms require full cardiological evaluation.

(3) Where anticoagulation is needed for a rhythm disturbance, a fit assessment may be considered if the haemorrhagic risk is acceptable and the anticoagulation is stable. Anticoagulation should be considered stable if, within the last six months, at least five INR values are documented, of which at least four are within the INR target range. In cases of anticoagulation medication not requiring INR monitoring, a fit assessment with an appropriate limitation may be considered after review by the licensing authority after a period of three months.

(4) Ablation

(i) Applicants who have undergone ablation therapy should be assessed as unfit for a minimum period of two months.

(ii) A fit assessment may be considered following successful catheter ablation provided an electrophysiological study (EPS) demonstrates satisfactory control has been achieved.

(iii) Where EPS is not performed, longer periods of unfitness and cardiological follow-up should be considered.

(iv) Follow-up should include a cardiological review.

(5) Supraventricular arrhythmias

Applicants with significant disturbance of supraventricular rhythm, including sinoatrial dysfunction, whether intermittent or established, should be assessed as unfit. A fit assessment may be considered if cardiological evaluation is satisfactory.

(i) For initial applicants with atrial fibrillation/flutter, a fit assessment should be limited to those with a single episode of arrhythmia which is considered to be unlikely to recur.

(ii) For revalidation, applicants may be assessed as fit if cardiological evaluation is satisfactory and the stroke risk is sufficiently low. A fit assessment may be considered after a period of stable anticoagulation as prophylaxis, after review by the licensing authority. Anticoagulation should be considered stable if, within the last six months, at least five INR values are documented, of which at least four are within the INR target range. In cases of anticoagulation medication not requiring INR monitoring, a fit assessment may be considered after review by the licensing authority after a period of three months.

(iii) Applicants with asymptomatic sinus pauses up to 2.5 seconds on a resting ECG may be assessed as fit if exercise ECG, 2D echocardiography and 24-hour ambulatory ECG are satisfactory.

(iv) Applicants with symptomatic sino-atrial disease should be assessed as unfit.

(6) Mobitz type 2 atrio-ventricular block

Applicants with Mobitz type 2 AV block may be assessed as fit after a full cardiological evaluation confirms the absence of distal conducting tissue disease.

(7) Complete right bundle branch block

Applicants with complete right bundle branch block should require cardiological evaluation on first presentation.

(8) Complete left bundle branch block

A fit assessment may be considered as follows:

(i) Initial applicants may be assessed as fit after full cardiological evaluation showing no pathology. Depending on the clinical situation, a period of stability may be required.

(ii) Applicants for revalidation or renewal of a medical certificate with a de-novo left bundle branch block may be assessed as fit after cardiological evaluation showing no pathology. A period of stability may be required.

(iii) A cardiological evaluation should be required after 12 months in all cases.

(9) Ventricular pre-excitation

Applicants with pre-excitation may be assessed as fit if they are asymptomatic, and an electrophysiological study, including an adequate drug-induced autonomic stimulation protocol, reveals no inducible re-entry tachycardia and the existence of multiple pathways is excluded. Cardiological follow-up should be required including a 24-hour ambulatory ECG recording showing no tendency to symptomatic or asymptomatic tachy-arrhythmia.

(10) Pacemaker

Applicants with a subendocardial pacemaker may be assessed as fit three months after insertion provided:

(i) there is no other disqualifying condition;

(ii) bipolar lead systems programmed in bipolar mode without automatic mode change have been used;

(iii) that the applicant is not pacemaker dependent;

(iv) regular cardiological follow-up should include a symptom-limited exercise ECG that shows no abnormality or evidence of myocardial ischaemia.

(11) QT prolongation

Applicants with asymptomatic QT-prolongation may be assessed as fit subject to a satisfactory cardiological evaluation.

(12) Brugada pattern on electrocardiography

Applicants with a Brugada pattern Type 1 should be assessed as unfit. Applicants with Type 2 or Type 3 may be assessed as fit, with limitations as appropriate, subject to satisfactory cardiological evaluation.

GM1 ATCO.MED.B.010 Cardiovascular system

MITRAL VALVE DISEASE

(a) Minor regurgitation should have evidence of no thickened leaflets or flail chordae and left atrial internal diameter of less than or equal to 4.0 cm.

(b) The following may indicate severe regurgitation:

(1) LV internal diameter (diastole) > 6.0 cm; or

(2) LV internal diameter (systole) > 4.1 cm; or

(3) Left atrial internal diameter > 4.5 cm.

(c) Doppler indices, such as width of jet, backwards extension and whether there is flow reversal in the pulmonary veins may be helpful in assessing severity of regurgitation.

GM2 ATCO.MED.B.010 Cardiovascular system

VENTRICULAR PRE-EXCITATION

(a) Asymptomatic applicants with pre-excitation may be assessed as fit at revalidation with an Operational Multi-pilot Limitation (OML) if they meet the following criteria:

(1) no inducible re-entry;

(2) refractory period > 300 ms;

(3) no induced atrial fibrillation.

