Acceptable Means of Compliance (AMC)

and

Guidance Material (GM)

to

Annex VII Part - ORA

(ORGANISATION REQUIREMENTS for AIRCREW)

Decision 2014 / 021 / R *of 1 April 2014*

of the Executive Director of the EASA
amending Acceptable Means of Compliance and Guidance Material to Part - ORA of Commission Regulation (EU) N° 1178 / 2011 "AMC and GM to Part-ORA – **Amendment 2** "

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SUBPART GEN. GENERAL REQUIREMENTS

Section I. GENERAL

GM 1. **ORA. GEN. 005 Definitions**

The following provides a list of acronyms used throughout this Annex :

(A) Aeroplane
(H) Helicopter
ACAS Airborne Collision Avoidance System
AD Airworthiness Directive
AIS Aeronautical Information Service
AM Accountable Manager
AMC Acceptable Means of Compliance
ARA Authority Requirements for Aircrew
ATA Air Transport Association
ATC Air Traffic Control
ATO Approved Training Organization
ATPL Airline Transport Pilot Licence

BITD Basic Instrument Training Device
BPL Balloon Pilot Licence

CBT Computer - Based Training
CFI Chief Flying Instructor
CM Compliance Monitoring
CMP Compliance Monitoring Programme
CMS Compliance Monitoring System
COP Code of Practice
CRM Crew Resource Management
CS - FSTD (A) Certification Specifications for Aeroplane Flight Simulation Training Devices
CS - FSTD (H) Certification Specifications for Helicopter FSTD
CTKI Chief Theoretical Knowledge Instructor

DG Dangerous Goods

EC European Community
ERP Emergency Response Plan
ETOPS Extended Range Operations with Twin - Engined Aeroplanes

FATO Final Approach and Take - off Area
FFS Full Flight Simulator
FMGC Flight Management and Guidance Computer
FMS Flight Management System
FNPT Flight Navigation and Procedures Trainer
FSTD Flight Simulation Training Device
FTD Flight Training Device
FTE Full - Time Equivalent
FTI Flight Test Instructor

GM	Guidance Material
GMP	General Medical Practitioner
HEMS	Helicopter Emergency Medical Service
HHO	Helicopter Hoist Operation
HT	Head of Training
IFR	Instrument Flight Rules
IMC	Instrument Meteorological Conditions
IOS	Instructor Operation Station
IR	Implementing Rule
LAPL	Light Aircraft Pilot Licence
LIFUS	Line Flying Under Supervision
LVO	Low Visibility Operation
MCC	Multi - Crew Cooperation
MMEL	Master Minimum Equipment List
MPA	Multi - Pilot Aeroplane
MPL	Multi - Crew Pilot Licence
NVIS	Night Vision Imaging System
OPC	Operator Proficiency Check
ORA	Organization Requirements for Aircrew
OSD	Operational Suitability Data
OTD	Other Training Device
PBN	Performance - Based Navigation
PF	Pilot Flying
PIC	Pilot - in - Command
PPL	Private Pilot Licence
QTG	Qualification Test Guide
SMM	Safety Management Manual
SOP	Standard Operating Procedure
SPL	Sailplane Pilot Licence
TAWS	Terrain Awareness Warning System
TRE	Type Rating Examiner
TRI	Type Rating Instructor
VDR	Validation Data Roadmap
ZFTT	Zero Flight - Time Training

AMC 1. **ORA. GEN. 120 (a) Means of Compliance**

DEMONSTRATION of COMPLIANCE

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

AMC 1. **ORA. GEN. 125 Terms of Approval and Privileges of an Organization**

MANAGEMENT SYSTEM DOCUMENTATION

The management system documentation should contain the privileges and detailed scope of activities for which the organization is certified, as relevant to the applicable requirements. The scope of activities defined in the management system documentation should be consistent with the terms of approval.

AMC 1. **ORA. GEN. 130 Changes to Organizations**

APPLICATION TIME FRAMES

a) The application for the amendment of an organization certificate should be submitted at least 30 days before the date of the intended changes ;

b) In the case of a planned change of a nominated person, the organization should inform the GDCA at least 10 days before the date of the proposed change ;

c) Unforeseen changes should be notified at the earliest opportunity, in order to enable the GDCA to determine continued compliance with the applicable requirements and to amend, if necessary, the organization certificate and related terms of approval.

GM 1. **ORA. GEN. 130 (a) Changes to Organizations**

GENERAL

a) Typical examples of changes that may affect the certificate or the terms of approval are listed below :

1) the name of the organization ;
2) the organization’s principal place of business ;
3) the organization’s scope of activities ;
4) additional locations of the organization ;
5) the accountable manager ;
6) any of the persons referred to in ORA. GEN. 210 (a) and (b) ;
7) the organization’s documentation as required by this Part, safety policy and procedures ;
8) the facilities.

b) Prior approval by the GDCA is required for any changes to the organization’s procedure describing how changes not requiring prior approval will be managed and notified to the GDCA ;

c) Changes requiring prior approval may only be implemented upon receipt of formal approval by the GDCA.

GM 2. **ORA. GEN. 130 (a) Changes to Organizations**

CHANGE of NAME of the ORGANISATION

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

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

AMC 1. **ORA. GEN. 150 (b) Findings**

GENERAL

The corrective action plan defined by the organization should address the effects of the non - conformity, as well as its root - cause.

GM 1. **ORA. GEN. 150 Findings**

GENERAL

a) Corrective action is the action to eliminate or mitigate the root cause(s) and prevent recurrence of an existing detected non - compliance or other undesirable condition or situation ;

b) Proper determination of the root cause is crucial for defining effective corrective actions.

AMC 1. **ORA. GEN. 160 Occurrence Reporting**

GENERAL

a) The organization should report all occurrences defined in AMC 20 - 8, and as required by the applicable national rules on occurrence reporting in civil aviation ;

b) In addition to the reports required by AMC 20 - 8, the organization should report volcanic ash clouds encountered during flight.

Section II. Management

AMC 1. **ORA. GEN. 200 (a)(1) ; (2) ; (3) ; (5) Management System**

NON - COMPLEX ORGANISATIONS - GENERAL

a) Safety risk management may be performed using hazard checklists or similar risk management tools or processes, which are integrated into the activities of the organization ;

b) The organization should manage safety risks related to a change. The management of change should be a documented process to identify external and internal change that may have an adverse effect on safety. It should make use of the organization's existing hazard identification, risk assessment and mitigation processes ;

c) The organization should identify a person who fulfils the role of safety manager and who is responsible for coordinating the safety management system. This person may be the accountable manager or a person with an operational role in the organization ;

d) Within the organization, responsibilities should be identified for hazard identification, risk assessment and mitigation ;

e) The safety policy should include a commitment to improve towards the highest safety standards, comply with all applicable legal requirements, meet all applicable standards, consider best practices and provide appropriate resources ;

f) The organization should, in cooperation with other stakeholders, develop, coordinate and maintain an emergency response plan (ERP) that ensures orderly and safe transition from normal to emergency operations and return to normal operations. The ERP should provide the actions to be taken by the organization or specified individuals in an emergency and reflect the size, nature and complexity of the activities performed by the organization.

AMC 1. **ORA. GEN. 200 (a)(1) Management System**

COMPLEX ORGANISATIONS - ORGANISATION and ACCOUNTABILITIES

The management system of an organization should encompass safety by including a safety manager and a safety review board in the organizational structure.

a) Safety Manager.

