

GM1 OR.OPS.CC.115(e) Conduct of training courses and associated checking

CREW RESOURCE MANAGEMENT (CRM)

1. CRM - General
 - a. Crew Resource Management should be the effective utilisation of all available resources (e.g. crew members, aircraft systems, and supporting facilities) to achieve safe and efficient operation.
 - b. The objective of CRM should be to enhance the communication and management skills of the crew member, as well as the importance of effective coordination and two-way communication between all crew members.
 - c. Operator's CRM training should reflect the culture of the operator, the scale and scope of the operation together with associated operating procedures and areas of operation which produce particular difficulties.
 - d. Accordingly, where required during CRM training, if relevant aircraft type-specific case studies are not available, then case studies relevant to the scale and scope of the operation should be considered.
2. General principles for CRM training for cabin crew
 - a. Cabin crew CRM training should focus on issues related to cabin crew duties, and therefore, should be different from flight crew CRM training. However, the co-ordination of the tasks and functions of flight crew and cabin crew should be addressed.
 - b. Whenever it is practicable to do so, combined training should be provided to flight crew and cabin crew, particularly senior cabin crew members, including feedback.
 - c. Where appropriate, CRM principles should be integrated into relevant parts of cabin crew training.
 - d. CRM training should include group discussions and the review of accidents and incidents (case- studies).
 - e. Whenever it is practicable to do so, relevant parts of CRM training should form part of the training conducted in cabin mock-ups or aircraft.
 - f. CRM training courses should be conducted in a structured and realistic manner.
 - g. There should be no assessment of CRM skills. Feedback from instructors or members of the group on individual performance should be given during training to the individuals concerned.

AMC1-OR.OPS.CC.125(b) Aircraft type-specific training and operator conversion training

TRAINING PROGRAMME– AIRCRAFT TYPE-SPECIFIC TRAINING

The following aircraft type-specific training elements should be covered as relevant to the aircraft type:

1. Aircraft general description
 - a. type of aircraft; principal dimensions; narrow or wide bodied; single or double deck;
 - b. typical speed/altitude/range;
 - c. typical passenger seating capacity (certified capacity);
 - d. typical flight crew number and typical minimum number of required cabin crew;

- e. cabin doors location and sill height;
- f. cargo and un-pressurised areas as relevant;
- g. aircraft systems – general: auxiliary power unit (APU)/aircraft electrical power/air conditioning and pressurisation;
- h. flight crew compartment presentation- general: pilot seats and their mechanism; cockpit exits; storage;
- i. typical cabin crew stations;
- j. passenger seats-general presentation;
- k. flight crew compartment security-general: door components and use;
- l. access to avionics bay where relevant;
- m. lavatories- general: doors; systems; emergency equipment, calls and signs;
- n. galleys- general: appliances; water and waste; control panels; calls and signs; and
- o. least risk bomb location.

2. Safety and emergency equipment and systems installed

Each cabin crew member should receive realistic training on, and demonstration of, the location and use of all aircraft type-specific safety and emergency equipment including the following:

- a. slides, and where non-self-supporting slides are carried, the use of any associated ropes;
- b. life rafts and slide rafts, including the equipment attached to, and/or carried in, the raft;
- c. drop-out oxygen system;
- d. communication equipment; and
- e. all other cabin equipment and systems installed relevant to cabin crew duties.

3. Operation of doors and exits

This training should be conducted in a representative training device or in the actual aircraft and should include failure of power assist systems where fitted and the action and forces required to operate and deploy evacuation slides. The demonstration of the operation of the other doors and exits should include the security door of the flight crew compartment where installed.

4. Fire and smoke protection equipment

Each cabin crew member should be trained in using fire and/or smoke protection equipment where fitted.

5. Evacuation slide training:

- a. each cabin crew member should descend an evacuation slide from a height representative of the aircraft main deck sill height;
- b. the slide should be fitted to a representative training device or to the actual aircraft; and
- c. a further descent should be made when the cabin crew member qualifies on an aircraft type in which the main deck exit sill height differs significantly from any aircraft type previously operated.

6. Operation of equipment related to pilot incapacitation

The training should cover any type-specific elements or conditions relevant to cabin crew actions to be taken in case of pilot incapacitation. Each cabin crew member

should be trained to operate all equipment that must be used in case of pilot incapacitation.

AMC1-OR.OPS.CC.125(c) Aircraft type-specific training and operator conversion training

TRAINING PROGRAMME – OPERATOR CONVERSION TRAINING

The following operator-specific training elements should be covered as relevant to the aircraft type:

1. Description of the cabin configuration

The description should cover all elements specific to the operator's cabin configuration and any differences with those previously covered in accordance with AMC1-OR.OPS.CC.125(b), including:

- a. cabin crew seats (including direct view) location/restraint systems/control panels;
- b. passenger seats-presentation;
- c. flight crew compartment security door-components/use;
- d. designated stowage areas;
- e. lavatories location/lavatory doors and lavatory systems/emergency equipment in the lavatory/calls and signs;
- f. galley-location/appliances/water and waste system, including shut off, sinks, drains/stowage/control panels/calls;
and where applicable:
- g. crew rest areas- location/systems/controls/safety equipment;
- h. cabin dividers/curtains/partitions;
- i. lift location/use/controls;
- j. stowage for the containment of waste; and
- k. passenger hand rail system or alternative means.

2. Safety and emergency equipment

Each cabin crew member should receive realistic training on and demonstration of the location and use of all safety and emergency equipment carried including:

- a. lifejackets, infant lifejackets and flotation cots;
- b. first-aid and drop-out oxygen, including supplementary systems;
- c. fire extinguishers and protective breathing equipment (PBE);
- d. fire axe or crow-bar;
- e. emergency lights including torches;
- f. communication equipment, including megaphones;
- g. sliderafts, liferafts, survival packs and their contents;
 - i. slides, and where non-supporting slides are carried the use of any associated ropes."
 - ii. slideraft, including the equipment attached to and anchored on, or carried in the raft."
- h. pyrotechnics (actual or representative devices);
- i. first-aid kits, emergency medical kits and their contents; and

j. other portable safety equipment where applicable.

3. Normal and emergency procedures

Each cabin crew member should be trained to the operator's normal and emergency procedures as applicable with particular emphasis on the following:

- a. passenger briefing, safety demonstration and cabin surveillance;
- b. severe air turbulence;
- c. slow/non pressurisation and sudden decompression, including the donning of portable oxygen equipment by each cabin crew member; and
- d. other in-flight emergencies.

4. Passenger handling and crowd control

Training should be provided on the practical aspects of passenger preparation and handling, as well as crowd control, in various emergency situations as applicable to the operator's aircraft cabin configuration, and should cover the following:

- a. communications between flight crew and cabin crew and use of all communications equipment, including the difficulties of coordination in a smoke-filled environment;
- b. verbal commands;
- c. the physical contact that may be needed to encourage people out of an exit and onto a slide;
- d. the redirection of passengers away from unusable exits;
- e. the marshalling of passengers away from the aircraft;
- f. the evacuation of special categories of passengers with emphasis on passengers with disabilities or reduced mobility; and
- g. authority and leadership.

5. Fire and smoke training

- a. Each cabin crew member should receive realistic and practical training in the use of all fire-fighting equipment including protective clothing representative of that carried in the aircraft;
- b. Each cabin crew member should:
 - i. be trained in extinguishing an actual fire characteristic of an aircraft interior fire except that, in the case of halon extinguishers, an alternative extinguishing agent may be used;
 - ii. be trained in the donning and use of protective breathing equipment in an enclosed simulated smoke-filled environment with particular emphasis on identifying the actual source of fire and smoke; and
 - iii. individually extinguish an actual fire and exercise the donning and use of PBE in an enclosed simulated smoke-filled environment."

6. Evacuation procedures

Training should include all operator's procedures applicable to planned or unplanned evacuations on land and water including where relevant the additional actions required from cabin crew members responsible for a pair of exits and the recognition of when exits are unusable or when evacuation equipment is unserviceable.

7. Pilot incapacitation procedures

Unless the minimum flight crew is more than two, each cabin crew member should be trained in the procedure for pilot incapacitation. Training in the use of flight crew

checklists, where required by the operator's standard operating procedures (SOP's), should be conducted by a practical demonstration.

8. Crew resource management (CRM)
 - a. Each cabin crew member should complete the operator's CRM training covering the applicable training elements specified in AMC1-OR.OPS.CC.115(e)(3)CRM training table.
 - b. When a cabin crew member undertakes a type training course on another aircraft type, the applicable training elements specified in CRM Training Table should be covered.
 - c. The operator's CRM training and aircraft type CRM training should be conducted by at least one cabin crew CRM instructor.

AMC1-OR.OPS.CC.125/OR.OPS.CC.130 Aircraft type-specific training and operator conversion training/ Differences training

TRAINING PROGRAMMES

The programmes of aircraft type-specific training, operator conversion training and differences training should be determined taking into account the cabin crew member's previous training as documented in the training records of the cabin crew member concerned.

AMC1-OR.OPS.CC.135 Familiarisation

FAMILIARISATION FLIGHTS AND AIRCRAFT VISITS

1. For non-commercial operations, the cabin crew member should be assigned to operate at least two familiarisation flights under supervision on the aircraft type to be operated, or comply with one of the following provisions.
2. For commercial air transport operations, familiarisation of cabin crew to a new aircraft type or variant should be completed in accordance with the following as relevant:

- a. New entrant cabin crew

Each new entrant cabin crew member having no previous comparable operating experience should participate:

- i. in a visit as described in point 4. to the aircraft to be operated; and
- ii. in familiarisation flights as described in point 3.

- b. Cabin crew operating on a subsequent aircraft type

A cabin crew member assigned to operate on a subsequent aircraft type with the same operator should participate either:

- i. in a familiarisation flight as described in point 3; or
- ii. in a visit as described in point 4 to the aircraft type to be operated.

3. Familiarisation flights

- a. During familiarisation flights, the cabin crew member should be additional to the minimum number of cabin crew required by OR.OPS.CC.100, and OR.OPS.CC.200if applicable.

- b. Familiarisation flights should be:

- i. conducted under the supervision of the senior cabin crew member;
- ii. structured and involve the cabin crew member in the participation of safety related pre-flight, in-flight and post-flight duties;

- iii. operated with the cabin crew member wearing the operator's cabin crew uniform; and
- iv. recorded in the training record of each cabin crew member.

4. Aircraft visits

- a. The purpose of aircraft visits is to familiarise the cabin crew member with the aircraft environment and its equipment. Accordingly, aircraft visits should be conducted by suitably qualified persons. The aircraft visit should provide an overview of the aircraft's exterior, interior and systems including the following:
 - i. interphone and public address systems;
 - ii. evacuation alarm systems;
 - iii. emergency lighting;
 - iv. smoke detection systems;
 - v. safety/emergency equipment;
 - vi. flight crew compartment;
 - vii. cabin crew stations;
 - viii. lavatories;
 - ix. galleys, galley security and water shut-off;
 - x. cargo areas if accessible from the passenger compartment during flight;
 - xi. circuit breaker panels located in the passenger compartment;
 - xii. crew rest areas; and
 - xiii. exit location and its environment.
- b. An aircraft familiarisation visit may be combined with aircraft type-specific training or operator conversion training required by OR.OPS.CC.125.

AMC1-OR.OPS.CC.140 Recurrent training

TRAINING PROGRAMMES

1 Elements of annual recurrent training programme

- a. Training on the location and handling of safety and emergency equipment should include all relevant oxygen systems, and any equipment such as defibrillators if carried on-board.
- b. Training on emergency procedures should cover pilot incapacitation procedures and crowd control techniques.
- c. Crew resource management training should satisfy the following:
 - i. the applicable training elements in AMC1-OR.OPS.CC.115(e)CRM Training Table should be covered within a three year cycle to the level required by Column 'Operator's Annual Recurrent CRM Training'.
 - ii. the definition and implementation of the programme should be managed by a cabin crew CRM instructor.
 - iii. when CRM training is provided by stand-alone modules, it should be conducted by at least one cabin crew CRM instructor.

2. Additional triennial elements of training
 - a. Training on operation of normal and emergency exits should be conducted in an aircraft or representative training device; and cover failure of power assist systems where fitted. This is to include the action and forces required to operate and deploy evacuation slides, and additional training when relevant for cabin crew members responsible for a pair of exits.
 - b. Training in the use of all fire-fighting equipment, including protective clothing, representative of that carried in the aircraft should include individual practice by each cabin crew member to extinguish a fire characteristic of an aircraft interior fire except that, in the case of halon extinguishers, an alternative extinguishing agent may be used. Training should place particular emphasis on identifying the actual source of fire or smoke.

AMC1-OR.OPS.CC.145 Refresher training

TRAINING PROGRAMME

1. Training on procedures should include pilot incapacitation and crowd control as applicable to the aircraft type; and
2. Operation of doors and exits by each cabin crew member should include failure of power assist systems where fitted as well as the action and forces required to operate and deploy evacuation slides.

GM1-OR.OPS.CC.145 Refresher training

FREQUENCY OF REFRESHER TRAINING

For aircraft with complex equipment or procedures, the operator should consider the need for refresher training to be completed by cabin crew members who have been absent of flying duties for less than six months.