(b) There should be no evidence of multiple accessory pathways.

GM3 ATCO.MED.B.010 Cardiovascular system
COMPLETE LEFT BUNDLE BRANCH BLOCK

Left bundle branch block is more commonly associated with coronary artery disease and, thus, requires more in-depth investigation, which may be invasive.

GM4 ATCO.MED.B.010 Cardiovascular system
PACEMAKER

(a) Scintigraphy may be helpful in the presence of conduction disturbance/paced complexes in the resting ECG.

(b) 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.

(c) It is known that certain operational equipment may interfere with the performance of the pacemaker. The type of pacemaker used, therefore, should have been tested to ensure it does not suffer from interference in the operational environment. Supporting data and a performance statement to this effect should be available from the supplier.

GM5 ATCO.MED.B.010 Cardiovascular system
ANTICOAGULATION

Applicants and licence holders taking anticoagulant medication which requires monitoring with INR testing, should measure their INR on a 'near patient' testing system within 12 hours prior to starting a shift pattern and then at least every three days during the shift pattern. The privileges of the licence should only be exercised if the INR is within the target range. The INR result should be recorded and the results should be reviewed at each aero-medical assessment.

AMC1 ATCO.MED.B.015 Respiratory system

(a) Examination

(1) Spirometric examination is required for initial examination. An FEV1/FVC ratio less than 70 % should require evaluation by a specialist in respiratory disease before a fit assessment can be considered.

(2) Posterior/anterior chest radiography may be required at initial, revalidation or renewal examinations when indicated on clinical or epidemiological grounds.

(b) Chronic obstructive airways disease

Applicants with chronic obstructive airways disease should be assessed as unfit. Applicants with only minor impairment of their pulmonary function may be assessed as fit after specialist respiratory evaluation. Applicants with pulmonary emphysema may be assessed as fit following specialist evaluation showing that the condition is stable and not causing significant symptoms.

(c) Asthma

Applicants with asthma requiring medication or experiencing recurrent attacks of asthma may be assessed as fit if the asthma is considered stable with satisfactory pulmonary function tests and medication is compatible with the safe execution of the privileges of the licence. Use of low dose systemic steroids may be acceptable.

(d) Inflammatory disease

(1) For applicants with active inflammatory disease of the respiratory system, a fit assessment may be considered when the condition has resolved without sequelae and no medication is required.

(2) Applicants with chronic inflammatory diseases may be assessed as fit following specialist evaluation showing mild disease with acceptable pulmonary function test and medication compatible with the safe execution of the privileges of the licence.

(e) Sarcoidosis

(1) Applicants with active sarcoidosis should be assessed as unfit. Specialist evaluation should be undertaken with respect to the possibility of systemic, particularly cardiac, involvement. A fit assessment may be considered if no medication is required, and the disease is limited to hilar lymphadenopathy and inactive. Use of low dose systemic steroids may be acceptable.

(2) Applicants with cardiac or neurological sarcoid should be assessed as unfit.

(f) Pneumothorax

Applicants with a spontaneous pneumothorax should be assessed as unfit. A fit assessment may be considered:

(1) six weeks after the event provided full recovery from a single event has been confirmed in a full respiratory evaluation including a CT scan or equivalent;

(2) following surgical intervention in the case of a recurrent pneumothorax provided there is satisfactory recovery.

(g) Thoracic surgery

(1) Applicants requiring thoracic surgery should be assessed as unfit until such time as the effects of the operation are no longer likely to interfere with the safe exercise of the privileges of the licence.

(2) A fit assessment may be considered after satisfactory recovery and full respiratory evaluation including a CT scan or equivalent. The underlying pathology which necessitated the surgery should be considered in the aero-medical assessment.

(h) Sleep apnoea syndrome/sleep disorder

(1) Applicants with unsatisfactorily treated sleep apnoea syndrome and suffering from excessive daytime sleepiness should be assessed as unfit.

(2) A fit assessment may be considered subject to the extent of symptoms, including vigilance, and satisfactory treatment. ATCO operational experience, sleep apnoea syndrome/sleep disorder education and work place considerations are essential components of the aero-medical assessment.

AMC1 ATCO.MED.B.020 Digestive system

(a) Oesophageal varices

Applicants with oesophageal varices should be assessed as unfit.

(b) Pancreatitis

(1) Applicants with pancreatitis should be assessed as unfit. A fit assessment may be considered if the cause (e.g. gallstone, other obstruction, medication) is removed.

(2) Alcohol may be a cause of dyspepsia and pancreatitis. If considered appropriate, a full evaluation of its use or misuse should be undertaken.

(c) Gallstones

(1) Applicants with a single large gallstone may be assessed as fit after evaluation.

(2) Applicants with multiple gallstones may be assessed as fit while awaiting treatment provided the symptoms are unlikely to interfere with the safe exercise of the privileges of the licence.