1) the safety manager should act as the focal point and be responsible for the development, administration and maintenance of an effective safety management system ;

2) the functions of the safety manager should be to :

(i) facilitate hazard identification, risk analysis and management ;

(ii) monitor the implementation of actions taken to mitigate risks, as listed in the safety action plan ;

(iii) provide periodic reports on safety performance ;

(iv) ensure maintenance of safety management documentation ;

(v) ensure that there is safety management training available and that it meets acceptable standards ;

(vi) provide advice on safety matters ; *and*

(vii) ensure initiation and follow-up of internal occurrence / accident investigations.

b) Safety Review Board

1) the Safety review board should be a high level committee that considers matters of strategic safety in support of the accountable manager's safety accountability ;

2) the board should be chaired by the accountable manager and be composed of heads of functional areas ;

3) the safety review board should monitor :

(i) safety performance against the safety policy and objectives ;

(ii) that any safety action is taken in a timely manner ; *and*

(iii) the effectiveness of the organization's safety management processes.

c) The safety review board should ensure that appropriate resources are allocated to achieve the established safety performance ;

d) The safety manager or any other relevant person may attend, as appropriate, safety review board meetings. He / she may communicate to the accountable manager all information, as necessary, to allow decision making based on safety data.

GM 1. **ORA. GEN. 200 (a)(1) Management System**

SAFETY MANAGER

a) Depending on the size of the organization and the nature and complexity of its activities, the safety manager may be assisted by additional safety personnel for the performance of all safety management related tasks ;

b) Regardless of the organizational set-up it is important that the safety manager remains the unique focal point as regards the development, administration and maintenance of the organization's safety management system.

GM 2. **ORA. GEN. 200 (a)(1) Management System**

COMPLEX ORGANISATIONS - SAFETY ACTION GROUP

a) A safety action group may be established as a standing group or as an ad-hoc group to assist or act on behalf of the safety review board ;

b) More than one safety action group may be established depending on the scope of the task and specific expertise required ;

c) The safety action group should report to and take strategic direction from the safety review board and should be comprised of managers, supervisors and personnel from operational areas ;

d) The safety action group should :

that safety 1) monitor operational safety ;

2) resolve identified risks ;

3) assess the impact on safety of operational changes ; *and*

4) ensure actions are implemented within agreed timescales.

e) The safety action group should review the effectiveness of previous safety recommendations and safety promotion.

COMPLEX ORGANISATIONS - SAFETY POLICY

a) The safety policy should :

1) be endorsed by the accountable manager ;

2) reflect organizational commitments regarding safety and its proactive and systematic management ;

3) be communicated, with visible endorsement, throughout the organization ; *and*
4) include safety reporting principles.

b) The safety policy should include a commitment :
1) to improve towards the highest safety standards ;
2) to comply with all applicable legislation, meet all applicable standards and consider best practices ;
3) to provide appropriate resources ;
4) to enforce safety as one primary responsibility of all managers ; *and*
5) not to blame someone for reporting something which would not have been otherwise detected.

c) Senior management should :
1) continually promote the safety policy to all personnel and demonstrate their commitment to it ;
2) provide necessary human and financial resources for its implementation ; *and*
3) establish safety objectives and performance standards.

GM 1. **ORA. GEN. 200 (a)(2) Management System**
SAFETY POLICY

The safety policy is the means whereby the organization states its intention to maintain and, where practicable, improve safety levels in all its activities and to minimize its contribution to the risk of an aircraft accident as far as is reasonably practicable.
The safety policy should state that the purpose of safety reporting and internal investigations is to improve safety, not to apportion blame to individuals.

AMC 1. **ORA. GEN. 200 (a)(3) Management System**
COMPLEX ORGANIZATIONS - SAFETY RISK MANAGEMENT

a) Hazard identification processes.
1) reactive and proactive schemes for hazard identification should be the formal means of collecting, recording, analyzing, acting on and generating feedback about hazards and the associated risks that affect the safety of the operational activities of the organization ;
2) all reporting systems, including confidential reporting schemes, should include an effective feedback process.
b) Risk assessment and mitigation processes.
1) a formal risk management process should be developed and maintained that ensures analysis *(in terms of likelihood and severity of occurrence),* assessment *(in terms of tolerability)* and control *(in terms of mitigation)* of risks to an acceptable level.
2) the levels of management who have the authority to make decisions regarding the tolerability of safety risks, in accordance with (b)(1), should be specified.
c) Internal safety investigation.
1) the scope of internal safety investigations should extend beyond the scope of occurrences required to be reported to the GDCA.
d) Safety performance monitoring and measurement.

1) safety performance monitoring and measurement should be the process by which the safety performance of the organization is verified in comparison to the safety policy and objectives.
2) this process should include :
(i) safety reporting ;
(ii) safety studies, that is, rather large analyses encompassing broad safety concerns ;
(iii) safety reviews including trends reviews, which would be conducted during introduction and deployment of new technologies, change or implementation of procedures, or in situations of structural change in operations ;
(iv) safety audits focusing on the integrity of the organization's management system, and periodically assessing the status of safety risk controls ; *and*
(v) safety surveys, examining particular elements or procedures of a specific operation, such as problem areas or bottlenecks in daily operations, perceptions and opinions of operational personnel and areas of dissent or confusion.

e) The management of change.

The organization should manage safety risks related to a change. The management of change should be a documented process to identify external and internal change that may have an adverse effect on safety. It should make use of the organization's existing hazard identification, risk assessment and mitigation processes ;

f) Continuous improvement.

The organization should continuously seek to improve its safety performance.

Continuous improvement should be achieved through :
1) proactive and reactive evaluations of facilities, equipment, documentation and procedures through safety audits and surveys ;
2) proactive evaluation of individuals' performance to verify the fulfillment of their safety responsibilities ; *and*
3) reactive evaluations in order to verify the effectiveness of the system for control and mitigation of risk.

g) The Emergency Response Plan (ERP).

1) an ERP should be established that provides the actions to be taken by the organization or specified individuals in an emergency. The ERP should reflect the size, nature and complexity of the activities performed by the organization ;
2) the ERP should ensure :
(i) an orderly and safe transition from normal to emergency operations ;
(ii) safe continuation of operations or return to normal operations as soon as practicable ;
(iii) coordination with the emergency response plans of other organizations, where appropriate.

GM 1. **ORA. GEN. 200 (a)(3) Management System**

INTERNAL OCCURRENCE REPORTING SCHEME

a) The overall purpose of the scheme is to use reported information to improve the level of safety performance of the organization and not to attribute blame ;

b) The objectives of the scheme are to :

1) enable an assessment to be made of the safety implications of each relevant incident and accident, including previous similar occurrences, so that any necessary action can be initiated ;

2) ensure that knowledge of relevant incidents and accidents is disseminated, so that other persons and organizations may learn from them.

c) The scheme is an essential part of the overall monitoring function and it is complementary to the normal day-to-day procedures and " control " systems and is not intended to duplicate or supersede any of them. The scheme is a tool to identify those instances where routine procedures have failed ;

d) All occurrence reports judged reportable by the person submitting the report should be retained as the significance of such reports may only become obvious at a later date.

GM 2. **ORA. GEN. 200 (a)(3) Management System**

GM 3. **ORA. GEN. 200 (a)(3) Management System**

APPROVED TRAINING ORGANISATIONS - RISK MANAGEMENT of FLIGHT OPERATIONS with KNOWN or FORECAST VOLCANIC ASH CONTAMINATION

a) *Responsibilities.*

The ATO is responsible for the safety of its operations, including within an area with known or forecast volcanic ash contamination.

The ATO should complete this assessment of safety risks related to known or forecast volcanic ash contamination as part of its management system before initiating operations into airspace forecast to be or aerodromes / operating sites known to be contaminated with volcanic ash. This process is intended to ensure the ATO takes into account the likely accuracy and quality of the information sources it uses in its management system and to demonstrate its own competence and capability to interpret data from different sources in order to achieve the necessary level of data integrity reliably and correctly resolve any conflicts among data sources that may arise.

In order to decide whether or not to operate into airspace forecast to be or aerodromes / operating sites known to be contaminated with volcanic ash, the ATO should make use of the safety risk assessment within its management system as required by ORA. GEN. 200.