CHAPTER 2 - ADDITIONAL REQUIREMENTS FOR COMMERCIAL AIR TRANSPORT

AMC1-OR.OPS.CC.205(b) Minimum number of cabin crew in unforeseen circumstances and during ground operations

IN UNFORESEEN CIRCUMSTANCES

When the number of cabin crew is reduced below the applicable minimum required cabin crew, for example in the event of incapacitation or unavailability of cabin crew in case of unforeseen circumstances, the procedures established in the operations manual should take into consideration at least the following:

1. reduction of passenger numbers;
2. reseating of passengers with due regard to exits and other applicable limitations; and
3. relocation of cabin crew taking into account the factors specified in AMC1-OR.OPS.CC.100-CAT and any change of procedures.

DURING GROUND OPERATIONS WITH PASSENGERS ON BOARD

During ground operations, when reducing the applicable minimum required number of cabin crew, an operator should ensure that the procedures required by OR.OPS.CC.205 specify that:

1. electrical power is available on the aircraft;
2. a means of initiating an evacuation is available to the senior cabin crew member or at least one member of the flight crew is in the flight crew compartment;
3. cabin crew stations and associated duties are specified in the operations manual; and
4. cabin crew remain aware of the position of servicing and loading vehicles at and near the exits;

Additionally in the case of passengers embarkation,

5. the senior cabin crew member should have performed the pre-boarding safety briefing to the cabin crew; and
6. the pre-boarding cabin checks should have been completed.

GM1-OR.OPS.CC.210(c) Conditions for assignment to duties

UNIFORM

The uniform to be worn by operating cabin crew should be such as not to impede the performance of their duties as required for the safety of passengers and flight during operations, and should allow passengers to identify the operating cabin crew including in an emergency situation.

AMC1-OR.OPS.CC.250 Operations on more than one type or variant

DETERMINATION OF SIMILARITIES FOR TYPES AND VARIANTS RELATED TO OPERATOR'S SPECIFICS

1. When determining similarity of location and type of portable safety and emergency equipment the following factors should be assessed to justify the finding of similarity:
 - a. all portable safety and emergency equipment is stowed in the same, or in exceptional circumstances, in substantially the same location;
 - b. all portable safety and emergency equipment requires the same method of operation;
 - c.. portable safety and emergency equipment includes:
 - i. fire fighting equipment;
 - ii. protective breathing equipment (PBE);
 - iii. oxygen equipment;
 - iv. crew lifejackets;
 - v. torches;
 - vi. megaphones;
 - vii. first-aid equipment;
 - viii. survival and signalling equipment; and
 - ix. other safety and emergency equipment where applicable.

2. The emergency procedures should include at least the following:
 - a. land and water evacuation;
 - b. in-flight fire;
 - c. slow/non-pressurisation and decompression; and
 - d. pilot incapacitation.

GM1-OR.OPS.CC.250 Operations on more than one type or variant

SAFETY BRIEFING FOR CABIN CREW

When changing aircraft type or variant during a series of flight sectors, the cabin crew safety briefing should include a representative sample of type-specific normal and emergency procedures and safety and emergency equipment applicable to the actual aircraft to be operated for the immediately subsequent flight sector.

AMC1-OR.OPS.CC.260(b) Senior cabin crew member

TRAINING PROGRAMME

The senior cabin crew member training course should at least cover all the following elements:

1. Pre-flight briefing:
 - a. operating as a crew;
 - b. allocation of cabin crew stations and responsibilities; and
 - c. consideration of the particular flight, including aircraft type, equipment, area and type of operation including ETOPS, and special categories of passengers with particular attention to persons with disability or reduced mobility, infants and stretcher cases.
2. Cooperation within the crew:
 - a. discipline, responsibilities and chain of command;
 - b. importance of coordination and communication; and
 - c. pilot incapacitation.
3. Review of operator requirements and legal requirements:
 - a. passenger safety briefing, safety cards;
 - b. securing of galleys;
 - c. stowage of cabin baggage;
 - d. electronic equipment;
 - e. procedures when fuelling with passengers on board;
 - f. turbulence, and
 - g. documentation.

4. Accident and incident reporting

5. Human factors and crew resource management

The operator should ensure that all applicable elements specified in AMC1-OR.OPS.CC.115(e)(3) CRM training table are integrated into the training and covered to the level required by Column 'Senior Cabin Crew Course'.

6. Flight and duty time limitations and rest requirements.

GM1-OR.OPS.CC.260(b)(5) Senior cabin crew member

TRAINING ON HUMAN FACTORS AND CREW RESSOURCE MANAGEMENT (CRM)

Whenever practicable, training should include the participation of senior cabin crew members in flight crew line oriented flying training (LOFT) exercises.

AMC1-OR.OPS.CC.260(c) Senior cabin crew member

RESPONSIBILITY TO THE COMMANDER

When the level of turbulence so requires, and in the absence of any instructions from the flight crew, the senior cabin crew member should discontinue non-safety-related duties and advise the flight crew of the level of turbulence being experienced and the need for the fasten seat belt signs to be switched on. This should be followed by the cabin crew securing the passenger cabin and other applicable areas.

SECTION VII – TECHNICAL CREW MEMBER IN HEMS, HHO OR NVIS OPERATIONS

GM1-OR.OPS.TC.105 Conditions for assignment to duties

GENERAL

1. A technical crew member in HEMS, HHO or NVIS operations should undergo an initial medical examination or assessment and, if applicable, a re-assessment before undertaking duties.
2. Any medical assessment or re-assessment should be carried out according to best aero-medical practice by a medical practitioner who has sufficient detailed knowledge of the applicant's medical history.
3. An operator should maintain a record of medical fitness for each technical crew member.
4. Technical crew members should:
 - a. be in good health;
 - b. be free from any physical or mental illness which might lead to incapacitation or inability to perform crew duties;
 - c. have normal cardio respiratory function;
 - d. have normal central nervous system;
 - e. have adequate visual acuity 6/9 with or without glasses;
 - f. have adequate hearing; and
 - g. have normal function of ear, nose and throat.

AMC1-OR.OPS.TC.110 Training and Checking

GENERAL

1. Elements of training which require individual practice may be combined with practical checks.

2. The checks should be accomplished by the method appropriate to the type of training including:
 - a. practical demonstration;
 - b. computer-based assessment;
 - c. in-flight checks; and/or
 - d. oral or written tests.

AMC1-OR.OPS.TC.115 Initial training

ELEMENTS

1. The elements of initial training mentioned in OR.OPS.TC.115 should include in particular:
 - a. General theoretical knowledge on aviation and aviation regulations relevant to duties and responsibilities:
 - i. The importance of crew members performing their duties in accordance with the operations manual;
 - ii. Continuing competence and fitness to operate as a crew member with special regard to flight and duty time limitations and rest requirements;
 - iii. An awareness of the aviation regulations relating to crew members and the role of the competent and inspecting authority;
 - iv. General knowledge of relevant aviation terminology, theory of flight, passenger distribution, meteorology and areas of operation;
 - v. Pre-flight briefing of the crew members and the provision of necessary safety information with regard to their specific duties;
 - vi. The importance of ensuring that relevant documents and manuals are kept up-to-date with amendments provided by the operator;
 - vii. The importance of identifying when crew members have the authority and responsibility to initiate an evacuation and other emergency procedures; and
 - viii. The importance of safety duties and responsibilities and the need to respond promptly and effectively to emergency situations.
 - b. Fire and smoke training:
 - i. reactions to emergencies involving fire and smoke and identification of the fire sources;
 - ii. The classification of fires and the appropriate type and techniques of application of extinguishing agents, the consequences of misapplication, and of use in a confined space; and
 - iii. The general procedures of ground-based emergency services at aerodromes.
 - c. When conducting extended overwater operations, water survival training, including the use of personal flotation equipment.
 - d. Before first operating on an aircraft fitted with life-rafts or other similar equipment, training on the use of this equipment, including practice in water.
 - e. Survival training appropriate to the areas of operation, (e.g. polar, desert, jungle, sea or mountain).

- f. Aero-medical aspects and first aid, including:
 - i. Instruction on first aid and the use of first-aid kits; and
 - ii. The physiological effects of flying.
- g. Effective communication between technical crew members and flight crew members including common language and terminology.
- h. Relevant CRM elements of AMC1- and AMC2-OR.OPS.FC.115 & .215.

AMC1-OR.OPS.TC.120 Operator conversion training and OR.OPS.TC.125 Differences training

ELEMENTS

1. Operator conversion training mentioned in OR.OPS.TC.120 (b) and differences training mentioned in OR.OPS.TC.125 (a) should include:
 - a. Fire and smoke training, including practical training in the use of all fire fighting equipment as well as protective clothing representative of that carried in the aircraft. Each technical crew member should:
 - i. extinguish a fire characteristic of an aircraft interior fire except that, in the case of Halon extinguishers, an alternative extinguishing agent may be used; and
 - ii. practise the donning and use of protective breathing equipment (when fitted) in an enclosed, simulated smoke-filled environment.
 - b. Practical training on operating and opening all normal and emergency exits for passenger evacuation in an aircraft or representative training device and demonstration of the operation of all other exits.
 - c. Evacuation procedures and other emergency situations, including:
 - i. Recognition of planned or unplanned evacuations on land or water. This training should include recognition of unusable exits or unserviceable evacuation equipment;
 - ii. In-flight fire and identification of fire source; and
 - iii. Other in-flight emergencies.
 - d. When the flight crew is more than one, training on assisting if a pilot becomes incapacitated, including a demonstration of:
 - i. The pilot's seat mechanism;
 - ii. Fastening and unfastening the pilot's seat harness;
 - iii. Use of the pilot's oxygen equipment, when applicable; and
 - iv. Use of pilots' checklists.
 - e. Training on, and demonstration of, the location and use of safety equipment including the following:
 - i. Life-rafts, including the equipment attached to, and/or carried in, the raft, where applicable;
 - ii. Lifejackets, infant lifejackets and flotation cots, where applicable;
 - iii. Fire extinguishers;
 - iv. Fire axe or crow-bar;
 - v. Emergency lights including portable lights;
 - vi. Communication equipment, including megaphones;

- vii. Survival packs, including their contents;
 - viii. Pyrotechnics (actual or representative devices);
 - ix. First-aid kits, their contents and emergency medical equipment; and
 - x. Other safety equipment or systems, where applicable.
- f. Training on passenger briefing/safety demonstrations and preparation of passengers for normal and emergency situations.
 - g. Training on the use of dangerous goods, if applicable.
 - h. Task-specific training.

AMC2-OR.OPS.TC.120 Operator conversion training and OR.OPS.TC.125 Differences training

GENERAL

1. An operator should determine the content of the conversion or differences training taking account of the technical crew member's previous training as documented in the technical crew member's training records.
2. Aircraft conversion or differences training should be conducted according to a syllabus and include the use of relevant equipment and emergency procedures and practice on a representative training device or on the actual aircraft.
3. The operator should specify in the operations manual the maximum number of types or variants that can be operated by a technical crew member.

AMC1-OR.OPS.TC.135 Recurrent training

ELEMENTS

1. The 12-month period mentioned in OR.OPS.TC.135 (a) should be counted from the last day of the month when the first checking was made. Further training and checking should be undertaken within the last three calendar months of that period. The new 12-month period should be counted from the original expiry date.
2. The recurrent practical training should include every year:
 - a. emergency procedures including pilot incapacitation;
 - b. evacuation procedures;
 - c. touch-drills by each technical crew member for opening normal and emergency exits for (passenger) evacuation;
 - d. the location and handling of emergency equipment and the donning by each technical crew member of lifejackets and protective breathing equipment (PBE), when applicable;
 - e. first aid and the contents of the first-aid kit(s);
 - f. stowage of articles in the cabin;
 - g. use of dangerous goods, if applicable;
 - h. incident and accident review;
 - i. crew Resource Management. All major topics of the initial CRM training should be covered over a period not exceeding three years.

3. Recurrent training should include every three years:
 - a. practical training on operating and opening all normal and emergency exits for passenger evacuation in an aircraft or representative training device and demonstration of the operation of all other exits;
 - b. practical training in the use of all fire fighting equipment as well as protective clothing representative of that carried in the aircraft. Each technical crew member should:
 - i. extinguish a fire characteristic of an aircraft interior fire except that, in the case of Halon extinguishers, an alternative extinguishing agent may be used; and
 - ii. practise the donning and use of protective breathing equipment (when fitted) in an enclosed, simulated smoke-filled environment.
 - c. Use of pyrotechnics (actual or representative devices); and
 - d. Demonstration of the use of the life-raft, where fitted.

AMC1-OR.OPS.TC.140 Refresher training

ELEMENETS

1. Refresher training may include familiarisation flights.
2. Refresher training should include at least the following:
 - a. Emergency procedures, including pilot incapacitation;
 - b. Evacuation procedures;
 - c. Practical training on operating and opening all normal and emergency exits for passenger evacuation in an aircraft or representative training device and demonstration of the operation of all other exits; and
 - d. The location and handling of emergency equipment, and the donning of lifejackets, and protective breathing equipment, when applicable.