(d) Inflammatory bowel disease

Applicants with an established diagnosis or history of chronic inflammatory bowel disease may be assessed as fit if the disease is in established stable remission, and only minimal, if any, medication is being taken. Regular follow-up should be required.

(e) Dyspepsia

Applicants with recurrent dyspepsia requiring medication should be investigated by internal examination including radiologic or endoscopic examination. Laboratory testing should include haemoglobin assessment and faecal examination. Any demonstrated ulceration or significant inflammation requires evidence of recovery before a fit assessment may be considered.

(f) Digestive tract and abdominal surgery

Applicants who have undergone a surgical operation on the digestive tract or its adnexa, including a total or partial excision or a diversion of any of these organs, should be assessed as unfit. A fit assessment may be considered if recovery is complete, the applicant is asymptomatic and the risk of secondary complication or recurrence is minimal.

AMC1 ATCO.MED.B.025 Metabolic and endocrine system

(a) Metabolic, nutritional or endocrine dysfunction

Applicants with metabolic, nutritional or endocrine dysfunction may be assessed as fit if the condition is asymptomatic, clinically compensated and stable with or without replacement therapy, and regularly reviewed by an appropriate specialist.

(b) Obesity

(1) Applicants with a Body Mass Index $\geq$ 35 may be assessed as fit only if the excess weight is not likely to interfere with the safe exercise of the privileges of the licence and a satisfactory cardiovascular risk review and evaluation of the possibility of sleep apnoea syndrome has been undertaken.

(2) Functional testing in the working environment may be necessary before a fit assessment may be considered.

(c) Thyroid dysfunction

Applicants with hyperthyroidism or hypothyroidism should attain a stable euthyroid state before a fit assessment may be considered.

(d) Abnormal glucose metabolism

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

(e) Diabetes mellitus

(1) The following medication, alone and in combination, may be acceptable for control of type 2 diabetes:

(i) alpha-glucosidase inhibitors;

(ii) medication that acts on the incretin pathway;

(iii) biguanides.

(2) A fit assessment may be considered after evaluation of the operational environment, including means of glucose monitoring/management whilst performing rated duties, and with demonstrated exemplary glycaemic control.

(3) Annual follow-up by a specialist should be required including demonstration of absence of complications, good glycaemic control demonstrated by six-monthly HbA1c measurements, and a normal exercise tolerance test.

AMC1 ATCO.MED.B.030 Haematology

(a) Anaemia

(1) Anaemia demonstrated by a reduced haemoglobin level should require investigation. A fit assessment may be considered in cases where the primary cause has been treated (e.g. iron or B12 deficiency) and the haemoglobin or haematocrit has stabilised at a satisfactory level. The recommended range of the haemoglobin level is 11–17 g/dl.

(2) Anaemia which is unamenable to treatment should be disqualifying.

(b) Haemoglobinopathy

Applicants with a haemoglobinopathy should be assessed as unfit. A fit assessment may be considered where minor thalassaemia, sickle cell disease or other haemoglobinopathy is diagnosed without a history of crises and where full functional capability is demonstrated.

(c) Coagulation disorders

(1) Significant coagulation disorders require investigation. A fit assessment may be considered if there is no history of significant bleeding or clotting episodes and the haematological data indicate that it is safe to do so.

(2) If anticoagulant therapy is prescribed, AMC1 ATCO.MED.B.010(g) should be followed.

(d) Disorders of the lymphatic system

Lymphatic enlargement requires investigation. A fit assessment may be considered in cases of an acute infectious process which is fully recovered, or Hodgkin’s lymphoma, or other lymphoid malignancy which has been treated and is in full remission, or that requires minimal or no treatment.

(e) Leukaemia

(1) Applicants with acute leukaemia should be assessed as unfit. Once in established remission, applicants may be assessed as fit.

(2) Applicants with chronic leukaemia should be assessed as unfit. A fit assessment may be considered after remission and a period of demonstrated stability.

(3) Applicants with a history of leukaemia should have no history of central nervous system involvement and no continuing side effects from treatment which are likely to interfere with the safe exercise of the privileges of the licence. Haemoglobin and platelet levels should be satisfactory.

(4) Regular follow-up is required in all cases of leukaemia.

(f) Splenomegaly

Splenomegaly requires investigation. A fit assessment may be considered if the enlargement is minimal, stable and no associated pathology is demonstrated, or if the enlargement is minimal and associated with another acceptable condition.

GM1 ATCO.MED.B.030 Haematology
HODGKIN'S LYMPHOMA

Due to potential side effects of specific chemotherapeutic agents, the precise regime utilised should be taken into account.

GM2 ATCO.MED.B.030 Haematology
CHRONIC LEUKAEMIA

A fit assessment may be considered if the chronic leukaemia has been diagnosed as:

(a) lymphatic at stages 0, I, and possibly II without anaemia and minimal treatment; or

(b) stable 'hairy cell' leukaemia with normal haemoglobin and platelets.