The ATO's safety risk assessment should take into account all relevant data including data from the type certificate holders (TCHs) regarding the susceptibility of the aircraft they operate to volcanic cloud-related airworthiness effects, the nature and severity of these effects and the related pre-flight, in-flight and post-flight precautions to be observed by the ATO.

The ATO should ensure that personnel required to be familiar with the details of the safety risk assessments receives all relevant information (both pre-flight and in-flight) in order to be in a position to apply appropriate mitigation measures as specified by the safety risk assessments.

b) *Procedures.*

The ATO should have documented procedures for the management of operations into airspace forecast to be or aerodromes / operating sites known to be contaminated with volcanic ash. These procedures should ensure that, at all times, flight operations remain within the accepted safety boundaries as established through the management system allowing for any variations in information sources, equipment, operational experience or organization. Procedures should include those for flight crew and any other relevant personnel such that they are in a position to evaluate correctly the risk of flights into airspace forecast to be contaminated by volcanic ash and to plan accordingly.

Continuing airworthiness personnel should be provided with procedures allowing them to correctly assess the need for and to execute relevant maintenance or continuing airworthiness interventions.

The ATO should retain sufficient qualified a nd competent staff to generate well supported operational risk management decisions and ensure that its staff are appropriately trained and current. It is recommended that the ATO make the necessary arrangements for its relevant staff to take up opportunities to be involved in volcanic ash exercises conducted in their areas of operation.

c) *Volcanic Activity Information and the ATO's Potential Response.*

Before and during operations, information valuable to the ATO is generated by various volcano agencies worldwide. The ATO's risk assessment and mitigating actions need to take account of and respond appropriately to the information likely to be available during each phase of the eruptive sequence from pre-eruption through to end of eruptive activity. It is nevertheless noted that eruptions rarely follow a deterministic pattern of behaviour. A typical ATO's response may consist of the following :

1) Pre – eruption.

The ATO should have in place a robust mechanism for ensuring that it is constantly vigilant for any alerts of pre-eruption volcanic activity relevant to its operations. The staff involved need to understand the threat to safe operations that such alerts represent. An ATO whose areas of activity include large, active volcanic areas for which immediate International Airways Volcano Watch (IAVW) alerts may not be available, should define its strategy for capturing information about increased volcanic activity before pre-eruption alerts are generated. For example, an ATO may combine elevated activity information with information concerning the profile and history of the volcano to determine an operating policy, which could include re-routing or restrictions at night. This would be useful when dealing with the 60 % of volcanoes which are unmonitored. Such an ATO should also ensure that its crews are aware that they may be the first to observe an eruption and so need to be vigilant and ready to ensure that this information is made available for wider dissemination as quickly as possible ;

2) Start of an Eruption.

Given the likely uncertainty regarding the status of the eruption during the early stages of an event and regarding the associated volcanic cloud, the ATO's procedures should include a requirement for crews to initiate re-routes to avoid the affected airspace. The ATO should ensure that flights are planned to remain clear of the affected areas and that consideration is given to available aerodromes / operating sites and fuel requirements. It is expected that the following initial actions will be taken by the ATO :

(i) determine if any aircraft in flight could be affected, alert the crew and provide advice on re-routing as required ;

(ii) alert management ;

(iii) for flight departures, brief flight crew and revise flight and fuel planning in accordance with the safety risk assessment ;

(iv) alert flight crew to the need for increased monitoring of information *(e. g. Special Air Report (AIREP), Volcanic Activity Report (VAR), Significant Weather Information (SIGMET), NOTAMs and company messages) ;*

(v) initiate the gathering of all data relevant to determining the risk ; *and*

(vi) apply mitigations identified in the safety risk assessment.

3) On - going Eruption.

As the eruptive event develops, the ATO can expect the responsible Volcanic Ash Advisory Centre (VAAC) to provide volcanic ash advisory messages (VAA / VAGs) defining, as accurately as possible, the vertical and horizontal extent of areas and layers of volcanic clouds.

As a minimum, the ATO should monitor, and take account of, this VAAC information as well as of relevant SIGMETs and NOTAMs. Other sources of information are likely to be available such as VAR / AIREPs, satellite imagery and a range of other information from State and commercial organizations. The ATO should plan its operations in accordance with its safety risk assessment taking into account the information that it considers accurate and relevant from these additional sources. The ATO should carefully consider and resolve differences or conflicts among the information sources, notably between published information and observations (pilot reports, airborne measurements, etc.. .). Given the dynamic nature of the volcanic hazards, the ATO should ensure that the situation is monitored closely and operations adjusted to suit changing conditions. The ATO should be aware that, depending on the State concerned the affected or danger areas may be established and presented in a different way than the one currently used in Europe as described in EUR Doc 019-NAT Doc 006. The ATO should require reports from its crews concerning any encounters with volcanic emissions. These reports should be passed immediately to the appropriate Air Traffic Services (ATS) unit and to the GDCA.

For the purpose of flight planning, the ATO should treat the horizontal and vertical limits of the temporary danger area (TDA) or airspace forecast to be contaminated by volcanic ash as applicable, to be over-flown as it would mountainous terrain, modified in accordance with its safety risk assessment. The ATO should take account of the risk of cabin depressurization or engine failure resulting in the inability to maintain level flight above a volcanic cloud. Additional Minimum Equipment List (MEL) provisions, if applicable, should be considered in consultation with the TCHs. Flying below a volcanic ash contaminated airspace should be considered on a case by case basis. It should only be planned to reach or leave an aerodrome / operating site close to the boundary of this airspace or where the ash contamination is very high and stable. The establishment of Minimum Sector Altitude (MSA) and the availability of aerodromes / operating sites should be considered.

d) *Safety Risk Assessment.*

When directed specifically at the issue of intended flight into airspace forecast to be or aerodromes / operating sites known to be contaminated with volcanic ash, the process should involve the following :

1) Identifying the Hazards.

The generic hazard, in the context of this document, is airspace forecast to be or aerodromes / operating sites known to be contaminated with volcanic ash, and whose characteristics are harmful to the airworthiness and operation of the aircraft. This GM is referring to volcanic ash contamination since it is the most significant hazard for flight operations in the context of a volcanic eruption. Nevertheless, it might not be the only hazard and therefore the operator should consider additional hazards which could have an adverse effect on aircraft structure or passengers safety such as gases. Within this generic hazard, the ATO should develop its own list of specific hazards taking into account its specific aircraft, experience, knowledge and type of operation, and any other relevant data stemming from previous eruptions.

2) Considering the Severity and Consequences of the Hazard Occurring (i. e. the nature and actual level of damage expected to be inflicted on the particular aircraft from exposure to that volcanic ash cloud) ;

3) Evaluating the Likelihood of Encountering Volcanic Ash Clouds with Characteristics Harmful to the Safe Operation of the Aircraft.

For each specific hazard within the generic hazard, the likelihood of adverse consequences should be assessed, either qualitatively or quantitatively.

4) Determining whether the Consequent Risk is Acceptable and within the ATO's Risk Performance Criteria.

At this stage of the process, the safety risks should be classified as acceptable or unacceptable. The assessment of tolerability will be subjective, based on qualitative data and expert judgement, until specific quantitative data are available in respect of a range of parameters.

5) Taking Action to reduce the Safety Risk to a Level that is Acceptable to the ATO's Management.

Appropriate mitigation for each unacceptable risk identified should then be considered in order to reduce the risk to a level acceptable to the ATO's management.

e) *Procedures to be Considered when Identifying Possible Mitigations Actions.*

When conducting a volcanic ash safety risk assessment, the ATO should consider the following non-exhaustive list of procedures and processes as mitigation :

1) Type Certificate Holders.