Subpart ATO - Approved Training Organisations

SECTION I – GENERAL

AMC1-OR.ATO.105 Application

APPLICATION FORM

APPLICATION FORM FOR AN ATO CERTIFICATE

N°	Question	Supplementary information
1.	Name of training organisation under which the activity is to take place	address, fax number, e-mail, URL
2.	Training courses offered	theory and/or flight training
3.	Name of head of training	type and number of licence full/part-time
4.	Name of chief flight instructor	as (3)
5.	Name of chief theoretical knowledge instructor	as (3)
6.	Name of flight instructor(s), where applicable	as (3)
7.	Aerodrome(s) / operating site(s) to be used	IFR approaches, if applicable night flying, if applicable air traffic control flight testing facilities, if applicable data reply facilities, if applicable
8.	Flight operations accommodation	location, number and size of rooms
9.	Theoretical instruction facilities	location, number and size of rooms
10.	Description of training devices(as applicable)	FFS, FNPT I, II and III, FTD 1, 2 and 3, and 3, and BITD

11.	Description of aircraft	Class/type(s) of aircraft registration of aircraft IFR equipped, if applicable Flight test instrumentation, if applicable
12.	Proposed administration and manuals : (submit with application if required)	(a) course programmes (b) training records (c) operations manual (d) training manual
13.	Details of proposed compliance monitoring system	

Note 1: If answers to any of the above questions are incomplete, the applicant should provide full details of alternative arrangements separately.

I, (name), on behalf of (name of training organisation) certify that all the above named persons are in compliance with the applicable requirements and that all the above information given is complete and correct.

(Date) (Signature)

AMC1-OR.ATO.110(a) Personnel requirements

HEAD OF TRAINING

The nominated head of training (HT) should have the overall responsibility to ensure that the training is in compliance with the appropriate requirements. In an ATO providing training courses for different aircraft categories the HT shall be supported by one or more nominated deputy HT(s) for certain flight training courses in order to assist.

AMC1-OR.ATO.110(b) Personnel requirements

THEORETICAL KNOWLEDGE INSTRUCTORS

Theoretical knowledge instructors should, before appointment, prove their competency by giving a test lecture based on material they have developed for the subjects they are to teach.

AMC1-OR.ATO.120(a)(1);(2) Record keeping

ATOS PROVIDING TRAINING ONLY FOR THE LAPL, PPL, SPL OR BPL

The details of ground, flight and flight simulation instruction given to a specific individual student and the detailed progress reports from instructors may be kept also in a student's progress card. This progress card should contain all the exercises of the training syllabus. The instructors should sign this card if a certain exercise has been completed or a specific assessment has been conducted.

AMC1-OR.ATO.125 Training programme

GENERAL

Flight training in an FSTD and theoretical knowledge instruction should be phased in such a manner as to ensure that students are able to apply to flight exercises the knowledge gained on the ground. Arrangements should be made so that problems encountered during instruction can be resolved during subsequent training.

AMC2-OR.ATO.125 Training programme

TYPE RATING COURSES – AEROPLANES

1. Introduction.
 - a. When developing the training programme for a type rating course, in addition to complying with the standards included in the OSD, as established in accordance with Part-21 for the applicable type, the ATO should also follow any further recommendations contained therein.
 - b. A type rating course should, as far as possible, provide for a continual process of ground, FSTD and flight training to enable the student to assimilate the knowledge and skills required to operate a specific aircraft type safely and efficiently. The student's ability to do this should be determined by the demonstration of a satisfactory level of theoretical knowledge of the aircraft determined by progressive checking of knowledge and examination, progressive assessment by the ATO during flight training and the successful completion of a practical skill test with an examiner.
 - c. A type rating course should normally be conducted as a single, full-time course of study and training. However, in the situation where the course is intended to enable a pilot to fly a further aircraft type while continuing to fly a current type, such as to enable mixed fleet flying with the same operator, some elements of the theoretical knowledge course conducted by self-study may be undertaken while the student continues to fly the current type.
2. Variants.
 - a. Familiarisation training: Where an aeroplane type rating also includes variants of the same aircraft type requiring familiarisation training, the additional familiarisation training may be included in the theoretical knowledge training of the initial type rating course. Flight training should be conducted on a single variant within the type.
 - b. Differences training: Where an aeroplane type rating also includes variants of the same aircraft type for which difference training is required, the initial training course should be directed towards a single variant. Additional training to operate other variants within the same type rating should be completed after successful completion of the initial type rating course, although elements of this differences training may be undertaken at appropriate stages of the initial course, with the agreement of the competent authority.
3. Programme of theoretical knowledge and flight training.
 - a. The training programme should specify the time allocated to theoretical knowledge training, FSTD training and, if not approved for zero flight-time training (ZFTT), the aeroplane. The initial type rating course should be programmed on the basis that the student has the minimum licensing and experience requirements for entry to the course. For a first type rating on a multi-pilot aeroplane, the course should also provide for consolidation and type-specific training in those elements of basic MCC training relevant to the type or variant.

- b. If an ATO wishes to provide a training course that includes credit for previous experience on similar types of aircraft, such as those with common systems or operating procedures with the new type, the entry requirements to such courses should be specified by the ATO and should define the minimum level of experience and qualification required of the flight crew member.
- c. An ATO is permitted to contract elements of training to a third party training provider. In such cases the contracted organisation should normally be approved to conduct such training. When the contracted organisation is not an ATO, the competent authority should, within the approval process of the ATO, include the contracted organisation and be satisfied that the standard of training intended to be given meets the requirements. The other obligations of the ATO, such as student progress monitoring and an adequate management system can be exercised by the ATO seeking approval and which retains responsibility for the whole course.

GROUND TRAINING

4. Syllabus.

The ground training syllabus should provide for the student to gain a thorough understanding of the operation, the function and, if appropriate, the abnormal and emergency operation of all aircraft systems. This training should also include those systems essential to the operation of the aircraft, such as 'fly-by-wire' flight control systems, even if the flight crew have little or no control of their normal or abnormal operation.

5. Theoretical knowledge instruction.

The theoretical knowledge instruction training should meet the general objectives of (but not be limited to):

- a. giving the student a thorough knowledge of the aircraft structure, powerplant and systems, and their associated limitations, including mass and balance, aircraft performance and flight planning considerations;
- b. giving the student a knowledge of the positioning and operation of the cockpit controls and indicators for the aircraft and its systems;
- c. giving the student an understanding of system malfunctions, their effect on aircraft operations and interaction with other systems; and
- d. giving the student the understanding of normal, abnormal and emergency procedures

6. Facilities and training aids.

The ATO should provide adequate facilities for classroom instruction and have available appropriately qualified and experienced instructors. Training aids should enable students to gain practical experience of the operation of systems covered by the theoretical knowledge syllabus and, in the case of multi-pilot aeroplanes, enable such practical application of the knowledge to be carried out in a multi-crew environment. Facilities should be made available for student self-study outside the formal training programme.

7. Computer-based training (CBT).

CBT provides a valuable source of theoretical instruction, enabling the students to progress at their own pace within specified time limits. Many such systems ensure that syllabus subjects are fully covered and progress can be denied until a satisfactory assimilation of knowledge has been demonstrated. Such systems may allow self-study or distance learning, if they incorporate adequate knowledge testing procedures. When CBT is used as part of the theoretical knowledge instruction phase, the student should also have access to a suitably qualified instructor able to assist with areas of difficulty for the student.

8. Self-study and distance learning.

Elements of the theoretical knowledge syllabus may be adequately addressed by distance learning, if approved, or self-study, particularly when utilising CBT. Progress testing, either by self-assessed or instructor-evaluated means should be included in any self-study programme. If self-study or distance learning is included in the theoretical knowledge training, the course should also provide for an adequate period of supervised consolidation and knowledge testing.

9. Progress tests and final theoretical knowledge examination.

- a. The theoretical knowledge training programme should provide for progressive testing of the assimilation of the required knowledge. This testing process should also provide for retesting of syllabus items so that a thorough understanding of the required knowledge is assured. This should be achieved by intervention by a qualified instructor or, if using CBT with a self-testing facility, and by further testing during the supervised consolidation phase of the ground course.
- b. The final theoretical knowledge examination should cover all areas of the theoretical knowledge syllabus. The final examination should be conducted as a supervised written (including computer-based) knowledge test without reference to course material. The pass mark of 75% assumes the achievement of satisfactory levels of knowledge during the progressive phase tests of the course. The student should be advised of any areas of lack of knowledge displayed during the examination and, if necessary, given remedial instruction.

A successful pass of the theoretical knowledge course and final examination should be a pre-requisite for progression to the flight training phase of the type rating course.

FLIGHT TRAINING

10. Flight simulation training devices (FSTDs).

A type rating course for a multi-pilot aeroplane should include FSTD training.

The amount of training required when using FSTDs will depend on the complexity of the aeroplane concerned, and to some extent on the previous experience of the pilot. Except for those courses giving credit for previous experience (3.b.), a minimum of 32 hours of FSTD training should be programmed for a crew of a multi-pilot aeroplane, of which at least 16 hours should be in a FFS operating as a crew. FFS time may be reduced if other qualified FSTDs used during the flight training programme accurately replicate the cockpit environment, operation and aeroplane response. Such FSTDs may typically include FMC training devices using hardware and computer programmes identical to those of the aeroplane.

11. Aeroplane training with full flight simulator.

- a. With the exception of courses approved for ZFTT, certain training exercises normally involving take-off and landing in various configurations should be completed in the aeroplane rather than an FFS. For multi-pilot aeroplanes where the student pilot has more than 500 hours of MPA experience in aeroplanes of similar size and performance, these should include at least four landings of which at least one should be a full-stop landing, unless otherwise specified in the OSD established in accordance with Part-21, when available. In all other cases the student should complete at least six landings. This aeroplane training may be completed after the student pilot has completed the FSTD training and has successfully undertaken the type rating skill test, provided it does not exceed two hours of the flight training course.
- b. Courses approved for ZFTT

During the specific simulator session before line flying under supervision (LIFUS), consideration should be given to varying conditions, for example:

- i. runway surface conditions;
- ii. runway length;
- iii. flap setting;
- iv. power setting;
- v. crosswind and turbulence conditions; and
- vi. MTOW and MLW.

The landings should be conducted as full-stop landings. The session should be flown in normal operation.

Special attention should be given to the taxiing technique.

- a. A training methodology should be agreed with the competent authority that ensures the trainee is fully competent with the exterior inspection of the aeroplane before conducting such an inspection un-supervised.
- b. The LIFUS should be performed as soon as possible after the specific FFS session.
- c. The licence endorsement should be entered on the licence after the skill test, but before the first four take-offs and landings in the aeroplane. At the discretion of the competent authority, provisional or temporary endorsement and any restriction should be entered on the licence.

Where a specific arrangement exists between the ATO and the commercial air transport operator, the operator proficiency check (OPC) and the ZFTT specific details should be conducted using the operator's standard operational procedures (SOPs).

12. Aeroplane without full flight simulator.

- a. Flight training conducted solely in an aeroplane without the use of FSTDs cannot cover the crew resource management (CRM) and multi-crew cockpit (MCC) aspects of MPA flight training, and for safety reasons cannot cover all emergency and abnormal aircraft operation required for the training and skill test. In such cases, the ATO should demonstrate to the competent authority that adequate training in these aspects can be achieved by other means. For training conducted solely on a multi-pilot aeroplane where two pilots are trained together without the use of a flight simulator, a minimum of 8 hours of flight training as pilot flying (PF) for each pilot should normally be required. For training on a single-pilot aeroplane, 10 hours of flight training should normally be required. It is accepted that for some relatively simple single or multi-engine aircraft without systems such as pressurisation, FMS or electronic cockpit displays, this minimum may be reduced.
- b. Aeroplane training normally involves an inherent delay in achieving an acceptable flight situation and configuration for training to be carried out in accordance with the agreed syllabus. These could include ATC or other traffic delay on the ground prior to take-off, the necessity to climb to height or transit to suitable training areas and the unavoidable need to physically reposition the aircraft for subsequent or repeat manoeuvres or instrument approaches. In such cases it should be ensured that the training syllabus provides adequate flexibility to enable the minimum amount of required flight training to be carried out.

SKILL TEST

- 13. Upon completion of the flight training, the pilot will be required to undergo a skill test with an examiner to demonstrate adequate competency of aircraft operation for issue of the type rating. The skill test should be separate from the flight training syllabus, and provision for it cannot be included in the minimum requirements or training hours of the agreed flight training programme. The skill test may be conducted in a flight simulator, the aeroplane or, in exceptional circumstances, a combination of both.

COURSE COMPLETION CERTIFICATE

14. The HT, or a nominated representative, should certify that all training has been carried out before an applicant undertakes a skill test for the type rating to be included in the pilot's licence. If an ATO is unable to provide certain elements of the training that is required to be carried out on an aircraft the ATO may issue such a certificate confirming the completion of the ground training or the training in an FSTD.