GM3 ATCO.MED.B.030 Haematology
SPLENOMEGALY

(a) Splenomegaly should not preclude a fit assessment, but should be assessed on an individual basis.

(b) Associated pathology of splenomegaly is e.g. treated chronic malaria.

(c) An acceptable condition associated with splenomegaly is e.g. Hodgkin's lymphoma in remission.

AMC1 ATCO.MED.B.035 Genitourinary system

(a) Abnormal urinalysis

Any abnormal finding on urinalysis requires investigation. This investigation should include proteinuria, haematuria and glycosuria.

(b) Renal disease

(1) Applicants presenting with any signs of renal disease should be assessed as unfit. A fit assessment may be considered if blood pressure is satisfactory and renal function is acceptable.

(2) Applicants requiring dialysis should be assessed as unfit.

(c) Urinary calculi

(1) Applicants with an asymptomatic calculus or a history of renal colic require investigation. A fit assessment may be considered after successful treatment for a calculus and with appropriate follow-up.

(2) Residual calculi should be disqualifying unless they are in a location where they are unlikely to move and give rise to symptoms.

(d) Renal and urological surgery

(1) Applicants who have undergone a major surgical operation on the genitourinary system or its adnexa involving a total or partial excision or a diversion of any of its organs should be assessed as unfit until recovery is complete, the applicant is asymptomatic and the risk of secondary complications is minimal.

(2) Applicants with compensated nephrectomy without hypertension or uraemia may be assessed as fit.

(3) Applicants who have undergone renal transplantation may be considered for a fit assessment if it is fully compensated and tolerated with only minimal immuno-suppressive therapy after at least 12 months.

(4) Applicants who have undergone total cystectomy may be considered for a fit assessment if there is satisfactory urinary function, no infection and no recurrence of primary pathology.

AMC1 ATCO.MED.B.040 Infectious disease

(a) Infectious disease — General

In cases of infectious disease, consideration should be given to a history of, or clinical signs indicating, underlying impairment of the immune system.

(b) Tuberculosis

(1) Applicants with active tuberculosis should be assessed as unfit. A fit assessment may be considered following completion of therapy.

(2) Applicants with quiescent or healed lesions may be assessed as fit. Specialist evaluation should consider the extent of the disease, the treatment required and possible side effects of medication.

(c) Syphilis

Applicants with acute syphilis should be assessed as unfit. A fit assessment may be considered in the case of those fully treated and recovered from the primary and secondary stages.

(d) HIV positivity

(1) Applicants who are HIV positive may be assessed as fit if a full investigation provides no evidence of HIV associated diseases that might give rise to incapacitating symptoms. Frequent review of the immunological status and neurological evaluation by an appropriate specialist should be carried out. A cardiological review may also be required depending on medication.

(2) Applicants with an AIDS defining condition should be assessed as unfit except in individual cases for revalidation of a medical certificate after complete recovery and dependent on the review.

(3) The aero-medical assessment of individual cases under (1) and (2) should be dependent on the absence of symptoms or signs of the disease and the acceptability of serological markers. Treatment should be evaluated by a specialist on an individual basis for its appropriateness and any side effects.

(e) Infectious hepatitis

Applicants with infectious hepatitis should be assessed as unfit. A fit assessment may be considered once the applicant has become asymptomatic after treatment and specialist evaluation. Regular review of the liver function should be carried out.

GM1 ATCO.MED.B.040 Infectious disease

HIV INFECTION

(a) There is no requirement for routine testing of HIV status, but testing may be carried out on clinical indication.

(b) If HIV positivity has been confirmed, a process of rigorous aero-medical 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. The operational environment should be considered in the decision-making.

AMC1 ATCO.MED.B.045 Obstetrics and gynaecology

(a) Gynaecological surgery

Applicants who have undergone a major gynaecological operation should be assessed as unfit until recovery is complete, the applicant is asymptomatic and the risk of secondary complications or recurrence is minimal.

(b) Pregnancy

(1) A pregnant licence holder may be assessed as fit during the first 34 weeks of gestation provided obstetric evaluation continuously indicates a normal pregnancy.

(2) The AeMC or AME or the licensing authority should provide written advice to the applicant and the supervising physician regarding potentially significant complications of pregnancy which may negatively influence the safe exercise of the privileges of the licence.

AMC1 ATCO.MED.B.050 Musculoskeletal system

(a) Applicants with any significant sequelae from disease, injury or congenital abnormality affecting the bones, joints, muscles or tendons with or without surgery require full evaluation prior to a fit assessment.

(b) Abnormal physique, including obesity, or muscular weakness may require aero-medical assessment and particular attention should be paid to an aero-medical assessment in the working environment.

(c) Locomotor dysfunction, amputations, malformations, loss of function and progressive osteoarthritic disorders should be assessed on an individual basis in conjunction with the appropriate operational expert with a knowledge of the complexity of the tasks of the applicant.