Obtaining advice from the TCHs and other engineering sources concerning operations in potentially contaminated airspace and / or aerodromes / operating sites contaminated by volcanic ash. This advice should set out :

(i) the features of the aircraft that are susceptible to airworthiness effects related to volcanic ash ;

(ii) the nature and severity of these effects ;

(iii) the effect of volcanic ash on operations to / from contaminated aerodromes / operating sites, including the effect on take-off and landing aircraft performance ;

(iv) the related pre-flight, in-flight and post-flight precautions to be observed by the ATO including any necessary amendments to aircraft operating manuals, aircraft maintenance manuals, master minimum equipment list / dispatch deviation or equivalents required to support the ATO ; *and*

(v) the recommended inspections associated with inadvertent operations in volcanic ash contaminated airspace and operations to / from volcanic ash contaminated aerodromes / operating sites ; this may take the form of instructions for continuing airworthiness or other advice.

2) ATO / Contracted Organizations' Personnel.

Definition of procedures for flight planning and operations ensuring that :

(i) flight crews are in a position to evaluate correctly the risk of encountering volcanic ash contaminated airspace, or aerodromes / operating sites, and can plan accordingly ;

(ii) flight planning and operational procedures enable crews to avoid areas and aerodromes / operating sites with unacceptable volcanic ash contamination ;

(iii) flight crew are aware of the possible signs of entry into a volcanic ash cloud and execute the associated procedures ;

(iv) continuing airworthiness personnel are able to assess the need for, and to execute, any necessary maintenance or other required interventions ; *and*

(v) crews are provided with appropriate aircraft performance data when operating to / from aerodromes / operating sites contaminated with volcanic ash.

3) Provision of Enhanced Flight Watch.

This should ensure :

(i) close and continuous monitoring of VAA, VAR / AIREP, SIGMET, NOTAM and ASHTAM and other relevant information, and information from crews, concerning the volcanic ash cloud hazard ;

(ii) access to plots of the affected areas from SIGMETs, NOTAMs and other relevant information for crews ; *and*

(iii) communication of the latest information to crews in a timely fashion.

4) Flight Planning.

Flexibility of the process to allow re-planning at short notice should conditions change.

5) Departure, Destination and Alternate Aerodromes.

For the airspace to be traversed, or the aerodromes / operating sites in use, parameters to evaluate and take account of :

(i) the probability of contamination ;

(ii) any additional aircraft performance requirements ;

(iii) required maintenance considerations ;

(iv) fuel requirements for re-routing and extended holding.

6) Routing Policy.

Parameters to evaluate and take account of :

(i) the shortest period in and over the forecast contaminated area ;

(ii) the hazards associated with flying over the contaminated area ;

(iii) drift down and emergency descent considerations ;

(iv) the policy for flying below the contaminated airspace and the associated hazards.

7) Diversion Policy.

Parameters to evaluate and take account of :

(i) maximum allowed distance from a suitable aerodrome / operating site ;

(ii) availability of aerodromes / operating sites outside the forecast contaminated area ;

(iii) diversion policy after an volcanic ash encounter.

8) Minimum Equipment List.

Additional provisions in the MEL, if applicable, for dispatching aircraft with unserviceabilities that might affect the following non-exhaustive list of systems :

(i) air conditioning packs ;

(ii) engine bleeds ;

(iii) pressurization system ;

(iv) electrical power distribution system ;

(v) air data system ;

(vi) standby instruments ;

(vii) navigation systems ;

(viii) de-icing systems ;

(ix) engine driven generators ;

(x) auxiliary power unit (APU) ;

(xi) airborne collision avoidance system (ACAS) ;

(xii) terrain awareness warning system (TAWS) ;

(xiii) autoland systems ;

(xiv) provision of crew oxygen ;

(xv) supplemental oxygen for passengers.

9) Standard Operating Procedures.

Crew training to ensure they are familiar with normal and abnormal operating procedures and particularly any changes regarding but not limited to :

(i) pre-flight planning ;

(ii) in-flight monitoring of volcanic ash cloud affected areas and avoidance procedures ;

(iii) diversion ;

(iv) communications with ATC ;

(v) in-flight monitoring of engine and systems potentially affected by volcanic ash cloud contamination ;

(vi) recognition and detection of volcanic ash clouds and reporting procedures ;

(vii) in-flight indications of a volcanic ash cloud encounter ;

(viii) procedures to be followed if a volcanic ash cloud is encountered ;

(ix) unreliable or erroneous airspeed ;

(x) non-normal procedures for engines and systems potentially affected by volcanic ash cloud contamination ;

(xi) engine-out and engine relight ;

(xii) escape routes ; *and*

(xiii) operations to / from aerodromes / operating sites contaminated with volcanic ash.

10) Provision for Aircraft Technical Log.

This should ensure :

(i) systematic entry in the aircraft continuing airworthiness records or aircraft log if available related to any actual or suspected volcanic ash encounter whether in-flight or at an aerodrome / operating site ; *and*

(ii) checking, prior to flight, of the completion of maintenance actions related to an entry in the continuing airworthiness records or aircraft log if available for a volcanic ash cloud encounter on a previous flight.

11) Incident Reporting.

Crew requirements for :

(i) reporting an airborne volcanic ash cloud encounter (VAR) ;

(ii) post-flight volcanic ash cloud reporting (VAR) ;

(iii) reporting non encounters in airspace forecast to be contaminated ; *and*

(iv) filing a mandatory occurrence report in accordance with ORA. GEN. 160.

12) Continuing Airworthiness Procedures.

Procedures when operating in or near areas of volcanic ash cloud contamination :

(i) enhancement of vigilance during inspections and regular maintenance and appropriate adjustments to maintenance practices ;

(ii) definition of a follow-up procedure when a volcanic ash cloud encounter has been reported or suspected ;

(iii) thorough investigation for any sign of unusual or accelerated abrasions or corrosion or of volcanic ash accumulation ;

(iv) reporting to TCHs and the relevant authorities observations and experiences from operations in areas of volcanic ash cloud contamination ;

(v) completion of any additional maintenance recommended by the TCH or by the competent authority.

f) *Reporting.*

The ATO should ensure that reports are immediately submitted to the nearest ATS unit using the VAR / AIREP procedures followed up by a more detailed VAR on landing together with, as applicable, a report as defined in CR - EU No 996 / 2010 and Directive 2003 / 42 / EC, and an aircraft technical log entry for :

1) any incident related to volcanic clouds ;

2) any observation of volcanic ash activity ; *and*

3) anytime that volcanic ash is not encountered in an area where it was forecast to be.

g) *Additional Guidance.*

Further guidance on volcanic ash safety risk assessment is given in ICAO Doc. 9974 *(Flight Safety and Volcanic Ash – Risk Management of Flight Operations with known or Forecast Volcanic Ash Contamination).*

GM 4. **ORA. GEN. 200 (a)(3) Management System**

SAFETY RISK ASSESSMENT – RISK REGISTER

The results of the assessment of the potential adverse consequences or outcome of each hazard may be recorded by the ATO in a risk register, an example of which is provided below.

HAZARD		**Incident Sequence Description**	**Existing Controls**	**Outcome (pre - mitigation)**			**Additional Mitigation required**	**Outcome (post - mitigation)**			**Action & owners**	**Monitoring & Review requirements**
N^{0}	**Description**			Severity	Likelihood	Risk		Severity	Likelihood	Risk		

AMC 1. **ORA. GEN. 200 (a)(4) Management System**

TRAINING and COMMUNICATION on SAFETY

a) Training.

1) all personnel should receive safety training as appropriate for their safety responsibilities ;

2) adequate records of all safety training provided should be kept.

b) Communication.

1) the organization should establish communication about safety matters that :

(i) ensures that all personnel are aware of the safety management activities as appropriate for their safety responsibilities ;

(ii) conveys safety critical information, especially relating to assessed risks and analyzed hazards ;

(iii) explains why particular actions are taken ; *and*

(iv) explains why safety procedures are introduced or changed.