AMC3-OR.ATO.125 Training programme

TYPE RATING COURSES - HELICOPTERS

1. Introduction.
 - a. When developing the training programme for a type rating course, in addition to complying with the standards included in the OSD as established in accordance with Part-21 for the applicable type, the ATO should also follow any further recommendations contained therein.
 - b. The course should, as far as possible, provide for integrated ground, flight simulator and flight training designated to enable the student to operate safely and qualify for the grant of a type rating. The course should be directed towards a helicopter type, but where variants exist, all flying and ground training forming the basis of the course should relate to a single variant.
2. Variants.
 - a. Familiarisation training: where a helicopter type rating also includes variants of the same aircraft type requiring familiarisation training, the additional familiarisation training may be included in the theoretical knowledge training of the initial type rating course.
 - b. Differences training: where a helicopter type rating also includes variants of the same aircraft type for which difference training is required, the initial training course should be directed towards a single variant. Additional training to operate other variants within the same type rating should be completed after successful completion of the initial type rating course, although elements of this differences training may be undertaken at appropriate stages of the initial course, with the agreement of the competent authority.
3. Training in helicopter and FSTDs
The training programme should specify the amounts of flight training in the helicopter type and in FSTDs (FFSs, flight training devices (FTDs), or other training devices (OTDs)). Where a suitable FFS is geographically remote from the normal training base, the competent authority may agree to some additional training being included in the programme at a remote facility.
4. Skill Test.
The content of the flight training programme should be directed towards the skill test for that type. The practical training given in Part-FCL should be modified as necessary.
The skill test may be completed in a helicopter, in an FFS or partially in a helicopter and in an FSTD. The use of an FSTD for skill tests is governed by the level of approval of the flight simulator and the previous experience of the candidate. Where a flight simulator is not available, abnormal operations of systems should not be practised in a helicopter other than as allowed for in the skill test form for the type.
5. Phase progress tests and final theoretical knowledge examination.
Prior to the final theoretical knowledge examination covering the whole syllabus, the training programme should provide for phase progress tests associated with each phase of theoretical knowledge instruction. The phase progress tests should assess the candidate's knowledge on completion of each phase of the training programme.

6. Facilities: ground school equipment, training facilities and aids.

An ATO should provide, as a minimum, facilities for classroom instruction. Additional classroom training aids and equipment including, where appropriate, computers, should reflect the content of the course and the complexity of the helicopter. For multi-engine and multi-pilot helicopters, the minimum level of ground training aids should include equipment that provides a realistic cockpit working environment. Task analysis and the latest state-of-the-art training technology is encouraged and should be fully incorporated into the training facilities wherever possible. Facilities for self and supervised testing should be available to the student.

7. Training devices.

An FTD or OTD may be provided to supplement classroom training in order to enable students to practice and consolidate theoretical instruction. Where suitable equipment is not available, or is not appropriate, a helicopter or flight simulator of the relevant variant should be available. If an FTD represents a different variant of the same helicopter type for which the student is being trained, then differences and/or familiarisation training is required.

8. Computer-based-training (CBT).

Where CBT aids are used as a training tool, the ATO should ensure that a fully qualified ground instructor is available at all times when such equipment is being used by course students. Other than for revision periods, CBT lessons should be briefed and debriefed by a qualified ground instructor.

9. Theoretical knowledge instruction.

The theoretical knowledge instruction training should meet the general objectives of giving the student:

- a. a thorough knowledge of the helicopter structure, transmissions, rotors and equipment, powerplant and systems, and their associated limitations;
- b. a knowledge of the positioning and operation of the cockpit controls and indicators for the helicopter and its systems;
- c. a knowledge of performance, flight planning and monitoring, weight and balance, servicing and optional equipment items;
- d. an understanding of system malfunctions, their effect on helicopter operations and interaction with other systems;
- e. the understanding of normal, abnormal and emergency procedures and giving the student the understanding of potential control problems near the edge of the handling envelope. In particular, the phenomenon of 'servo transparency' (also known as 'jack stall') should be covered for those helicopter types where it is a known problem.

The amount of time and the contents of the theoretical instruction will depend on the complexity of the helicopter type involved and, to some extent, on the previous experience of the student.

10. Flight Training.

a. FSTDs

The level of qualification and the complexity of the type will determine the amount of practical training that may be accomplished in an FSTD, including completion of the skill test. Prior to undertaking the skill test, a student should demonstrate competency in the skill test items during the practical training.

b. Helicopter (with flight simulator)

With the exception of courses approved for ZFTT the amount of flight time in a helicopter should be adequate for completion of the skill test.

c. Helicopters (without flight simulator)

Whenever a helicopter is used for training, the amount of flight time practical training should be adequate for the completion of the skill test. The amount of flight training will depend on the complexity of the helicopter type involved and, to some extent, on the previous experience of the applicant.

AMC4-OR.ATO.125 Training programme – Flight Test training

FLIGHT TEST TRAINING COURSES – AEROPLANE AND HELICOPTERS

1. Introduction.
 - a. A flight test training course should, as far as possible, provide for a continuous process of ground and flight training to enable the student to assimilate the knowledge and skills required to conduct flight testing safely and efficiently. The student's ability to do this should be determined by the demonstration of a satisfactory level of theoretical knowledge of flight testing determined by progressive checking of knowledge and examination and progressive assessment by the ATO during flying training. There should be no difference in the level of knowledge or competency required of the student, irrespective of the intended role of the student as test pilot or other flight test personnel (for example, flight test engineer) within the flight crew.
 - b. A flight test training course should normally be conducted as a single, full-time course of study and training.
2. Programme of theoretical knowledge and flight training.
 - a. The training programme should specify the time allocated to theoretical knowledge training and flying training.
 - b. If an ATO wishes to provide a flight test training course that includes credit for previous experience on flight testing activity, the entry requirements to such courses should be specified by the ATO and should define the minimum level of experience and qualification required of the flight test crew member.

GROUND TRAINING

3. Syllabus.
 - a. The ground training syllabus should provide for the student to gain a thorough understanding of flight testing techniques.
4. Theoretical knowledge instruction.
 - a. The theoretical knowledge instruction training should give the student a thorough knowledge of the academic requirements of flight testing.
5. Facilities and training aids.
 - a. The ATO should provide adequate facilities for classroom instruction and have available appropriately qualified and experienced instructors. Training aids should enable students to gain practical experience of flight testing covered by the theoretical knowledge syllabus and enable such practical application of the knowledge to be carried out in a multi-crew environment. Facilities should be made available for student self-study outside the formal training programme.
6. Computer-based training (CBT).
 - a. CBT provides a valuable source of theoretical instruction, enabling the student to progress at his own pace within specified time limits. Many such systems ensure that syllabus subjects are fully covered and progress can be denied until a satisfactory assimilation of knowledge has been demonstrated. Such systems may allow self-study or distance learning, if they incorporate adequate knowledge testing procedures. When CBT is used as part of the theoretical knowledge instruction phase, the student should also have access to a suitably qualified instructor able to assist with areas of difficulty for the student.

7. Self-study and distance learning.
 - a. Elements of the theoretical knowledge syllabus may be adequately addressed by distance learning, if approved, or self-study, particularly when utilising CBT. Progress testing, either by self-assessed or instructor-evaluated means should be included in any self-study programme. If self-study or distance learning is included in the theoretical knowledge training, the course should also provide for an adequate period of supervised consolidation and knowledge testing prior to the commencement of flight training.
8. Progress tests and final theoretical knowledge examination.
 - a. The theoretical knowledge training programme should provide for progressive testing of the assimilation of the required knowledge. This testing process should also provide for retesting of syllabus items so that a thorough understanding of the required knowledge is assured. This should be achieved by intervention by a qualified instructor or, if using CBT with a self-testing facility, and by further testing during the supervised consolidation phase of the ground course.
 - b. The theoretical knowledge examinations should cover all areas of the theoretical knowledge syllabus. The examinations should be conducted as supervised written or oral knowledge tests without reference to course material. The pass mark (as defined by the ATO assumes the achievement of satisfactory levels of knowledge during the progressive phase tests of the course. The student should be advised of any areas of lack of knowledge displayed during the examination and, if necessary, given remedial instruction.

FLIGHT TRAINING

9. Aeroplane/helicopter training.
 - a. It is widely accepted that flying training normally involves inherent delay in achieving an acceptable flight situation and configuration for training to be carried out in accordance with the agreed syllabus. These could include ATC or other traffic delay on the ground prior to take off, the necessity to climb to height or transit to suitable training areas and the unavoidable need to physically reposition the aircraft for subsequent or repeat manoeuvres or instrument approaches. In such cases it should be ensured that the training syllabus provides adequate flexibility to enable the minimum amount of required flight training to be carried out.

FINAL IN-FLIGHT EXERCISE

10. Upon completion of the flight test training, the test pilot and/or flight test engineer will be required to undergo in-flight exercise with an FTI to demonstrate adequate competency of flight testing for issue of the flight test rating. The final in-flight exercise must be conducted in an appropriate aeroplane/helicopter.

COURSE COMPLETION CERTIFICATE

11. The HT is required to certify that the applicant has successfully completed the training course.

AMC1-OR.ATO.135 Training aircraft and FSTDs

ALL ATOs, EXCEPT THOSE PROVIDING FLIGHT TEST TRAINING

1. The number of training aircraft may be affected by the availability of FSTDs.
2. Each aircraft should be:
 - a. except in the case of balloons, fitted with duplicated primary flight controls for use by the instructor and the student. Swing-over flight controls should not be used;
 - b. equipped as required in the training specifications concerning the course in which it is used.

- 3 The fleet should include, as appropriate to the courses of training:
 - a. aircraft suitably equipped to simulate instrument meteorological conditions and for the instrument flight training required. For flight training and testing for the instrument rating, an adequate number of IFR-certificated aircraft should be available;
 - b. in the case of aeroplanes and sailplanes, aircraft suitable for demonstrating stalling and spin avoidance;
 - c. for the light aircraft flight instructor (LAFI) and flight instructor (FI) training courses on aeroplanes and sailplanes, aircraft suitable for spin recovery at the developed stage;
 - d. in the case of helicopters, helicopters suitable for autorotation demonstration;
 - e. in a non-complex ATO one aircraft fulfilling all the required characteristics for a training aircraft might be sufficient; and
 - f. each FSTD should be equipped as required in the training specifications concerning the course in which it is used.

AMC1-OR.ATO.140 Aerodromes and operating sites

GENERAL

1. Except in the case of balloons, the base aerodrome or operating site and any alternative base aerodromes at which flight training is being conducted should have at least the following facilities:
 - a. at least one runway or take-off area that allows training aircraft to make a normal take-off or landing within the performance limits of all the aircraft used for the training flights.
 - b. a wind direction indicator that is visible at ground level from the ends of each runway or at the appropriate holding points;
 - c. adequate runway electrical lighting if used for night training; and
 - d. an air traffic service, except for uncontrolled airfields or operating sites where the training requirements may be satisfied safely by another acceptable means of air-to-ground communication.
2. Except in the case of ATOs providing flight test training, in addition to 1, for helicopters, training sites should be available for:
 - a. confined area operation training;
 - b. simulated engine off autorotation; and
 - c. sloping ground operation.
3. In the case of balloons, the take-off sites used by the ATO should allow a normal take-off and clearing of all obstacles in the take-off flight path by at least 50 ft.

AMC1-OR.ATO.145 Pre-requisites for training

ENTRANCE REQUIREMENTS

An ATO providing training for other than LAPL, PPL, SPL or BPL should establish entrance requirements for students in their procedures. The entrance requirements should ensure that the students have enough knowledge, particularly of physics and mathematics, to be able to follow the courses.

SECTION II - ADDITIONAL REQUIREMENTS FOR ATOS PROVIDING TRAINING FOR LICENCES AND RATINGS OTHER THAN THE LAPL, PPL, SPL AND BPL

AMC1-OR.ATO.210 Personnel requirements

GENERAL

1. The management structure should ensure supervision of all grades of personnel by persons having the experience and qualities necessary to ensure the maintenance of high standards. Details of the management structure, indicating individual responsibilities, should be included in the training organisation's operations manual.
2. The training organisation should demonstrate to the competent authority that an adequate number of qualified, competent staff is employed.
3. In the case of an ATO offering integrated courses, the HT, the CFI and the CGI should be employed full-time.
4. In the case of an ATO offering:
 - a. modular courses only; or
 - b. type rating courses only; or
 - c. theoretical knowledge instruction onlythe positions of HT, CFI and CGI may be combined and filled by one or two persons with extensive experience in the training conducted by the training organisation, full-time or part-time, depending upon the scope of training offered.
5. The ratio of all students to flight instructors, excluding the HT, should not exceed 6:1.
6. Class numbers in ground subjects involving a high degree of supervision or practical work should not exceed 28 students.

THEORETICAL KNOWLEDGE INSTRUCTORS

7. The theoretical knowledge instruction for type or class ratings should be conducted by instructors holding the appropriate type/class rating, or having appropriate experience in aviation and knowledge of the aircraft concerned.
8. For this purpose, a flight engineer, a maintenance engineer or a flight operations officer should be considered as having appropriate experience in aviation and knowledge of the aircraft concerned.

AMC2-OR.ATO.210 Personnel requirements

QUALIFICATION OF HEAD OF TRAINING AND CHIEF FLIGHT INSTRUCTOR

1. *Head of training (HT)*. The nominated HT should hold or have held in the three years prior to first appointment as a HT, a professional pilot licence and associated ratings or certificates issued in accordance with Part-FCL, related to the flight training courses conducted.
2. Chief flight instructor (CFI). The CFI should:
 - a. hold the highest professional pilot licence and associated ratings or certificates related to the flight training courses conducted; and
 - b. except in the case of ATOs providing flight test training, have completed 1 000 hours of flight time as pilot-in-command of which at least 500 hours should be on flying instructional duties related to the flying courses conducted, of which 200 hours may be instrument ground time.