(d) Applicants with inflammatory, infiltrative or degenerative disease of the musculoskeletal system may be assessed as fit provided the condition is in remission and the medication is acceptable.

AMC1 ATCO.MED.B.055 Psychiatry

(a) Disorders due to alcohol or other substance use

(1) A fit assessment may be considered after successful treatment, a period of documented sobriety or freedom from substance use, and review by a psychiatric specialist. The licensing authority, with the advice of the psychiatric specialist, should determine the duration of the period to be observed before a medical certificate can be issued.

(2) Depending on the individual case, treatment may include in-patient treatment of some weeks.

(3) Continuous follow-up, including blood testing and peer reports, may be required indefinitely.

(b) Mood disorder

Applicants with an established mood disorder should be assessed as unfit. After full recovery and after full consideration of an individual case, a fit assessment may be considered depending on the characteristics and gravity of the mood disorder. If stability on maintenance psychotropic medication is confirmed, a fit assessment with an appropriate limitation may be considered. If the dosage of the medication is changed, a further period of unfit assessment should be required. Regular specialist supervision should be required.

(c) Psychotic disorder

Applicants with a history, or the occurrence, of a functional psychotic disorder should be assessed as unfit. A fit assessment may be considered if a cause can be unequivocally identified as one which is transient, has ceased and the risk of recurrence is minimal.

(d) Deliberate self-harm

Applicants who have carried out a single self-destructive action or repeated acts of deliberate self-harm should be assessed as unfit. A fit assessment may be considered after full consideration of an individual case which may require psychiatric or psychological evaluation. Neuropsychological evaluation may also be required.

AMC1 ATCO.MED.B.060 Psychology

(a) If a psychological evaluation is indicated, it should be carried out by a psychologist taking into account the ATC environment and the associated risks.

(b) Where there is established evidence that an applicant may have a psychological disorder, the applicant should be referred for psychological opinion and advice.

(c) Established evidence should be verifiable information from an identifiable source related to the mental fitness or personality of a particular individual. Sources for this information can be

accidents or incidents, problems in training or competence assessments, behaviour or knowledge relevant to the safe exercise of the privileges of the licence.

(d) The psychological evaluation may include a collection of biographical data, the administration of aptitude, as well as personality tests and psychological interview.

(e) The psychologist should submit a written report to the AME, AeMC or licensing authority as appropriate, detailing his/her opinion and recommendation.

AMC1 ATCO.MED.B.065 Neurology

(a) Electroencephalography (EEG)

(1) EEG should be carried out when indicated by the applicant's history or on clinical grounds.

(2) Epileptiform paroxysmal EEG abnormalities and focal slow waves should be disqualifying. A fit assessment may be considered after further evaluation.

(b) Epilepsy

(1) Applicants who have experienced one or more convulsive episodes after the age of five should be assessed as unfit.

(2) A fit assessment may be considered if:

(i) the applicant is seizure free and off medication for a period of at least 10 years;

(ii) full neurological evaluation shows that a seizure was caused by a specific non-recurrent cause, such as trauma or toxin.

(3) Applicants who have experienced an episode of benign Rolandic seizure may be assessed as fit provided the seizure has been clearly diagnosed including a properly documented history and typical EEG result and the applicant has been free of symptoms and off treatment for at least 10 years.

(c) Neurological disease

Applicants with any stationary or progressive disease of the nervous system which has caused or is likely to cause a significant disability should be assessed as unfit. A fit assessment may be considered after full neurological evaluation in cases of minor functional losses associated with stationary disease.

(d) Disturbance of consciousness

Applicants with a history of one or more episodes of disturbed consciousness may be assessed as fit if the condition can be satisfactorily explained by a non-recurrent cause. A full neurological evaluation is required.

(e) Head injury

Applicants with a head injury which was severe enough to cause loss of consciousness or is associated with penetrating brain injury should be evaluated by a consultant neurologist. A fit assessment may be considered if there has been a full recovery and the risk of epilepsy is sufficiently low. Behavioural and cognitive aspects should be taken into account.

AMC1 ATCO.MED.B.070 Visual system

(a) Eye examination

(1) At each aero-medical revalidation examination, the visual fitness should be assessed and the eyes should be examined with regard to possible pathology.

(2) All abnormal and doubtful cases should be referred to an ophthalmologist. Conditions which indicate 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.

(3) Where ophthalmological examinations are required for any significant reason, this should be imposed as a limitation on the medical certificate.

(4) The effect of multiple eye conditions should be evaluated by an ophthalmologist with regard to possible cumulative effects. Functional testing in the working environment may be necessary to consider a fit assessment.

(5) Visual acuity should be tested using Snellen charts, or equivalent, under appropriate illumination. Where clinical evidence suggests that Snellen may not be appropriate, Landolt 'C' may be used.