2) regular meetings with personnel where information, actions and procedures are discussed may be used to communicate safety matters.

GM 1. **ORA. GEN. 200 (a)(4) Management System**

TRAINING and COMMUNICATION on SAFETY

The safety training programme may consist of self-instruction via a media *(newsletters, flight safety magazines),* class-room training, e-learning or similar training provided by training service providers.

AMC 1. **ORA. GEN. 200 (a)(5) Management System**

ORGANISATION'S MANAGEMENT SYSTEM DOCUMENTATION

a) The organization's management system documentation should at least include the following information :

1) a statement signed by the accountable manager to confirm that the organization will continuously work in accordance with the applicable requirements and the organization's documentation as required by this Part ;

2) the organization's scope of activities ;

3) the titles and names of persons referred to in ORA.GEN.210 (a) and (b) ;

4) an organization chart showing the lines of responsibility between the persons referred to in ORA.GEN.210 ;

5) a general description and location of the facilities referred to in ORA.GEN.215 ;

6) procedures specifying how the organization ensures compliance with the applicable requirements ;

7) the amendment procedure for the organization's management system documentation.

b) The organization's management system documentation may be included in a separate manual or in *(one of)* the manual(s) as required by the applicable Subpart(s). A cross reference should be included.

GM 1. **ORA. GEN. 200 (a)(5) Management System**

ORGANISATION'S MANAGEMENT SYSTEM DOCUMENTATION

a) It is not required to duplicate information in several manuals. The information may be contained in any of the organization manuals *(e. g. operations manual, training manual),* which may also be combined ;

b) The organization may also choose to document some of the information required to be documented in separate documents *(e. g. procedures).* In this case, it should ensure that manuals contain adequate references to any document kept separately. Any such documents are then to be considered an integral part of the organization's management system documentation.

AMC 1. **ORA. GEN. 200 (a)(5) Management System**

COMPLEX ORGANIZATIONS – ORGANIZATION'S SAFETY MANAGEMENT MANUAL

a) The Safety Management Manual (SMM) should be the key instrument for communicating the approach to safety for the whole of the organization. The SMM should document all aspects of safety management, including the safety policy, objectives, procedures and individual safety responsibilities ;

b) The contents of the Safety Management Manual should include all of the following :

1) scope of the Safety Management System ;
2) safety policy and objectives ;
3) safety accountability of the accountable manager ;
4) safety responsibilities of key safety personnel ;
5) documentation control procedures ;
6) hazard identification and risk management schemes ;
7) safety action planning ;
8) safety performance monitoring ;
9) incident investigation and reporting ;
10) emergency response planning ;
11) management of change *(including organizational changes with regard to safety responsibilities) ;*
12) safety promotion.

c) The SMM may be contained in *(one of)* the manual(s) of the organization.

AMC 1. **ORA. GEN. 200 (a)(6) Management System**

COMPLIANCE MONITORING - GENERAL

a) Compliance monitoring.

The implementation and use of a compliance monitoring function should enable the organization to monitor compliance with the relevant requirements of this Part and other applicable Parts ;

1) the organization should specify the basic structure of the compliance monitoring function applicable to the activities conducted ;

2) the compliance monitoring function should be structured according to the size of the organization and the complexity of the activities to be monitored.

b) Organizations should monitor compliance with the procedures they have designed to ensure safe activities. In doing so, they should as a minimum, and where appropriate, monitor :

1) privileges of the organization ;
2) manuals, logs, and records ;
3) training standards ;
4) management system procedures and manuals.

c) Organizational set up.

1) to ensure that the organization continues to meet the requirements of this Part and other applicable Parts, the accountable manager should designate a compliance monitoring manager. The role of the compliance monitoring manager is to ensure that the activities of the organization are monitored for compliance with the applicable regulatory requirements , and any additional requirements as established by the organization, and that these activities are being carried out properly under the supervision of the relevant head of functional area ;

2) the compliance monitoring manager should be responsible for ensuring that the compliance monitoring programme is properly implemented, maintained and continually reviewed and improved ;

3) the compliance monitoring manager should :
(i) have direct access to the accountable manager ;
(ii) not be one of the other persons referred to in ORA. GEN. 210 (b) ;
(iii) be able to demonstrate relevant knowledge, background and appropriate experience related to the activities of the organization ; including knowledge and experience in compliance monitoring ; *and*
(iv) have access to all parts of the organization, and as necessary, any contracted organization.

4) in the case of a non-complex organization, this task may be exercised by the accountable manager provided he / she has demonstrated having the related competence as defined in *(c)(3)(iii) ;*

5) in the case the same person acts as compliance monitoring manager and as safety manager, the accountable manager, with regards to his / her direct accountability for safety, should ensure that sufficient resources are allocated to both functions, taking into account the size of the organization and the nature and complexity of its activities ;

6) the independence of the compliance monitoring function should be established by ensuring that audits and inspections are carried out by personnel not responsible for the function, procedure or products being audited.

d) Compliance monitoring documentation.

1) relevant documentation should include the relevant part(s) of the organization's management system documentation ;

2) in addition, relevant documentation should also include the following :
(i) terminology ;
(ii) specified activity standards ;
(iii) a description of the organization ;
(iv) the allocation of duties and responsibilities ;
(v) procedures to ensure regulatory compliance ;
(vi) the compliance monitoring programme, reflecting :
(A) schedule of the monitoring programme ;
(B) audit procedures ;

(C) reporting procedures ;

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

(E) recording system.

(vii) the training syllabus referred to in (e)(2) ;

(viii) document control.

e) Training.

1) correct and thorough training is essential to optimize compliance in every organization. In order to achieve significant outcomes of such training, the organization should ensure that all personnel understand the objectives as laid down in the organization's management system documentation ;

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

3) time should be provided to train all personnel involved in compliance management and for briefing the remainder of the personnel ;

4) the allocation of time and resources should be governed by the volume and complexity of the activities concerned.

GM 1. **ORA. GEN. 200 (a)(6) Management System**

COMPLIANCE MONITORING - GENERAL

a) The organizational set-up of the compliance monitoring function should reflect the size of the organization and the nature and complexity of its activities. The compliance monitoring manager may perform all audits and inspections himself / herself or appoint one or more auditors by choosing personnel having the related competence as defined in AMC 1. ORA. GEN. 200 *(a)(6)* point *(c)(3)(iii),* either from within or outside the organization ;

b) Regardless of the option chosen it must be ensured that the independence of the audit function is not affected, in particular in cases where those performing the audit or inspection are also responsible for other functions within the organization ;

c) In case external personnel are used to perform compliance audits or inspections :

1) any such audits or inspections are performed under the responsibility of the compliance monitoring manager ; *and*

2) the organization remains responsible to ensure that the external personnel has relevant knowledge, background and experience as appropriate to the activities being audited or inspected ; including knowledge and experience in compliance monitoring ;

d) The organization retains the ultimate responsibility for the effectiveness of the compliance monitoring function in particular for the effective implementation and follow-up of all corrective actions.

GM 2. **ORA. GEN. 200 (a)(6) Management System**

COMPLEX ORGANISATIONS - COMPLIANCE MONITORING PROGRAMME for ATOs

a) Typical subject areas for compliance monitoring audits and inspections for Approved Training Organizations (ATOs) should be the following :

1) facilities ;
2) actual flight and ground training ;
3) technical standards.

b) ATOs should monitor compliance with the training and operations manuals they have designed to ensure safe and efficient training. In doing so, they should, where appropriate, additionally monitor the following :

1) training procedures ;
2) flight safety ;
3) flight and duty time limitations, rest requirements and scheduling ;
4) aircraft maintenance / operations interface.