AMC1-OR.ATO.230(c) Training manual and operations manual

TRAINING MANUAL

Training manuals for use at an ATO conducting integrated or modular flight training courses should include the following:

1. The Training Plan

The aim of the course (ATP, CPL/IR, CPL, etc as applicable)	A statement of what the student is expected to do as a result of the training, the level of performance, and the training constraints to be observed.
Pre-entry requirements	Minimum age, educational requirements (including language), medical requirements. Any individual Member State requirements.
Credits for previous experience	To be obtained from the competent authority before training begins.
Training Syllabi	As applicable, the flying syllabus (single-engine or multi-engine, as applicable), the flight simulation training syllabus and the theoretical knowledge training syllabus.
The time scale and scale, in weeks, for each syllabus	Arrangements of the course and the integration of syllabi time.
Training programme	The general arrangements of daily and weekly programmes for flying, ground training and training in FSTDs, if applicable Bad weather constraints. Programme constraints in terms of maximum student training times, (flying, theoretical knowledge, on FSTDs), e.g. per day/week/month. Restrictions in respect of duty periods for students. Duration of dual and solo flights at various stages. Maximum flying hours in any day/night; maximum number of training flights in any day/night. Minimum rest period between duty periods.
Training records	Rules for security of records and documents. Attendance records. The form of training records to be kept. Persons responsible for checking records and students' log books. The nature and frequency of record checks. Standardisation of entries in training records. Rules concerning log book entries.

Safety training	<p>Individual responsibilities.</p> <p>Essential exercises.</p> <p>Emergency drills (frequency).</p> <p>Dual checks (frequency at various stages).</p> <p>Requirement before first solo day/night/navigation etc, if applicable.</p>
Tests and examinations	<p>Flying</p> <p>a. progress checks;</p> <p>b. skill tests.</p> <p>Theoretical Knowledge</p> <p>a. progress tests;</p> <p>b. theoretical knowledge examinations.</p> <p>Authorisation for test.</p> <p>Rules concerning refresher training before retest.</p> <p>Test reports and records.</p> <p>Procedures for examination paper preparation, type of question and assessment, standard required for 'Pass'.</p> <p>Procedure for question analysis and review and for raising replacement papers.</p> <p>Examination resit procedures.</p>
Training effectiveness	<p>Individual responsibilities.</p> <p>General assessment.</p> <p>Liaison between departments.</p> <p>Identification of unsatisfactory progress (individual students).</p> <p>Actions to correct unsatisfactory progress.</p> <p>Procedure for changing instructors.</p> <p>Maximum number of instructor changes per student.</p> <p>Internal feedback system for detecting training deficiencies.</p> <p>Procedure for suspending a student from training.</p> <p>Discipline.</p> <p>Reporting and documentation.</p>
Standards and Level of performance at various stages	<p>Individual responsibilities.</p> <p>Standardisation.</p> <p>Standardisation requirements and procedures.</p> <p>Application of test criteria.</p>

2. Briefing and Air Exercises

Air Exercise	A detailed statement of the content specification of all the air exercises to be taught, arranged in the sequence to be flown with main and sub-titles.
Air exercise reference list	An abbreviated list of the above exercises giving only main and subtitles for quick reference, and preferably in flip-card form to facilitate daily use by instructors.

Course structure – Phase of training	A statement of how the course will be divided into phases, indication of how the above air exercises will be divided between the phases and how they will be arranged to ensure that they are completed in the most suitable learning sequence and that essential (emergency) exercises are repeated at the correct frequency. Also, the syllabus hours for each phase and for groups of exercises within each phase should be stated and when progress tests are to be conducted, etc.
Course structure integration of syllabi	The manner in which theoretical knowledge and flight training in an aircraft or an FSTD will be integrated so that as the flying training exercises are carried out students will be able to apply the knowledge gained from the associated theoretical knowledge instruction and flight training.
Student progress	The requirement for student progress and include a brief but specific statement of what a student is expected to be able to do and the standard of proficiency he/she must achieve before progressing from one phase of air exercise training to the next. Include minimum experience requirements in terms of hours, satisfactory exercise completion, etc. as necessary before significant exercises, e.g. night flying.
Instructional methods	The ATO requirements, particularly in respect of pre- and post-flying briefing, adherence to syllabi and training specifications, authorisation of solo flights, etc.
Progress tests	The instructions given to examining staff in respect of the conduct and documentation of all progress tests.
Glossary of terms	Definition of significant terms as necessary.
Appendices	Progress test report forms. Skill test report forms. ATO certificates of experience, competence, etc. as required.

3. Flight training in an FSTD, if applicable

Structure generally as for 2.

4. Theoretical knowledge instruction

Structure of the theoretical knowledge course	A statement of the structure of the course, including the general sequence of the topics to be taught in each subject, the time allocated to each topic, the breakdown per subject and an example of a course schedule. Distance learning courses should include instructions of the material to be studied for individual elements of the course.
Lesson Plans	A description of each lesson or group of lessons including teaching materials, training aids, progress test organisation and inter-connection of topics with other subjects.
Teaching materials	Specification of the training aids to be used (e.g. study materials, course manual references, exercises, self-study materials, demonstration equipment).
Student progress	The requirement for student progress, including a brief but specific statement of the standard that must be achieved and the mechanism for achieving this, before application for

	theoretical knowledge examinations.
Progress testing	The organisation of progress testing in each subject, including topics covered, evaluation methods and documentation.
Review procedure	The procedure to be followed if the standard required at any stage of the course is not achieved, including an agreed action plan with remedial training if required.

AMC1-OR.ATO.230(d) Training manual and operations manual – all ATOs, except those providing flight test training

OPERATIONS MANUAL

The operations manual for use at an ATO conducting integrated or modular flight training courses should include the following:

1. General

- a. a list and description of all volumes in the Operations Manual;
- b. administration (function and management);
- c. responsibilities (all management and administrative staff);
- d. student discipline and disciplinary action;
- e. approval/authorisation of flights;
- f. preparation of flying programme (restriction of numbers of aircraft in poor weather);
- g. command of aircraft;
- h. responsibilities of pilot-in-command;
- i. carriage of passengers;
- j. aircraft documentation;
- k. retention of documents;
- l. flight crew qualification records (licences and ratings);
- m. revalidation (medical certificates and ratings);
- n. flight duty period and flight time limitations (flying instructors);
- o. flight duty period and flight time limitations (students);
- p. rest periods (flight instructors);
- q. rest periods (students);
- r. pilots' log books;
- s. flight planning (general); and
- t. safety (general) – equipment, radio listening watch, hazards, accidents and incidents (including reports), safety pilots etc..

2. Technical

- a. aircraft descriptive notes;
- b. aircraft handling (including checklists, limitations, maintenance and technical logs, in accordance with relevant requirements, etc.);
- c. emergency procedures;
- d. radio and radio navigation aids; and
- e. allowable deficiencies (based on MMEL, if available).

3. Route
 - a. performance (legislation, take-off, route, landing etc.);
 - b. flight planning (fuel, oil, minimum safe altitude, navigation equipment etc.);
 - c. loading (load sheets, mass, balance, limitations);
 - d. weather minima (flying instructors);
 - e. weather minima (students – at various stages of training); and
 - f. training routes/areas.
4. Personnel Training
 - a. appointments of persons responsible for standards/competence of flight personnel;
 - b. initial training;
 - c. refresher training;
 - d. standardisation training;
 - e. proficiency checks;
 - f. upgrading training; and
 - g. ATO personnel standards evaluation.

SECTION III – ADDITIONAL REQUIREMENTS FOR ORGANISATIONS OPERATING FLIGHT SIMULATION TRAINING DEVICES (FSTDs) AND THE QUALIFICATION OF FSTDs

CHAPTER 1 - REQUIREMENTS FOR ORGANISATIONS OPERATING FSTDs

AMC1-OR.ATO.300 General

COMPLIANCE MONITORING PROGRAMME –ORGANISATIONS OPERATING FSTDs

1. Introduction.
 - a. The purpose of this AMC is to provide additional and specific information and guidance to an organisation operating FSTDs on how to establish a compliance monitoring programme (CMP) that enables compliance with the applicable requirements.
2. Compliance Monitoring Programme.
 - a. Typical subject areas for inspections are:
 - i. Actual FSTD operation;
 - ii. Maintenance;
 - iii. Technical Standards; and
 - iv. FSTD safety features.
3. Audit Scope.
 - a. Organisations operating FSTDs are required to monitor compliance with the procedures they have designed to ensure specified performance and functions.
In doing so they should as a minimum, and where appropriate, monitor:
 - i. Organisation;
 - ii. Plans and objectives;

- iii. Maintenance procedures;
- iv. FSTD qualification level;
- v. Supervision;
- vi. FSTD technical status;
- vii. Manuals, logs, and records;
- viii. Defect deferral;
- ix. Personnel training;
- x. Aircraft modifications; and
- xi. FSTD configuration management.

AMC2-OR.ATO.300 General

COMPLIANCE MONITORING PROGRAMME –ORGANISATIONS OPERATING FSTDs

Standard Measurements for Full Flight Simulator Compliance

One acceptable means of measuring FSTD performance is contained in ARINC report 433 (May 15th, 2001 or as amended) *Standard Measurements for Flight Simulator Quality*.

AMC3-OR.ATO.300 General

COMPLIANCE MONITORING PROGRAMME –ORGANISATIONS OPERATING BASIC INSTRUMENT TRAINING DEVICES (BITD)

1. A compliance monitoring programme together with a statement acknowledging completion of a periodic review by the accountable manager should include the following:
 - a. a maintenance facility which provides suitable BITD hardware and software test and maintenance capability;
 - b. a recording system in the form of a technical log in which defects, deferred defects and development work are listed, interpreted, actioned and reviewed within a specified time scale; and
 - c. planned routine maintenance of the BITD and periodic running of the qualification test guide (QTG) with adequate manning to cover BITD operating periods and routine maintenance work.
2. A planned audit schedule and a periodic review should be used to verify that corrective action was carried out and that it was effective. The auditor should have adequate knowledge of BITDs.

GM1-OR.ATO.300 General

COMPLIANCE MONITORING - ORGANISATIONS OPERATING FSTDs- GENERAL

1. The concept of compliance monitoring is a fundamental requirement for organisations operating FSTDs. An effective CM function is vitally important in supporting operation of the devices, in a structured way, to ensure they remain in compliance with the technical standards of CS-FSTD(A) and CS-FSTD (H) and continue to be effective training tools. An effective CM function is also essential to support any level of extended recurrent evaluation period as permitted by OR.ATO.375(b).
2. OR.ATO.375(b) provides the requirements on what is expected of a CM function. The following guidance has been developed to provide additional material to help both

organisations operating FSTDs and competent authorities in developing effective CM that satisfy the applicable requirements and ensure the highest standards of training are maintained.

3. For ease of use this guidance material has been laid out in the same way as AMC2-OR.GEN.200(a)(7). This guidance is equally applicable to other levels of FSTDs and both aeroplanes and helicopters. Where the expected standard differs this has been detailed in the guidance material.
4. Also included, as appendices to this guidance material are a compliance checklist for organisations operating FSTDs (GM2-OR.ATO.300) and guidance detailing the preparation for an evaluation by the competent authority (GM3-OR.ATO.300). The compliance checklist should be used by the authorities as a standardised checklist for the elements that are expected in the CM function of an organisation operating FSTDs. The organisation should complete as a minimum the second column of the checklist by providing appropriate manual or procedure references for each of the identified elements of the CM function. Additional information can be provided in the third column to aid assessment of the checklist as appropriate. This would then be provided to the competent authority. Use of this checklist should assist in ensuring a consistent approach by the competent authorities and also provide organisations operating FSTDs with additional guidance on all the elements of a CM function that the competent authorities will expect. The guidance is provided to help organisations operating FSTDs to prepare for authority visits.
5. The documentation of the CM may be electronic, provided the necessary controls can be demonstrated. This should include control of any paper copies that may be downloaded for use by individuals. It is recommended that any such copies are automatically designated as uncontrolled as part of the download process. Whilst electronic signatures on master documents may be accepted, with appropriate protections, a hardcopy master of the CM manual should be provided, with wet-ink signatures to be held by the applicant.
6. It should be recognised that whatever CM is developed, it will not be effective unless it becomes an integral part of the way in which the organisation works. It includes both the necessary procedures for maintaining compliance with all the applicable requirements and a compliance monitoring programme (CMP) to monitor the execution of these procedures. A successful CM will ensure that the highest training tool is available at all times. If the CM is viewed as an add-on to existing processes it will become a burden and it will never be wholly effective. It should also be noted that compliance control or inspection is only a small part of a CM. If the CM is working effectively, inspections such as fly-outs should become routine revealing little beyond day-to-day unserviceabilities. Systematic defects should be captured by the CMP.
7. The competent authority should be satisfied that the accountable manager is able to adequately provide the required level of resources to properly support the FSTD. Detailed knowledge of FSTD requirement standards are not necessary, only sufficient to understand his/her responsibility for ensuring the FSTD is properly supported. The assessment of the compliance monitoring manager should concentrate on establishing that the nominee has sufficient knowledge and experience of both compliance monitoring management and FSTD operations to operate a CMS within an organisation operating FSTDs. This is likely to require experience of working in the compliance monitoring field and sufficient knowledge of FSTDs and the technical standards with which they should comply.
8. If an organisation operating FSTDs is certified under any international quality standard it should assure that it fully covers the applicable organisation requirements (OR) and the qualification basis.
9. For small organisations, it is perfectly acceptable to combine the roles of compliance monitoring manager and Accountable Manager. For other organisations that hold multiple certificates and may cover multiple sites, it is advantageous to have a

common CM function with an overall compliance monitoring manager. However, it is essential, particularly where sites may be significantly separated geographically, that there is a nominated representative/focal at each site and possibly for each certificate. These representatives should hold the delegated responsibility of the compliance monitoring manager for the day-to-day compliance monitoring role at their site and in their function and have the necessary direct reporting line to the overall compliance monitoring manager. It will also be necessary to ensure that local representatives are also acceptable to the local NAA. In many cases the local representatives may perform other functions in addition to this role. This is acceptable provided the necessary independence of any compliance monitoring activity is maintained.