(b) Comprehensive eye examination

A comprehensive eye examination by an eye specialist is required at the initial examination. All abnormal and doubtful cases should be referred to an ophthalmologist. The examination should include:

(1) history;

(2) visual acuities — near, intermediate and distant vision; uncorrected and with best optical correction if needed;

(3) objective refraction — hyperopic initial applicants with a hyperopia of more than +2 dioptres and under the age of 25 in cycloplegia;

(4) ocular motility and binocular vision;

(5) colour vision;

(6) visual fields;

(7) tonometry;

(8) examination of the external eye, anatomy, media (slit lamp) and fundoscopy;

(9) assessment of contrast and glare sensitivity.

(c) Routine eye examination

At each revalidation or renewal examination, the visual fitness should be assessed and the eyes should be examined with regard to possible pathology. All abnormal and doubtful cases should be referred to an ophthalmologist. This routine eye examination should include:

(1) history;

(2) visual acuities — near, intermediate and distant vision; uncorrected and with best optical correction if needed;

(3) morphology by ophthalmoscopy;

(4) further examination on clinical indication.

(d) Refractive error

(1) Applicants with a refractive error between +5.0/-6.0 dioptres may be assessed as fit provided optimal correction has been considered and no significant pathology is demonstrated. If the refractive error exceeds +3.0/-3.0 dioptres, a four-yearly follow-up by an eye specialist should be required.

(2) Applicants with:

(i) a refractive error exceeding -6 dioptres;

(ii) an astigmatic component exceeding 3 dioptres; or

(iii) anisometropia exceeding 3 dioptres;

may be considered for a fit assessment if:

(A) no significant pathology can be demonstrated;

(B) optimal correction has been considered;

(C) visual acuity is at least 6/6 (1.0) in each eye separately with normal visual fields while wearing the optimal spectacle correction;

(D) two-yearly follow-up is undertaken by an eye specialist.

(3) Applicants with hypermetropia exceeding +5.0 dioptres may be assessed as fit subject to a satisfactory ophthalmological evaluation provided there are adequate fusional reserves, normal intraocular pressures and anterior angles and no significant pathology has been demonstrated. Corrected visual acuity in each eye shall be 6/6 or better.

(4) Applicants with a large refractive error shall use contact lenses or high-index spectacle lenses.

(e) Convergence

Applicants with convergence outside the normal range may be assessed as fit provided it does not interfere with near vision (30–50 cm) or intermediate vision (100 cm) with or without correction.

(f) Substandard vision

(1) Applicants with reduced central vision in one eye may be assessed as fit for a revalidation or renewal of a medical certificate if the binocular visual field is normal and the underlying pathology is acceptable according to ophthalmological evaluation. Testing should include functional testing in the appropriate working environment.

(2) Applicants with acquired substandard vision in one eye (monocularity, functional monocular vision including eye muscle imbalance) may be assessed as fit for revalidation or renewal if the ophthalmological examination confirms that:

(i) the better eye achieves distant visual acuity of 1.0 (6/6), corrected or uncorrected;

(ii) the better eye achieves intermediate and near visual acuity of 0.7 (6/9), corrected or uncorrected;

(iii) there is no significant ocular pathology;

(iv) a functional test in the working environment is satisfactory; and

(v) in the case of acute loss of vision in one eye, a period of adaptation time has passed from the known point of visual loss, during which the applicant is assessed as unfit.

(3) An applicant with a monocular visual field defect may be assessed as fit if the binocular visual fields are normal.

(g) Keratoconus

Applicants with keratoconus may be considered for a fit assessment if the visual requirements are met with the use of corrective lenses and periodic review is undertaken by an ophthalmologist.

(h) Heterophoria

Applicants with heterophoria (imbalance of the ocular muscles) exceeding when measured with optimal correction, if prescribed:

(1) at six metres:

2.0 prism dioptres in hyperphoria,

10.0 prism dioptres in esophoria,

8.0 prism dioptres in exophoria

and

(2) at 33 centimetres:

1.0 prism dioptre in hyperphoria,

8.0 prism dioptres in esophoria,

12.0 prism dioptres in exophoria

may be assessed as fit provided that orthoptic evaluation demonstrates that the fusional reserves are sufficient to prevent asthenopia and diplopia. The Netherlands Optical Society (TNO) testing or equivalent should be carried out to demonstrate fusion.

(i) Eye surgery

(1) After refractive surgery or surgery of the cornea including cross linking, a fit assessment may be considered, provided:

(i) satisfactory stability of refraction has been achieved (less than 0.75 dioptres variation diurnally);

(ii) examination of the eye shows no post-operative complications;

(iii) glare sensitivity is normal;

(iv) mesopic contrast sensitivity is not impaired;

(v) evaluation is undertaken by an ophthalmologist.

(2) Cataract surgery

Following intraocular lens surgery, including cataract surgery, a fit assessment may be considered once recovery is complete and the visual requirements are met with or without correction. Intraocular lenses should be monofocal and should not impair colour vision.