GM 3. **ORA. GEN. 200 (a)(6) Management System**

AUDIT and INSPECTION

a) " Audit " means a systematic, independent and documented process for obtaining evidence and evaluating it objectively to determine the extent to which requirements are complied with ;

b) " Inspection " means an independent documented conformity evaluation by observation and judgment accompanied as appropriate by measurement, testing or gauging, in order to verify compliance with applicable requirements.

AMC 1. **ORA. GEN. 200 (b) Management System**

SIZE, NATURE and COMPLEXITY of the ACTIVITY

a) An organization should be considered as complex when it has a workforce of more than 20 Full Time Equivalents *(FTEs)* involved in the activity subject to CR-EC N^{o} 216 / 2008 and its Implementing Rules ;

b) Organizations with up to 20 Full Time Equivalents *(FTEs)* involved in the activity subject to CR-EC N^{o} 216 / 2008 and its Implementing Rules, may also be considered complex based on an assessment of the following factors :

1) in terms of complexity, the extent and scope of contracted activities subject to the approval ;
2) in terms of risk criteria, whether any of the following are present :
(i) operations requiring the following specific approvals :
Performance - Based Navigation *(PBN)* ;
Low Visibility Operation *(LVO)* ;
Extended Range Operations with Two - Engined Aeroplanes *(ETOPS)* ;
Helicopter Hoist Operation *(HHO)* ;
Helicopter Emergency Medical Service *(HEMS)* ;
Night Vision Imaging System *(NVIS)* *and*
Dangerous Goods *(DG)* ;
(ii) different types of aircraft used ;
(iii) the environment *(offshore, mountainous area etc..).*

c) Regardless of the criteria mentioned in *(a)* and *(b),* the following organizations should always be considered as non-complex :

1) Approved Training Organizations (ATOs) only providing training for the Light Aircraft Pilot Licence (LAPL), Private Pilot Licence (PPL), Sailplane Pilot Licence (SPL) or Balloon Pilot Licence (BPL) and the associated Ratings and Certificates ;

2) Aero - Medical Centres (AeMCs).

AMC 1. **ORA. GEN. 200 (c) Management System**

ATOs PROVIDING TRAINING ONLY for the LAPL, PPL, SPL and BPL and the ASSOCIATED RATINGS or CERTIFICATES — ORGANIZATIONAL REVIEW

a) The primary objective of the organizational review is to enable the organization to ensure that its management system remains effective by verifying that it :

1) has continually identified its aviation safety hazards ;

2) has effectively mitigated the associated risks ; *and*

3) monitors compliance with the applicable requirements.

b) Safety Risk Management should :

1) be performed using internal safety or occurrence reports, hazard checklists, risk registers or similar risk management tools or processes, integrated into the activities of the organization ;

2) in particular address safety risks related to a change ; making use of the existing hazard identification, risk assessment and mitigation tools or processes ; *and*

3) include provisions for emergency response or a formal Emergency Response Plan (ERP).

c) As part of the management system documentation required by *ORA. GEN. 200 (a)(5),* the organization should describe the organizational review programme and related responsibilities. Persons responsible for the organizational review should have a thorough knowledge of the applicable requirements and of the organization's procedures ;

d) The status of all corrective and risk mitigation actions should be monitored by the person responsible for the organizational review programme and implemented within a specified time frame. Action closure should be recorded by the person responsible for the organizational review programme, along with a summary of the action taken ;

e) The results of the organizational review, including all non-compliance findings and new risks identified during the review, should be presented to the Accountable Manager and the person or group of persons nominated in accordance with *ORA. GEN. 210 (b)* prior to notification to the GDCA. All ***Level 1*** findings in the sense of *ARA. GEN. 350* should be immediately notified to the GDCA and all necessary actions immediately taken ;

f) Based on the results of the organizational review, the Accountable Manager should determine the need for and initiate, as appropriate, further actions to address deficiencies in or further improve the organization's management system.

GM 1. **ORA. GEN. 200 (c) Management System**

ATOs PROVIDING TRAINING ONLY for the LAPL, PPL, SPL or BPL and the ASSOCIATED RATINGS or CERTIFICATES — ORGANISATIONAL REVIEW PROGRAMME

a) The organizational review programme may consist of :

1) checklist(s) covering all items necessary to be addressed in order to ensure that the organization identified its aviation safety hazards, effectively mitigates the associated risks and ensures effective compliance with the applicable requirements. These should address all procedures described in the management system documentation and training manual ;

2) a schedule for the accomplishment of the different checklist items, with each item being checked at least once within any 12-month period. The organization may choose to conduct one full review annually or to conduct several partial reviews.

b) Performance of organizational reviews :

Each review item may be addressed using an appropriate combination of :

1) review of training records, training documentation ;

2) review of internal safety reports *(e. g. notified difficulties in using current procedures and training material, etc.. .) ;*

3) review of the risk register and hazard checklists, as applicable ;

4) sample check of training courses ;

5) witnessing of examinations, as appropriate ;

6) interview of the personnel involved ; *and*

7) review of the feedback provided by students and customers.

c) It is recommended that internal safety reports and occurrence reports be reviewed on a continual basis with the aim of identifying possible corrective and risk mitigation actions.

GM 2. ORA. GEN. 200 (c) Management System

ATOs PROVIDING TRAINING only for the LAPL, PPL, SPL or BPL and the ASSOCIATED RATINGS or CERTIFICATES — ORGANISATIONAL REVIEW ITEMS

The following provides a list of typical items for an organizational review checklist, to be adapted as necessary to cover all relevant procedures described in the management system documentation and training manual :

a) *Terms of Approval.*

Check that :

1) no training has been performed outside the terms of approval ;

2) changes not requiring prior approval have been properly managed.

b) *Training Syllabi and Course Material.*

Check that :

1) training syllabi and course materials are in compliance with the applicable requirements, as last amended ;

2) training practices are in compliance with the documentation ; *and*

3) instructor training practices are standardized.

c) *Training Equipment and Tools.*

Check that all equipment and tools other than aircraft and FSTDs are present and meet the criteria defined in the Training Manual.

d) *Facilities.*

Check that the facilities meet the criteria defined in the Training Manual.

e) *Training Aircraft and FSTDs.*

Check that the training aircraft and FSTDs meet the criteria defined in the Training Manual.

f) *Personnel.*

Check that :

1) the current Accountable Manager and other nominated persons are correctly identified ;

2) the organization chart accurately indicates lines of responsibility and accountability throughout the organization ;

3) the organization remains in compliance with the applicable requirements, in case the number of personnel has decreased or if the activity has increased ;

4) the qualification of all new personnel *(or personnel with new functions)* has been appropriately assessed ;

5) staff involved in any safety management-related processes and tasks has been properly trained ; *and*

6) staff has been trained, as necessary, to cover changes in regulations, in the organization, its management system documentation and in associated procedures, etc.. .

g) *Contracted Activities (in case the organization has contracted activities) :*

1) check that new providers have been assessed prior to the establishment of any contract ;

2) for existing providers approved for such activities : check the authorization and approval status of the contracted organization ; *and*

3) for existing providers not approved for such activities : check that the service provided conforms to the applicable requirements of this Part.

h) *Training and Communication on Safety.*

Check that :

1) all personnel are aware of safety management policies, processes and tasks ;

2) safety-related documentations and publications are available ; *and*

3) safety-critical information derived from internal safety or occurrence reporting and hazard identification have been timely communicated to all staff concerned.

i) *Management System Documentation.*

Check that :

1) the documentation is adequate and updated ;

2) staff are aware of the safety policy ; *and*

3) staff can easily access such documentation when needed.

j) *Record - keeping.*

Check that :

1) the records cover all the training activities and management system processes ; *and*

2) minimum record - keeping periods *(random checks)* are complied with.

k) *Emergency Response Provisions or ERP.*

Check that :

1) emergency response information is up to date and readily available ; *and*

2) all staff are aware of emergency response information or the ERP, as applicable *(random checks).*

l) *Internal Safety or Occurrence Reporting Procedures.*

1) check the number of reports received since the last review ;

2) check that :

(i) internal reporting and external occurrence reporting are performed in accordance with reporting procedures ;

(ii) the safety or occurrence reports are analyzed ; *and*

(iii) feedback is provided to reporters.

m) *Other Risk Management Tools or Processes Implemented.*

1) as applicable, check that :

(i) records of hazards and risks are assessed; in particular following analysis of safety or occurrence reports and when significant changes occur *(regulations, personnel, training aircraft, training courses, etc ...) ;*

(ii) the risks are assessed and the risk mitigation actions followed - up and recorded ;

(iii) any risk that has been found acceptable is duly justified ; *and*

(iv) the assumptions made for the risk assessment remain valid ;

2) verify the effectiveness of all risk mitigation actions initiated since the last organizational review.