10. CM, as a whole, begins with the requirements with which the system seeks to comply. These include both the technical standards, in this case the relevant parts of CS-FSTD plus any other specific standards, for example Health and Safety regulations, and the compliance monitoring objectives, such as defect rates and rectification intervals and FSTD reliability targets. The CM should define the process by which these standards are made available to those who require them.
11. The next part of CM is that part which defines the day-to-day procedures or working practices by which the standards will be achieved. These procedures should include as a minimum defect reporting systems, defect rectification processes, tracking mechanisms, preventative maintenance programmes, spares handling, equipment calibration and configuration management of the device. They should include checks to assess the compliance of the performed actions. These procedures and standards should be made readily available to anybody involved in the maintenance and day-to-day operation of the FSTD.
12. The third part of CM is the method by which the organisation operating an FSTD confirms the device is maintained in compliance with the defined standards and is being operated in accordance with the defined procedures. This is the compliance monitoring programme (CMP) and includes the audit methods, reporting and corrective action procedures and feedback, management reviews and schedules for audits of all aspects of the FSTD operation.
13. Across all aspects of CM, and most important to it, are the people. CM includes the definition of the responsibilities of all staff and should include a declaration of the minimum levels of resource proposed for the direct support of the FSTD plus the levels of support and managerial staff proposed. The levels of resource can be affected by factors such as local health and safety regulations, existence of weekend and/or night usage of the device(s), etc. CM also includes definition of the skills and experience required for staff and leads to definition of any required training programmes. Training needs cover both technical training and audit training, including QTG running and checking and fly-out techniques for flight crew.
14. The documentation of CM may be provided in any number of documents provided there are appropriate cross-references in all documents such that the system is fully traceable in both directions from end to end. For all but small organisations at least two documents would be expected:
 - a. Firstly, a CM manual containing the policy, terminology, organisational charts and responsibilities, an overview of all processes, within the system, including those for maintaining regulatory compliance such as QTG running and fly-outs (function and subjective testing), CMP including the audit schedule and audit procedures including reporting and corrective action procedures. In addition, the CM manual should include, either directly or by reference, the identification of skills and experience and associated training.
 - b. Secondly, a procedures manual containing, as a minimum, software and hardware control procedures, configuration control procedures including, for example, control of training loads, updates to visual models, navigation and IOS databases, QTG running and checking procedures, fly-out procedures,

maintenance procedures including both defect rectification and preventative maintenance processes. Any standard forms and checklists should also be included.

15. The CM documentation also includes all records such as technical logs, QTG runs, fly-out reports and maintenance job cards.
16. For organisations with several certificates, separate and modular procedures manuals with a single CM manual covering all approvals, may be acceptable.
17. It is important to understand the difference between compliance assurance and compliance control. An effective CM will contain elements of both. Compliance control is normally done by inspection of the product; it provides confirmation at the time of the inspection that the product conforms to a defined standard.
18. The compliance assurance element is essential to ensure the standard is maintained throughout the periods between product (FSTD) inspections. Within a CMP, the processes are defined that are necessary to provide confidence that the FSTD(s) is being supported and maintained to the highest possible standard and in compliance with the relevant requirements. A programme of internal audits is then set in place to confirm that the processes are being followed and are effective. The competent authority would normally oversee a certified organisation by process and system audit, however, in the case of FSTDs, authority oversight includes an inspection element in the form of the recurrent FSTD evaluation.
19. In addition to the normal process and system audits, the compliance assurance audit schedule should include the schedule for each FSTD for fly-outs and QTG running through the audit year.
20. The audit procedure should include, at least, the following: statement of scope, planning, initiation of audit, collection of evidence, analysis, reporting of findings, identification and agreement of corrective actions and feedback, including reporting significant findings to the competent authority, where appropriate. The review of published material could include, in addition to the CM and procedures manuals, QTG records, fly-out reports, technical log sheets, maintenance records and configuration control records.
21. In addition to basic knowledge of FSTD requirements and operation, it is expected that auditors have received training in CM and audit techniques.
22. The routine fly-outs of the device are a specialised part of the audit programme. It is essential that the pilots tasked with carrying out these fly-outs are adequately experienced. They would be expected to be TRI/TRE qualified on the type, and should have experience of simulator evaluations carried out by the competent authority. The assignment of such pilots can present difficulties, particularly for the independent organisation operating FSTDs not directly associated with an airline. It is vital for the organisation to ensure their users are aware of the importance of the fly-outs as part of the continued qualification of the device and the need to assist in the provision of suitably qualified pilots to carry them out. It is worth noting that simulator users are required to satisfy themselves that the training devices they use are assessed for continued suitability, as part of their own CMP. Involvement in fly-outs assists in meeting this need.
23. Whilst it is accepted that the number of audits required in an organisation with a single device will be significantly less than those in larger organisations with multiple devices, the CMP should still meet the same criteria, and cover all aspects of the operation within a twelve-month period. The independence of the audit personnel should be maintained at all times. The audit programme, whether by full audit or by using a checklist system should still be sufficiently comprehensive to provide the necessary level of confidence that the device is maintained and operated to the highest possible standard. This includes monitoring and review of corrective actions and feedback processes.

24. The successful use of sub-contractors who play a significant role in the provision of services, such as maintenance or engineering services, to an organisation operating FSTDs is reliant on the sub-contractor operating under the CM of the organisation. All requirements that an organisation is expected to meet are equally applicable to his/her sub-contractor. It is the organisation's responsibility to ensure that the sub-contractor complies with its CM.
25. It is essential that a proper understanding of the CM and how it applies to each and every staff member is provided by appropriate training to all, not just those directly involved in operating the CM, such as the accountable manager, the compliance monitoring manager, representatives and the auditors. The training given to those directly involved in CM should cover the CM, audit techniques and applicable technical standards. CM familiarisation training should be an integral part of any induction training and recurrent training. Update training on technical standards for audit personnel, is also of particular importance.
26. Any effective CM will include measurement of its effectiveness. The organisation should develop performance measures that can be monitored against objectives. Such measures, often referred to as metrics, should be reviewed by the competent authority as part of its oversight of the CM within the organisation and during recurrent evaluations. In addition they should form part of the data reviewed during scheduled management reviews as part of the CM.
27. ARINC 433 provides good guidance on simulator compliance measurement. Metrics should monitor not only individual simulator performance but, for larger organisations, how each simulator is performing within the fleet. It is also recommended that metrics data be shared, regularly, with the simulator manufacturers to allow monitoring for generic problems such as design issues, which may be best addressed with a fleet-wide solution.

GM2-OR.ATO.300 General

COMPLIANCE MONITORING – ASSESSMENT FOR ORGANISATIONS OPERATING FSTDs

COMPLIANCE MONITORING ASSESSMENT FOR ORGANISATIONS OPERATING FSTDs			
Organisation:			
Site Assessed:			
Date of Assessment:			
Accountable Manager:			
Compliance Monitoring Manager:			
Number and Type of FSTDs:			
CM Manual Reference:			
Audit Area	CM/Proc Ref	Comments	Satisfactory Y/N
1. ACCOUNTABLE MANAGER			
Has an accountable manager with overall responsibility for compliance monitoring (CM) been nominated?			
Does the accountable manager have corporate authority to ensure all necessary activities can be financed and carried out to the standard required by the competent authority?			
Has a formal written compliance policy statement been established, included in the CM manual and signed by the accountable manager?			
2. COMPLIANCE MONITORING MANAGER			

Has a compliance monitoring manager (CM manager) been nominated?			
Are the posts of CM manager and AM combined? If so, is the independence of Compliance Audits assured?			
Does the CM manager have overall responsibility and authority to: <ul style="list-style-type: none"> a) verify that standards are met and b) ensure that the compliance monitoring programme is established, implemented and maintained? 			
Does the CM manager have direct access to the AM?			
Does the CM manager have access to all parts of the organisation operating an FSTD and as necessary any subcontractor's organisation?			
3. COMPLIANCE MONITORING (CM)			
Has CM been established by the operator?			
Is CM properly documented? (see Section 4)			
Is the CM structured according to the size and complexity of the operator?			

<p>Does the CM include the following as a minimum:</p> <ul style="list-style-type: none"> a. Monitoring of compliance with required technical standards b. Identification of corrective actions and person responsible for rectification c. Feedback system to accountable manager to ensure corrective action are promptly addressed d. Reporting of significant non-compliances to the competent authority e. A compliance monitoring programme to verify continued compliance with applicable requirements, standards and procedures 		<ul style="list-style-type: none"> a. b. c. d. e. 	
--	--	--	--

Are the responsibilities of the CM manager defined to include, as a minimum:

- a) Monitoring of corrective action programme
- b) To ensure that the corrective actions contain the necessary elements
- c) Provide management with an independent assessment of corrective action, implementation and completion
- d) Evaluation of the effectiveness of the corrective action programme

Are adequate financial, material and human resources in place to support CM?

Are management evaluations/reviews of CM held at least quarterly?

Does the management evaluation ensure that the CMS is working effectively and is it comprehensive and well documented?

Does the compliance monitoring programme identify the processes necessary and the persons within the organisation who have the training, experience, responsibility and authority to carry out the following:

- a. Schedule and perform quality inspections and audits, including unscheduled audits when required
- b. Identify and record any concerns or findings, and the evidence necessary to substantiate such concerns or findings;
- c. Initiate or recommend solutions to concerns or findings through designated reporting channels;
- d. Verify the implementation of solutions within specific timescales;

- a.
- b.
- c.
- d.

Is there sufficient auditor resource available and can their required level of independence be demonstrated?

Do the auditors report directly to the compliance monitoring manager?

Does the defined audit schedule cover the following areas, within each 12 month period?

a. Organisation

a)

b. Plans and objectives

b)

c. Maintenance procedures

c)

d. FSTD qualification level;

d)

e. Supervision

e)

f. FSTD technical status

f)

g. Manuals, logs, and records

g)

h. Defect deferral

h)

i)

i. Personnel training

j)

j. Aircraft and simulator configuration

management, including
Airworthiness Directives

How are audit non-compliances recorded?

Are procedures in place to ensure that corrective actions are taken in response to findings?

<p>Are records of the compliance monitoring programme:</p> <p>a) accurate</p> <p>b) complete and</p> <p>c) readily accessible</p>		<p>a)</p> <p>b)</p> <p>c)</p>	
<p>Is there an acceptable and effective procedure for providing a briefing on the CM to all personnel?</p>			
<p>Is there an acceptable and effective procedure for ensuring that all those responsible for managing the CM receive training covering:</p> <p>a) An introduction to the concept of the CM</p> <p>b) Compliance management</p> <p>c) The concept of Compliance Assurance</p> <p>d) CM manuals</p> <p>e) Audit Techniques</p> <p>f) Reporting and recording</p> <p>g) How the CM supports continuous improvement within the organisation</p>		<p>a)</p> <p>b)</p> <p>c)</p> <p>d)</p> <p>e)</p> <p>f)</p> <p>g)</p>	
<p>Are suitable training records maintained?</p>			

Are activities within the CM sub-contracted out to external agencies?			
Do written agreements exist between the organisation and the sub-contractor clearly defining the services and standard to be provided?			
Are the procedures in place to ensure that the necessary authorisations/approval when required are held by a sub-contractor?			
Are the procedures in place to establish that the sub-contractor has the necessary technical competence?			
4. CM MANUAL			
What is the current status of the CM manual – amendment and issue date?			
Is there a procedure in place to control copies and the distribution of the CM manual?			
Is the CM manual signed by the accountable manager and the compliance monitoring manager?			
Does the CM manual include, either directly or by reference to other documents, the following: a) A description of the organisation b) Reference to appropriate FSTD technical standards c) Allocation of duties and responsibilities d) Audit procedures e) Reporting procedures f) Follow-up and corrective action procedures g) Document retention policy h) Training records		a) b) c) d) e) f) g) h)	

<p>Is there a document retention policy covering</p> <ul style="list-style-type: none"> a) Audit schedules a) Inspection and audit reports b) Responses to findings c) Corrective action reports d) Follow-up and closure reports e) Management evaluation reports 		<ul style="list-style-type: none"> a) b) c) d) e) f) 	
--	--	--	--

<p>Does the CM manual include, either directly or by reference to other documents, the following procedures for day to day operation of the FSTD:</p> <ul style="list-style-type: none"> a) Defect reporting systems b) Defect rectification processes c) Tracking mechanisms d) Preventative maintenance programmes e) Spares handling f) Equipment calibration g) Configuration management of the device including visual, IOS and navigation databases. h) Configuration control system to ensure the continued integrity of the hardware and software qualified. i) QTG running and function and subjective tests. 		<ul style="list-style-type: none"> a) b) c) d) e) f) g) h) i) 	
---	--	--	--

<p>Does the CM manual include, either directly or by reference to other documents, procedures for notification of the competent authorities of the following:</p> <p>a) Any change in the organisation including Company name, location, management</p> <p>b) Major changes to a qualified device</p> <p>c) Deactivation or relocation of a qualified device</p> <p>d) Major failures of a qualified device</p> <p>e) Major safety issue associated with the installation</p>		<p>a)</p> <p>b)</p> <p>c)</p> <p>d)</p> <p>e)</p>	
---	--	---	--

<p>Does the CM manual define acceptable and effective procedures to ensure compliance with applicable health and safety regulations, including:</p> <p>a) Safety briefings</p> <p>b) Fire/Smoke detection and suppression</p> <p>c) Protection against electrical, mechanical, hydraulic and pneumatic hazards</p> <p>d) Other items as defined in AMC1-OR.ATO.315</p>		<p>a)</p> <p>b)</p> <p>c)</p> <p>d)</p>	
<p>Does the CM manual include acceptable and effective procedures for regularly checking FSTD safety features such as emergency stops and emergency lighting, and are such tests recorded?</p>			
<p>5. COMPLIANCE MEASURES</p>			
<p>Have compliance monitoring objectives been developed from the Policy statement, and included either directly or by reference in the CMS manual?</p>			
<p>Does the CMS include processes to produce and review appropriate metrics data?</p>			

Do these compliance measures track the following: a) FSTD availability b) Numbers of defects c) Open defects d) Defect closure rates e) Training session interrupt rates f) Training session compliance rating		a) b) c) d) e) f)	
Do the compliance measures support the Compliance objectives?			
<p><u>Required actions/Comments</u></p> Signature: Date:			

GM3-OR.ATO.300 General

COMPLIANCE MONITORING SYSTEM – GUIDANCE FOR ORGANISATIONS OPERATING FSTDs TO PREPARE FOR A COMPETENT AUTHORITY EVALUATION

1. Introduction.

The following material provides guidance on what is expected by the competent authorities to support the discussion during the preliminary briefing which is a first step of any initial or recurrent evaluation of an FSTD carried out by an competent authority.