(3) Retinal surgery/retinal laser therapy

(i) After successful retinal surgery, applicants may be assessed as fit once the recovery is complete. Annual ophthalmological follow-up may be necessary. Longer periods may be acceptable after two years on recommendation of the ophthalmologist.

(ii) After successful retinal laser therapy, applicants may be assessed as fit provided an ophthalmological evaluation shows stability.

(4) Glaucoma surgery

A fit assessment may be considered six months after successful glaucoma surgery, or earlier if recovery is complete. Six-monthly ophthalmological examinations to follow up secondary complications caused by the glaucoma may be necessary.

(5) Extraocular muscle surgery

A fit assessment may be considered not less than six months after surgery and after a satisfactory ophthalmological evaluation.

(j) Visual correction

Spectacles should permit the licence holder to meet the visual requirements at all distances.

GM1 ATCO.MED.B.070 Visual system

COMPARISON OF DIFFERENT READING CHARTS (APPROXIMATE FIGURES)

(a) Test distance: 40 cm

Decimal	Nieden	Jäger	Snellen	N	Parinaud
1,0	1	2	1,5	3	2
0,8	2	3	2	4	3
0,7	3	4	2,5		
0,6	4	5	3	5	4
0,5	5	5		6	5
0,4	7	9	4	8	6
0,35	8	10	4,5		8
0,32	9	12	5,5	10	10
0,3	9	12		12	
0,25	9	12		14	
0,2	10	14	7,5	16	14
0,16	11	14	12	20	

(b) Test distance: 80 cm

Decimal	Nieden	Jäger	Snellen	N	Parinaud
1,2	4	5	3	5	4
1,0	5	5		6	5
0,8	7	9	4	8.0	6
0,7	8	10	4,5		8
0,63	9	12	5,5	10	10
0,6	9	12		12	10
0,5	9	12		14	10
0,4	10	14	7,5	16	14
0,32	11	14	12	20	14

AMC1 ATCO.MED.B.075 Colour vision

(a) Pseudoisochromatic plate testing alone is not sufficient.

(b) Colour vision should be assessed using means to demonstrate normal trichromacy.

GM1 ATCO.MED.B.075 Colour vision

The means to demonstrate normal trichromacy include:

(a) anomaloscopy (Nagel or equivalent). This test is considered passed if the colour match is trichromatic and the matching range is four scale units or less;

(b) Colour Assessment and Diagnosis (CAD) test.

AMC1 ATCO.MED.B.080 Otorhinolaryngology

(a) Examination

(1) An otorhinolaryngological examination includes:

(i) history;

(ii) clinical examination including otoscopy, rhinoscopy and examination of the mouth and throat;

(iii) clinical examination of the vestibular system.

(2) Ear, nose and throat (ENT) specialists involved in the aero-medical assessment of air traffic controllers should have an understanding of the functionality required by air traffic controllers whilst exercising the privileges of their licence(s).

(3) Where a full aero-medical assessment and functional check are needed, due regard should be paid to the operational environment in which the operational functions are undertaken.

(b) Hearing

(1) The follow-up of an applicant with hypoacusis should be decided by the licensing authority. If at the next annual test there is no indication of further deterioration, the normal frequency of testing may be resumed.

(2) An appropriate prosthetic aid may be a special headset with individual earpiece volume controls. Full functional and environmental assessments should be carried out with the chosen prosthetic equipment in use.

(c) Ear conditions

An applicant with a single dry perforation of non-infectious origin and which does not interfere with the normal function of the ear may be considered for a fit assessment.

(d) Vestibular disturbance

The presence of vestibular disturbance and spontaneous or positional nystagmus requires complete vestibular evaluation by a specialist. Significant abnormal caloric or rotational vestibular responses are disqualifying. At revalidation and renewal aero-medical examinations, abnormal vestibular responses should be assessed in their clinical context.

(e) Speech disorder

Applicants with a speech disorder should be assessed with due regard to the operational environment in which the operational functions are undertaken. Applicants with significant disorder of speech or voice should be assessed as unfit.

GM1 ATCO.MED.B.080 Otorhinolaryngology

HEARING

(a) Speech discrimination test: discriminating speech against other noise including other sources of verbal communication and ambient noise in the working environment, but not against engine noise.

(b) Functional hearing test: the objective of this test is to evaluate the controller's ability to hear the full range of communications that occur in an operational environment and not just through a headset or speaker.

(c) Prosthetic aid: the functional hearing test to be carried out with the prosthetic aid in use is to ensure that the individual is able to perform the functions of his/her licence and that the equipment is not adversely affected by interference from headsets or other factors.

(d) Pure-tone audiometry: testing at frequencies at or above 4 000 Hz will aid the early diagnosis of acoustic neuroma, noise-induced hearing loss (NIH) and other disorders of hearing. Particular attention should be paid in cases where there is a significant difference between thresholds of the left and right ear.