AMC 1. **ORA. GEN. 205 Contracted Activities**

RESPONSIBILITY when CONTRACTING ACTIVITIES

a) The organization may decide to contract certain activities to external organizations ;

b) A written agreement should exist between the organization and the contracted organization clearly defining the contracted activities and the applicable requirements ;

c) The contracted safety related activities relevant to the agreement should be included in the organization's safety management and compliance monitoring programmes ;

d) The organization should ensure that the contracted organization has the necessary authorization or approval when required, and commands the resources and competence to undertake the task.

GM 1. **ORA. GEN. 205 Contracted Activities**

RESPONSIBILITY when CONTRACTING ACTIVITIES

a) Regardless of the approval status of the contracted organization, the contracting organization is responsible to ensure that all contracted activities are subject to hazard identification and risk management as required by ORA.GEN.200 *(a)(3)* and to compliance monitoring as required by ORA.GEN.200 *(a)(6)* ;

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

c) If the organization requires the contracted organization to conduct an activity which exceeds the contracted organization’s terms of approval, this will be considered as the contracted organization working under the approval of the contracting organization.

AMC 1. **ORA. GEN. 215 Facility Requirements**

ATOs PROVIDING TRAINING for the CPL, MPL AND ATPL and the ASSOCIATED RATINGS and CERTIFICATES

a) For ATOs providing flight training, the following flight operations accommodation should be available :

1) an operations room with facilities to control flying operations ;

2) a flight planning room with the following facilities :

(i) appropriate current maps and charts ;

(ii) current Aeronautical Information Service *(AIS)* information ;

(iii) current meteorological information ;

(iv) communications to Air Traffic Control *(ATC)* and the operations room ;

(v) any other flight safety related material.

3) adequate briefing rooms / cubicles of sufficient size and number ;

4) suitable offices for the supervisory personnel and room(s) to allow flight instructors to write reports on students, complete records and other related documentation ;

5) furnished crew-room(s) for instructors and students.

b) For ATOs providing theoretical knowledge training, the following facilities for theoretical knowledge instruction should be available :

1) adequate classroom accommodation for the current student population ;

2) suitable demonstration equipment to support the theoretical knowledge instruction ;

3) a radiotelephony training and testing facility ;

4) a reference library containing publications giving coverage of the syllabus ;

5) offices for the instructional personnel.

AMC 2. **ORA. GEN. 215 Facility Requirements**

ATOs PROVIDING TRAINING for the LAPL, PPL, SPL OR BPL and the ASSOCIATED RATINGS and CERTIFICATES

a) The following flight operations accommodation should be available :

1) a flight planning room with the following facilities :

(i) appropriate current aviation maps and charts ;

(ii) current AIS information ;

(iii) current meteorological information ;

(iv) communications to ATC *(if applicable)* ;

(v) any other flight safety related material.

2) adequate briefing room(s) / cubicles of sufficient size and number ;

3) suitable office(s) to allow flight instructors to write reports on students, complete records and other related documentation ;

4) suitable rest areas for instructors and students, where appropriate to the training task ;

5) in the case of ATOs providing training for the BPL or LAPL (B) only, the flight operations accommodation listed in *(a)(1) to (a)(4)* may be replaced by other suitable facilities when operating outside aerodromes.

b) The following facilities for theoretical knowledge instruction should be available :

1) adequate classroom accommodation for the current student population ;

2) suitable demonstration equipment to support the theoretical knowledge instruction ;

3) suitable office(s) for the instructional personnel.

c) A single room may be sufficient to provide the functions listed in *(a) and (b).*

***AMC 1*. ORA. GEN. 220 (b) Record - keeping**

GENERAL

a) The record-keeping system should ensure that all records are accessible whenever needed within a reasonable time. These records should be organized in a way that ensures traceability and retrievability throughout the required retention period ;

b) Records should be kept in paper form or in electronic format or a combination of both. Records stored on microfilm or optical disc format are also acceptable. The records should remain legible throughout the required retention period. The retention period starts when the record has been created or last amended ;

c) Paper systems should use robust material which can withstand normal handling and filing. Computer systems should have at least one backup system which should be updated within 24 hours of any new entry. Computer systems should include safeguards against the ability of unauthorized personnel to alter the data ;

d) All computer hardware used to ensure data backup should be stored in a different location from that containing the working data and in an environment that ensures they remain in good condition. When hardware or software changes take place, special care should be taken that all necessary data continues to be accessible at least through the full period specified in the relevant Subpart. In the absence of such indication, all records should be kept *for a minimum period of* ***5*** *years.*

***GM 1.* ORA. GEN. 220 (b) Record - keeping**

RECORDS

Microfilming or optical storage of records may be carried out at any time. The records should be as legible as the original record and remain so for the required retention period.

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SUBPART ATO. APPROVED TRAINING ORGANIZATIONS

Section I. General

GM 1. **ORA. ATO. 100 Scope**

The content of this Section contains the requirements applicable to all ATOs providing training for pilot licences and the associated ratings and certificates.
It is applicable to ATOs providing training for :
a) the LAPL, PPL, SPL and BPL and the associated Ratings and Certificates ; *and*
b) the Commercial Pilot Licence (CPL), Multi - crew Pilot Licence (MPL) and Airline Transport Pilot Licence (ATPL) and the associated Ratings and Certificates.

AMC 1. **ORA. ATO. 105 Application**

APPLICATION FORM

APPLICATION FORM for an ATO CERTIFICATE		
N 0	***Question***	***Supplementary Information***
1.	Name of Training Organization 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	
3a	Type and Number of Licence	full / part - time
4.	Name of Chief Flight Instructor	
4a	Type and Number of Licence	
5.	Name of Chief Theoretical Knowledge Instructor	as (3)
6.	Name of Flight Instructor(s), *where applicable*	
7.	Aerodrome(s) / Operating Site(s) to be used :	IFR Approaches, 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 BITD
11.	Description of Aircraft	Class / Type(s) of A / C registration, of A / C 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	

I, _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ on behalf of _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

name *name of training organization*

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)*

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

Note 2 : *Instrument Flight Rules (IFR), Full Flight Simulator (FFS), Flight and Navigation Procedures Trainer (FNPT), Flight Training Device (FTD), Basic Instrument Training Device (BITD)*

AMC 1. **ORA. ATO. 110 (b) 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 assisted by one or more nominated Deputy HT(s) for certain flight training courses.

AMC 1. **ORA. ATO. 110 (c) 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.

AMC 1. **ORA. ATO. 120 (a) ; (b) Record - keeping**

ATOs PROVIDING TRAINING only for the LAPL, PPL, SPL or BPL and the ASSOCIATED RATINGS and CERTIFICATES

The details of ground, flight and flight instruction by using FSTD 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 instructor should sign this card if a certain exercise has been completed or a specific assessment has been conducted.

AMC 1. **ORA. 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.