This document has been developed as well to standardise working methods throughout Member States and to develop effective CM spot checks to satisfy the applicable requirements and therefore to ensure the highest standards of training are attained.

2. Document form.

Different document forms can be considered. Nevertheless, it appears that the best solution is a dossier, which includes all the information required by the Authorities.

3. Contents of the dossier for an initial evaluation:

- a. type of FSTD and qualification level requested;
- b. evaluation agenda: including date of evaluation, name of people involved for the competent authority, contact details for the FSTD operator, schedules for the subjective flight profile, QTG rerun;
- c. FSTD identification including, type of FSTD, manufacturer, registration number, date of entry into service, host computer, visual system, motion system, type of IOS, simulated version(s), standards of all the aircraft computers (if applicable);
- d. planned modifications;
- e. subjective open defect(s);

- f. airport visual databases including for each visual scene, name of the airport, IATA and ICAO codes, type of visual scene (specific or generic), additional capabilities (e.g. snow model, WGS 84 compliance, EGPWS); and
 - g. QTG status: the list should include for each QTG test available the status of the tests following the FSTD operator and competent authority reviews;
4. Contents of the dossier for a recurrent evaluation:
- a. type of FSTD and qualification level requested;
 - b. evaluation agenda, including date of evaluation, name of people involved for the competent authority, contact details for the operator, schedules for the subjective flight profile, QTG rerun and QTG review;
 - c. FSTD identification, including type of FSTD, manufacturer, registration number, date of entry into service, host computer, visual system, motion system, type of IOS, simulated version(s), standards of all the aircraft computers (if applicable);
 - d. status of items raised during the last evaluation and date of closure;
 - e. reliability data: training hours month by month during the past year, numbers of complaints mentioned in the technical log, training hours lost, availability rate;
 - f. operational data: a list of FSTD users over the previous 12 months should be provided, with number of training hours;
 - g. failure tabulation including categorisation of failures (by ATA chapter and Pareto diagram, ARINC classification);
 - h. details of main failures leading to training interruption or multiple occurrences of some failures;
 - i. recent and planned modifications;
 - j. subjective open defect(s);
 - k. airport visual databases including for each visual scene, name of the airport, ATA and ICAO codes, type of visual scene (specific or generic), additional capabilities (Snow model, WGS 84 compliance, EGPWS); and
 - l. QTG status: the list should include for each QTG test available, the date of run during the past year, any comment, and the status of the tests.

AMC1-OR.ATO.310(a) Modifications

GENERAL

1. The FSTD, where applicable, should be maintained in a configuration that accurately represents the aircraft being simulated. This may be a specific aircraft tail number or may be a representation of a common standard.
2. Users of the device should always establish a differences list for any device they intend to use, and to identify how any differences should be covered in training. In order to ensure each device is maintained in the appropriate configuration, the organisation operating an FSTD should have a system that ensures that all relevant airworthiness directives (ADs) are introduced where applicable on affected FSTDs.
3. Organisations are reminded that ADs from both the State of Design of the aircraft and the State where the FSTD is located need to be monitored. ADs from the State of Design of an aircraft are usually automatically applicable, unless specifically varied by the aircraft's State of Registry.
4. It may also be necessary to monitor ADs issued by States where users of the device have aircraft registered. In addition to ADs, the FSTD operator also needs to put in place processes that ensure all aircraft modifications are reviewed for any effect on training, testing and checking. This should usually require review of the aircraft

manufacturers service bulletins and may require a specific link to the aircraft manufacturer to be developed. In practice this link is often established through aircraft operators who use the device.

AMC1-OR.ATO.310(a) Modifications

EXAMPLES OF MAJOR MODIFICATIONS

1. The following are examples of modifications that *should* be considered as major. This list is not exhaustive and modifications need to be classified on a case-by-case basis:
 - a. any change that affects the QTG;
 - b. introduction of new standards of equipment such as flight management and guidance computer (FMGC) and updated aerodynamic data packages;
 - c. re-hosting of the FSTD software;
 - d. introduction of features that model new training scenarios; e.g. traffic alert and collision avoidance system (TCAS), enhanced ground proximity warning system (EGPWS);
 - e. aircraft modifications which could affect the FSTD qualification; and
 - f. FSTD hardware or software modifications that could affect the handling qualities, performance or system representation.
2. Organisations operating FSTDs are reminded that the requirement is for the competent authority to be notified of such changes.
3. This does not imply that the competent authority will always wish to directly evaluate the change. The competent authority should be mindful of the potential burden placed on the organisation by a special evaluation and should always consider that burden when deciding if such an evaluation is necessary.
4. The organisation operating FSTDs should have an internal acceptance process for modifications, to be used when implementing all modifications, even if the competent authority has made a decision to carry out an evaluation.

AMC1-OR.ATO.315 Installations

MINIMUM ELEMENTS FOR SAFE OPERATION

1. Introduction.
 - a. This AMC identifies those elements that are expected to be addressed, as a minimum, to ensure that the FSTD installation provides a safe environment for the users and operators of the FSTD under all circumstances.
2. Expected Elements.
 - a. Adequate fire/smoke detection, warning and suppression arrangements should be provided to ensure safe passage of personnel from the FSTD.
 - b. Adequate protection should be provided against electrical, mechanical, hydraulic and pneumatic hazards, including those arising from the control loading and motion systems, to ensure maximum safety of all persons in the vicinity of the FSTD.
 - c. Other areas that should be addressed include:
 - i. a two-way communication system that remains operational in the event of a total power failure;
 - ii. emergency lighting;
 - iii. escape exits and escape routes;
 - iv. occupant restraints (seats, seat belts etc.);

- v. external warning of motion and access ramp or stairs activity;
- vi. danger area markings;
- vii. guard rails and gates;
- viii. motion and control loading emergency stop controls accessible from either pilot or instructor seats; and
- ix. a manual or automatic electrical power isolation switch.

GM1-OR.ATO.315 Installations

GENERAL

1. The intent of OR.ATO.315 is to establish that the organisation operating an FSTD has all the necessary procedures in place to ensure that the FSTD installation remains in compliance with all requirements affecting the safety of the device and its users.
2. Based on experience, the competent authority should pay particular attention to the quality of safety briefings on the FSTD provided to users and instructors, and to the execution of regular checks on the FSTD safety features.
3. It is recognised that certain checks, such as that of the emergency stop, can have adverse impact on the FSTD if carried out in full.
4. It is acceptable to develop a procedure that protects elements of the device by shutting them down in advance, in a more controlled manner, provided it can be shown that the procedure still demonstrates the whole device can be shut down by the operation of a single emergency stop button, when required.

CHAPTER 2 -REQUIREMENTS FOR THE QUALIFICATION OF FSTDs

AMC1-OR.ATO.350 Application for FSTD qualification

LETTER OF APPLICATION FOR INITIAL QUALIFICATION OF AN FSTD; EXCEPT BASIC INSTRUMENT TRAINING DEVICE (BITD)

A sample of letter of application is provided overleaf.

Part A

To be submitted not less than three months prior to requested qualification date

(Date)

(Office – Competent Authority)
 (Address).....
 (City).....
 (Country).....

Type of FSTD	Aircraft Type/class	Qualification Level Sought				
		A	B	C	D	Sp./Cat
Full Flight Simulator FFS						
Flight Training Device FTD		1	2	3		
Flight and Navigation Procedures Trainer FNPT		I	II	III	II MCC	III MCC

Interim Qualification Level requested: YES/NO

Dear,

<Name of Applicant> requests the evaluation of its flight simulation training device<operator's identification of the FSTD> for qualification. The <FSTD manufacturer's name> FSTD with its <visual system and manufacturer's name, if applicable>visual system.

Evaluation is requested for the following configurations and engine fits as applicable:

e.g. 767 PW/GE and 757RR

1.....

2.....

3.....

Dates requested are: <date(s)> and the FSTD will be located at <place>.

The objective tests of the QTG will be submitted by <date> and in any event not less than 30 days before the requested evaluation date unless otherwise agreed with the competent authority.

Comments:

.....

Signed

.....

Print name:

Position/appointment held:

Email address:

Telephone number:

Part B

To be completed with attached QTG results

(Date)

We have completed tests of the FSTD and declare that it meets all applicable requirements except as noted below.

The following QTG tests are outstanding:

Tests	Comments
-------	----------

(Add boxes as required)

It is expected that they will be completed and submitted three weeks prior to the evaluation date.

Signed

.....

Print name:

Position/appointment held:

E-mail address:

Telephone number:

Part C

To be completed not less than seven days prior to initial evaluation

(Date)

The FSTD has been assessed by the following evaluation team:

.....	(Name)	Qualification
.....	(Name)	Qualification
.....	(Name)	Qualification

..... (Name) Pilot's Licence Nr.....

..... (Name) Flight Engineer's Licence Nr (if applicable)

- FFS/FTD: This team attests that the<type of FSTD> conforms to the aeroplane flight deck/helicopter cockpit configuration of <name of aircraft operator (if applicable), type of aeroplane/helicopter> aeroplane/helicopter within the requirements for <type of FSTD and level> and that the simulated systems and subsystems function equivalently to those in that aeroplane/helicopter. The pilot of this evaluation team has also assessed the performance and the flying qualities of the FSTD and finds that it represents the designated aeroplane/helicopter.
- FNPT: This team attest(s) that the<type of FSTD>represents the flight deck or cockpit environment of a <aeroplane/helicopter or class of aeroplane/type of helicopter>within the requirements for <type of FSTD and level>and that the simulated systems appear to function as in the class of aeroplane/type of helicopter. The pilot of this evaluation team has also assessed the performance and the flying qualities of the FSTD and finds that it represents the designated class of aeroplane/type of helicopter.

(Additional comments as required)

.....
.....
.....

Signed

.....

Print name:

Position/appointment held:

E-mail address:

Telephone number:

GM1-OR.ATO.350 Application for FSTD qualification

USE OF FOOTPRINT TESTS IN QUALIFICATION TEST SUBMISSION

1. Introduction

- a. Recent experience during initial qualification of some full flight simulators (FFS) has required acceptance of increasing numbers of footprint tests. This is particularly true for FFS' of smaller or older aircraft types, where there may be a lack of aircraft flight test data. However, the large number of footprint tests offered in some QTGs has given rise to concern.
- b. This guidance is applicable to FFS aeroplane, FTD aeroplane, FFS helicopter and FTD helicopter qualifications.

2. Terminology

- a. Footprint test - footprint test data are derived from a subjective assessment carried out on the actual FSTD requiring qualification. The assessment and

validation of these data are carried out by a pilot appointed by the competent authority. The resulting data are the footprint validation data for the FSTD concerned.

3. Recommendation

- a. It is permitted to use footprint data where flight test data is not available. Only when all other alternative possible sources of data have been thoroughly reviewed without success may a footprint test be acceptable, subject to a case-by-case review with the competent authorities concerned, and taking into consideration the level of qualification sought for the FSTD.
- b. Footprint test data should be:
 - i. constructed with initial conditions and FFS set up in the appropriate configuration (e.g. correct engine rating) for the required validation data;
 - ii. a manoeuvre representative of the particular aircraft being simulated;
 - iii. manually flown out by a type rated pilot who has current experience on type (see Note 1) and is deemed acceptable by the competent authority (see Note 2);
 - iv. constructed from validation data obtained from the footprint test manoeuvre and transformed into an automatic test;
 - v. an automatic test run as a fully integrated test with pilot control inputs; and
 - vi. automatically run for the initial qualification and recurrent evaluations.

Note 1: In this context, "current" refers to the pilot experience on the aircraft, and not to the Part-FCL standards.

Note 2: The same pilot should sign off the complete test as being fully representative.