AMC1 ATCO.MED.B.085 Dermatology

(a) Referral to the licensing authority should be made if doubt exists about the fitness of an applicant with eczema (exogenous and endogenous), severe psoriasis, chronic infections, drug-induced or bullous eruptions or urticaria.

(b) Systemic effects of radiation or pharmacological treatment for a dermatological condition should be evaluated before a fit assessment may be considered.

(c) An applicant with a skin condition that causes pain, discomfort, irritation or itching may only be assessed as fit if the condition can be controlled and does not interfere with the safe exercise of the privileges of the licence.

(d) In cases where a dermatological condition is associated with a systemic illness, full consideration should be given to the underlying illness before a fit assessment may be considered.

AMC1 ATCO.MED.B.090 Oncology

(a) Applicants who have been diagnosed with a malignant disease may be assessed as fit provided:

(1) after primary treatment there is no evidence of residual malignant disease likely to interfere with the safe exercise of the privileges of the licence;

(2) time appropriate to the type of tumour has elapsed since the end of primary treatment;

(3) the risk of incapacitation from a recurrence or metastasis is sufficiently low;

(4) there is no evidence of short- or long-term sequelae from treatment. Special attention should be paid to applicants who have received anthracycline chemotherapy;

(5) satisfactory oncology follow-up reports are provided to the licensing authority.

(b) Applicants receiving ongoing chemotherapy or radiation treatment should be assessed as unfit.

(c) Applicants with a benign intracerebral tumour may be assessed as fit after satisfactory specialist and neurological evaluation and the condition does not compromise the safe exercise of the privileges of the licence.

(d) Applicants with pre-malignant conditions may be assessed as fit if treated or excised as necessary and there is a regular follow-up.

SUBPART C — AERO-MEDICAL EXAMINERS (AMEs)

AMC1 ATCO.MED.C.015 Training courses in aviation medicine
BASIC TRAINING COURSE

(a) Basic training course for AMEs

The basic training course for AMEs should consist of 60 hours of theoretical and practical training, including specific examination techniques.

(b) The learning objectives to acquire the necessary competences should include theoretical knowledge, risk management and decision-making principles in the following subjects. Demonstrations and practical skills should also be included, where appropriate.

(1) Introduction to aviation medicine;

(2) Basic aeronautical knowledge;

(3) Aviation physiology;

(4) Cardiovascular system;

(5) Respiratory system;

(6) Digestive system;

(7) Metabolic and endocrine system;

(8) Haematology;

(9) Genitourinary system;

(10) Obstetrics and gynaecology;

(11) Musculoskeletal system;

(12) Psychiatry;

(13) Psychology;

(14) Neurology;

(15) Visual system and colour vision;

(16) Otorhinolaryngology;

(17) Oncology;

(18) Incidents and accidents, escape and survival;

(19) Legislation, rules and regulations;

(20) Medication and air traffic control.

AMC2 ATCO.MED.C.015 Training courses in aviation medicine
ADVANCED TRAINING COURSE

(a) The advanced training course for AMEs should consist of another 60 hours of theoretical and practical training, including specific examination techniques.

(b) The syllabus for the advanced training course should concentrate on the specific air traffic control environment, and demonstrations and practical skills should be included, where appropriate. The course should cover at least the following subjects:

(1) Air traffic control working environment;

(2) Ophthalmology, including demonstration and practical training;

(3) Otorhinolaryngology, including demonstration and practical training;

(4) Clinical medicine;

(5) Cardiovascular system;

(6) Neurology;

(7) Psychiatry;

(8) Oncology;

(9) Metabolic and endocrine systems;

(10) Human factors in aviation with a specific focus on the air traffic control environment;

(11) Problematic use of substances.

(c) Practical training at an AeMC should be under the guidance and supervision of the Head of the AeMC.

(d) After the successful completion of the practical training, a report of demonstrated competence should be issued.

AMC1 ATCO.MED.C.025(b) Validity of AME certificates

REFRESHER TRAINING IN AVIATION MEDICINE

(a) During the period of authorisation certification, an AME should attend 20 hours of refresher training, including training with regard to the environment of air traffic control.

(b) A proportionate number of refresher training hours should be provided by, or conducted under the direct supervision of, the competent authority or the medical assessor.

(c) Attendance at scientific meetings and congresses and air traffic control observation may be credited by the competent authority for a specified number of hours against the training obligations of the AME, provided the medical assessor has assessed it in advance as being relevant for crediting purposes.

GM1 ATCO.MED.C.025(b) Validity of AME certificates

REFRESHER TRAINING IN AVIATION MEDICINE

Scientific meetings or congresses that may be credited by the competent authority:

(a) European Conference of Aerospace Medicine;

(b) International Academy of Aviation and Space Medicine annual congresses;

(c) Aerospace Medical Association annual scientific meetings; and

(d) Other scientific meetings.