- c. A clear rationale should be included in the QTG for each footprint test. These rationales should be added to and clearly recorded within the validation data roadmap (VDR) in accordance with and as defined in Appendix 2 to AMC1-CS-FSTD(A).300.
- d. Where the number of footprint tests is deemed by the competent authority to be excessive, the maximum level of qualification may be affected. The competent authority should review each area of validation test data where the use of footprint tests as the basis for the validation data is proposed. Consideration should be given to the extent to which footprint tests are used in any given area.

For example, it would be unacceptable if all or the vast majority of take-off tests were proposed as footprint tests, with little or no flight test data being presented. It should be recognised, therefore, that it may be necessary for new flight test data to be gathered if the use of footprint tests becomes excessive, not just overall, but also in specific areas.
- e. For recurrent evaluation purposes an essential match is to be expected. Validation tests using footprint data which do not provide an essential match should be justified to the satisfaction of the competent authority.
- f. The competent authority should be consulted at the point of definition of the aircraft data for qualification prior to the procurement of the device if footprint tests need to be used.

AMC1-OR.ATO.370 Interim FSTD qualification

NEW AIRCRAFT FULL FLIGHT SIMULATOR/FLIGHT TRAINING DEVICE (FFS/FTD) QUALIFICATION – ADDITIONAL INFORMATION

1. Aircraft manufacturers' final data for performance, handling qualities, systems or avionics are seldom available until well after a new or derivative aircraft has entered service. Because it is often necessary to begin flight crew training and certification several months prior to the entry of the first aircraft into service, it may be necessary to use aircraft manufacturer-provided preliminary data for interim qualification of FSTDs. This is consistent with the possible interim approval of operational suitability data (OSD) relative to FFS in the type certification process under Part-21.
2. In recognition of the sequence of events that should occur and the time required for final data to become available, the competent authority may accept the use of certain partially validated preliminary aircraft and systems data, and early release ('red label') avionics in order to permit the necessary programme schedule for training, certification and service introduction.
3. Organisations seeking qualification based on preliminary data should, however, consult the competent authority as soon as it is known that special arrangements will be necessary, or as soon as it is clear that preliminary data will need to be used for FSTD qualification. Aircraft and FSTD manufacturers should also be made aware of the needs and agree on the data plan and FSTD qualification plan. There should be periodic meetings to keep the interested parties informed of the project's status.
4. The precise procedure to be followed to gain competent authority acceptance to use preliminary data should vary from case to case and between aircraft manufacturers. Each aircraft manufacturer's new aircraft development and test programme is designed to suit the needs of the particular project and may not contain the same events or sequence of events as another manufacturer's programme or even the same manufacturer's programme for a different aircraft. Hence, there cannot be a prescribed invariable procedure for acceptance to use preliminary data, but instead there should be a statement describing the final sequence of events, data sources, and validation procedures agreed by the FSTD operator, the aircraft manufacturer, the FSTD manufacturer, and the competent authority. The approval by the Agency of the definition of scope of the aircraft validation source data to support the objective qualification as part of the OSD can also be an interim approval in case of preliminary data. The preliminary data to be used should be based on this interim approval.
5. There should be assurance that the preliminary data are the manufacturer's best representation of the aircraft and reasonable certainty that final data will not deviate to a large degree from these preliminary, but refined, estimates. First of all there should be an interim approval of operational suitability data (OSD) relative to flight simulators in the type certification process under Part-21. Furthermore, the data derived from these predictive or preliminary techniques should be validated by available sources including, at least, the following:
 - a. *Manufacturer's engineering report.* Such reports explain the predictive method used and illustrate past successes of the method on similar projects. For example, the manufacturer could show the application of the method to an earlier aircraft model or predict the characteristics of an earlier model and compare the results to final data for that model.
 - b. *Early flight tests results.* Such data will often be derived from aircraft certification tests, and should be used to maximum advantage for early FSTD validation. Certain critical tests, which would normally be done early in the aircraft certification programme, should be included to validate essential pilot training and certification manoeuvres. These include cases in which a pilot is expected to cope with an aircraft failure mode, including engine failures. The early data available will, however, depend on the aircraft manufacturer's flight test

programme design and may not be the same in each case. However it is expected that the flight test programme of the aircraft manufacturer includes provisions for generation of very early flight tests results for FSTD validation.

6. The use of preliminary data is not indefinite. The aircraft manufacturer's final data should be available within six months after the aircraft's first 'service entry' or as agreed by the competent authority, the organisation and the aircraft manufacturer, but usually not later than one year. When an organisation applies for an interim qualification using preliminary data, the organisation and the competent authority should agree upon the update programme. This should normally specify that the final data update will be installed in the FSTD within a period of six months following the final data release unless special conditions exist and a different schedule agreed. The FSTD performance and handling validation would then be based on data derived from flight tests. Initial aircraft systems data should be updated after engineering tests. Final aircraft systems data should also be used for FSTD programming and validation.
7. FSTD avionics should stay essentially in step with aircraft avionics (hardware and software) updates. The permitted time lapse between aircraft and FSTD updates is not a fixed time but should be minimal. It may depend on the magnitude of the update and whether the QTG and pilot training and certification are affected. Permitted differences in aircraft and FSTD avionics versions and the resulting effects on FSTD qualification should be agreed between the organisation and the competent authority. Consultation with the FSTD manufacturer is desirable throughout the agreement of the qualification process.
8. The following describes an example of the design data and sources which might be used in the development of an interim qualification plan:
 - a. The plan should consist of the development of a QTG based upon a mix of flight test and engineering simulation data. For data collected from specific aircraft flight tests or other flights, the required designed model and data changes necessary to support an acceptable proof of match(POM) should be generated by the aircraft manufacturer.
 - b. In order that the two sets of data are properly validated, the aircraft manufacturer should compare their simulation model responses against the flight test data, when driven by the same control inputs and subjected to the same atmospheric conditions as were recorded in the flight test. The model responses should result from a simulation where the following systems are run in an integrated fashion and are consistent with the design data released to the FSTD manufacturer:
 - i. Propulsion
 - ii. Aerodynamics
 - iii. Mass properties
 - iv. Flight controls
 - v. Stability augmentation
 - vi. Brakes and landing gear.
9. For the qualification of FSTD of new aircraft types, it may be beneficial that the services of a suitably qualified test pilot are used for the purpose of assessing handling qualities and performance evaluation.

GM1-OR.ATO.370 Interim FSTD qualification

NEW AIRCRAFT FFS/FTD QUALIFICATION – ADDITIONAL INFORMATION

1. A description of aircraft manufacturer-provided data needed for flight simulator modelling and validation is to be found in the IATA Document *Flight Simulator Design and Performance Data Requirements* (Edition 6 2000 or as amended).
2. The proof of match should meet the relevant tolerances in AMC-1-CS-FSTD(A).300 respectively AMC1-CS-FSTD(H).300.

AMC1-OR.ATO.375(b)(4) Duration and continued validity

The assigned person should have experience in FSTDs and training. The person may have FSTD experience or training experience with an education in FSTD evaluation procedures only, provided the other element of expertise is available within the organisation and a procedure for undertaking the annual review and reporting to the competent authority is documented within the compliance monitoring function.

AMC1-OR.ATO.380(b) Changes to the qualified FSTD

UPDATING AND UPGRADING EXISTING FSTDs

1. An update is a result of a change to the existing device where it retains its existing qualification level. The change may be certified through a recurrent inspection or an extra inspection if deemed necessary by the competent authority according to the applicable requirements in effect at the time of initial qualification.
2. If such a change to an existing device would imply that the performance of the device could no longer meet the requirements at the time of initial qualification, but that the result of the change would, in the opinion of the competent authority, clearly mean an improvement to the performance and training capabilities of the device altogether, then the competent authority might accept the proposed change as an update while allowing the device to retain its original qualification level.
3. An upgrade is defined as the raising of the qualification level of a device, or an increase in training credits, which can only be achieved by undergoing an initial qualification according to the latest applicable requirements.
4. As long as the qualification level of the device does not change, all changes made to the device should be considered to be updates pending approval by the competent authority.
5. An upgrade, and consequent initial qualification according to the latest applicable requirements, is only applicable when the organisation requests another qualification level (recategorisation) for the FSTD.

AMC1-OR.ATO.390 Record keeping

FSTD RECORDS

1. FSTD records to be kept should include:
 - a. for the lifetime of the device:
 - i. the MQTG of the initial evaluation;
 - ii. the qualification certificate of the initial evaluation; and
 - iii. the initial evaluation report;

- b. for a period of at least 5 years (in paper or electronic format):
 - i. recurrent QTG runs;
 - ii. recurrent evaluation reports;
 - iii. reports of internal functions and subjective testing;
 - iv. Technical log;
 - v. CMS report;
 - vi. audit schedule;
 - vii. evaluation programme;
 - viii. Management evaluation reports; and
 - ix. obsolete procedures and forms.

SECTION IV - ADDITIONAL REQUIREMENTS FOR ATOs PROVIDING SPECIFIC TYPES OF TRAINING

CHAPTER 1 – GENERAL DISTANCE LEARNING COURSES

AMC1-OR.ATO.400 General

DISTANCE LEARNING

1. A variety of methods is open to ATOs to present course material. It is, however, necessary for ATOs to maintain comprehensive records in order to ensure that students make satisfactory academic progress and meet the time constraints laid down in Part-FCL for the completion of modular courses.
2. The following are given as planning guidelines for ATOs developing the distance learning element of modular courses:
 - a. an assumption that a student will study for at least 15 hours per week;
 - b. an indication throughout the course material of what constitutes a week's study;
 - c. a recommended course structure and order of teaching;
 - d. one progress test for each subject for every 15 hours of study, which should be submitted to the ATO for assessment. Additional self-assessed progress tests should be completed at intervals of five to 10 study hours;
 - e. appropriate contact times throughout the course when a student can have access to an instructor by telephone, fax, email or the Internet;
 - f. measurement criteria to determine whether a student has satisfactorily completed the appropriate elements of the course to a standard that, in the judgement of the HT, or CGI, will enable them to be entered for the Part-FCL theoretical examinations with a good prospect of success; and
 - g. if the ATO provides the distance learning by help of IT solutions, for example the Internet, instructors should monitor students' progress by appropriate means.

CHAPTER 2 -ZERO FLIGHT-TIME TRAINING (ZFTT)

AMC1-OR.ATO.430 General

INITIAL APPROVAL

For an initial approval to conduct ZFTT, the operator should have held an air operator's certificate for commercial air transport for at least one year. This period may be reduced where the operator and the ATO have experience of type rating training.

AMC1-OR.ATO.435 Full Flight Simulator

Some equipment may be unserviceable provided that it is not required during the FFS lesson.

Subpart AeMC –Aero-medical Centres

SECTION I – GENERAL

AMC1-OR.AeMC.115 Application

GENERAL

1. The documentation for the approval of an AeMC should include the names and qualifications of all medical staff, a list of medical and technical facilities for initial class 1 aero-medical examinations and of supporting specialist consultants.
2. Clinical attachments to hospitals or medical institutions should consist of a formal agreement with the hospital or medical institution.

AMC1-OR.AeMC.135 Continued validity

EXPERIENCE

1. At least 200 class 1 aero-medical examinations and assessments should be performed at the AeMC every year.
2. In Member States where the number of aero-medical examinations and assessments mentioned in 1. cannot be reached due a low number of professional pilots, a proportionate number of class 1 aero-medical examinations and assessments should be performed.
3. In these cases, the continuing experience of the head of the AeMC and aero-medical examiners on staff should also be ensured by them performing aero-medical examinations and assessments for:
 - a. class 2 medical certificates as established in Part-MED; and/or
 - b. third country class 1 medical certificates.
4. Aero-medical research including publication in peer reviewed journals may also be accepted as contributing to the continued experience of the head of, and aero-medical examiners at, an AeMC.

SECTION II – MANAGEMENT

GM1-OR.AeMC.200 Management system

RESEARCH

1. If aero-medical research is conducted at an AeMC, its management system should include processes to conduct that research and publish the results.

AMC1-OR.AeMC.210 Personnel requirements

GENERAL

1. An aero-medical examiner (AME) should have held class 1 privileges for at least five years and have performed at least 200 aero-medical examinations for a class 1 medical certificate before being nominated as head of an AeMC.
2. An AeMC may provide practical AME training for persons fully qualified and licensed in medicine.

AMC1-OR.AeMC.215 Facility requirements

MEDICAL-TECHNICAL FACILITIES

The medical-technical facilities of an AeMC should consist of the equipment of a general medical practice and, in addition, of:

1. Cardiology.
Facilities to perform:
 - a. 12-lead resting ECG;
 - b. stress ECG;
 - c. 24-hour blood pressure monitoring; and
 - d. 24-hour heart rhythm monitoring.
2. Ophthalmology.
Facilities for the examination of:
 - a. near, intermediate and distant vision;
 - b. external eye, anatomy, media and funduscopy;
 - c. ocular motility;
 - d. binocular vision;
 - e. colour vision (anomaloscopy or equivalent);
 - f. visual fields;
 - g. refraction; and
 - h. heterophoria.
3. Hearing
 - a. pure-tone audiometer
4. Otorhinolaryngology.
Facilities for the clinical examination of mouth and throat and:
 - a. otoscopy;
 - b. rhinoscopy;
 - c. tympanometry or equivalent; and
 - d. clinical assessment of vestibular system.
5. Examination of pulmonary function.
 - a. spirometry
6. The following facilities should be available at the AeMC or on a contractual basis:
 - a. clinical laboratory facilities; and
 - b. ultrasound of the abdomen.