AMC 2. **ORA. ATO. 125 Training Programme**

TYPE RATING COURSES – AEROPLANES

a) Introduction

1) when developing the training programme for a type rating course, in addition to complying with the standards included in the operational suitability data (OSD), as established in accordance with CR-EC 1702 / 2003 for the applicable type, the ATO should also follow any further recommendations contained therein ;

2) the 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 ;

3) the 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.

b) Variants.

1) Familiarization Training : where an aeroplane type rating also includes variants of the same aircraft type requiring familiarization training, the additional familiarization 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 ;

2) 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. However, elements of this differences training may be undertaken at appropriate stages of the initial course, with the agreement of the GDCA.

c) Programme of Theoretical Knowledge and Flight Training.

1) 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 (MPA), the course should also provide for consolidation and type - specific training in those elements of basic multi-crew cooperation (MCC) training relevant to the type or variant ;

2) if the 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 ;

3) the ATO is permitted to contract elements of training to a third party training provider. In such cases the contracted organization should normally be approved to conduct such training. When the contracted organization is not an ATO, the GDCA should, within the approval process of the ATO, include the contracted organization 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

d) Syllabus.

The ground training syllabus should provide for the student to gain a thorough understanding of the operation, function and, if appropriate, 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.

e) Theoretical Knowledge Instruction.

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

1) a thorough knowledge of the aircraft structure, power-plant and systems, and their associated limitations, including mass and balance, aircraft performance and flight planning considerations ;
2) a knowledge of the positioning and operation of the cockpit controls and indicators for the aircraft and its systems ;
3) an understanding of system malfunctions, their effect on aircraft operations and interaction with other systems ; *and*
4) the understanding of normal, abnormal and emergency procedures.

f) 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.

g) 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.

h) 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 utilizing 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.

i) Progress Tests and Final Theoretical Knowledge Examination.

1) 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 ;

2) 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, unless otherwise determined in the OSD established in accordance with CR - EC 1702 / 2003.

FLIGHT TRAINING

j) 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 *(c. 2.), 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 an 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 flight management computer (FMC) training devices using hardware and computer programmes identical to those of the aeroplane.

k) Aeroplane Training with FFS.

1) 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 MPAs where the student pilot has more than 500 hours of MPA experience in aeroplanes of similar size and performance, these should include *at least **4** (four)* landings of which *at least **1** (one) should be a full-stop landing*, unless otherwise specified in the OSD established in accordance with CR-EC 1702 / 2003, 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 2 hours of the flight training course ;

2) *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) maximum take-off mass (MTOM) and maximum landing mass (MLM).

3) 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 :

(i) a training methodology should be agreed with the GDCA that ensures the trainee is fully competent with the exterior inspection of the aeroplane before conducting such an inspection un - supervised ;

(ii) the LIFUS should be performed as soon as possible after the specific FFS session ;

(iii) 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 GDCA, 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 Operating Procedures (SOPs).

l) Aeroplane without FFS.

1) 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 an MPA where two pilots are trained together without the use of an FSTD, *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 pressurization, Flight Management System (FMS) or electronic cockpit displays, this minimum may be reduced ;

2) 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 maneuvers 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

m) 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 an FFS, the aeroplane or, in exceptional circumstances, a combination of both.

COURSE COMPLETION CERTIFICATE

n) 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.

AMC 3. **ORA. ATO. 125 Training Programme**
TYPE RATING COURSES - HELICOPTERS

a) Introduction.

1) 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 CR-EC 1702 / 2003 for the applicable type, the ATO should also follow any further recommendations contained therein ;

2) the course should, as far as possible, provide for integrated ground, FSTD 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.

b) Variants.

1) *Familiarization Training* : where a helicopter type rating also includes variants of the same aircraft type requiring familiarization training, the additional familiarization training may be included in the theoretical knowledge training of the initial type rating course ;

2) *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 GDCA.

c) 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 GDCA may agree to some additional training being included in the programme at a remote facility.

d) 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 an FSTD is not available, abnormal operations of systems should not be practiced in a helicopter other than as allowed for in the skill test form for the type.

e) 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.

f) Facilities : ground school equipment, training facilities and Aids.

The 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.

g) 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 or familiarization training is required.

h) 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.

i) Theoretical knowledge instruction.

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

1) a thorough knowledge of the helicopter structure, transmissions, rotors and equipment, power-plant and systems, and their associated limitations ;
2) a knowledge of the positioning and operation of the cockpit controls and indicators for the helicopter and its systems ;
3) a knowledge of performance, flight planning and monitoring, mass and balance, servicing and optional equipment items ;
4) an understanding of system malfunctions, their effect on helicopter operations and interaction with other systems ; *and*
5) 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.

j) Flight Training.

1) 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 ;

2) Helicopter (with FSTD).

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 ;

3) Helicopters (without FSTD).

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.

AMC 4. **ORA. ATO. 125 Training Programme**

FLIGHT TEST TRAINING COURSES – AEROPLANES and HELICOPTERS

a) Introduction.

1) the 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 ;

2) the flight test training course should normally be conducted as a single, full-time course of study and training.

b) Programme of Theoretical Knowledge and Flight Training.

1) the training programme should specify the time allocated to theoretical knowledge training and flying training ;

2) if the 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

c) Syllabus.

The ground training syllabus should provide for the student to gain a thorough understanding of flight testing techniques ;

d) Theoretical Knowledge Instruction.

The theoretical knowledge instruction training should give the student a thorough knowledge of the academic requirements of flight testing.

e) 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 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.

f) Computer - based Training (CBT).

CBT provides a valuable source of theoretical instruction, enabling the student to progress at his / her 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.

g) 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 utilizing 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.

h) Progress Tests and Final Theoretical Knowledge Examination.

1) 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 ;

2) 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

i) Aeroplane and Helicopter Training.

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 maneuvers 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

j) Upon completion of the Flight Test Training, the test pilot or flight test engineer will be required to undergo in-flight exercise with a flight test instructor (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 or helicopter *(as applicable).*

COURSE COMPLETION CERTIFICATE

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

AMC 1. **ORA. ATO. 135 Training Aircraft and FSTDs**

ALL ATOs, EXCEPT those PROVIDING FLIGHT TEST TRAINING

a) The number of training aircraft may be affected by the availability of FSTDs ;

b) Each training aircraft should be :

1) equipped as required in the training specifications concerning the course in which it is used ;

2) except in the case of balloons or single-seat aircraft, fitted with primary flight controls that are instantly accessible by both the student and the instructor *(for example dual flight controls or a centre control stick)*. Swing-over flight controls should not be used ;

c) The fleet should include, as appropriate to the courses of training :

1) aircraft suitably equipped to simulate Instrument Meteorological Conditions (IMC) and for the instrument flight training required. For flight training and testing for the Instrument Rating and the En - route Instrument Rating (EIR), an adequate number of IFR - certificated aircraft should be available ;

2) in the case of aeroplanes and sailplanes, aircraft suitable for demonstrating stalling and spin avoidance ;

3) for the Flight Instructor (FI) training courses on aeroplanes and sailplanes, aircraft suitable for spin recovery at the developed stage ;

4) in the case of helicopters, helicopters suitable for autorotation demonstration ;

5) in the case of a non-complex ATO, one aircraft fulfilling all the required characteristics for a training aircraft might be sufficient ;

6) each FSTD should be equipped as required in the training specifications concerning the course in which it is used.

AMC 1. **ORA. ATO. 140 Aerodromes and Operating Sites**

GENERAL

a) 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 :

1) at least one runway or final approach and take-off area (FATO) 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 ;

2) a wind direction indicator that is visible at ground level from the ends of each runway or at the appropriate holding points ;

3) adequate runway electrical lighting if used for night training ;

4) an air traffic service, except for uncontrolled aerodromes or operating sites where the training requirements may be satisfied safely by another acceptable means of air-to-ground communication.

b) Except in the case of ATOs providing flight test training, in addition to *(a),* for helicopters, training sites should be available for :

1) confined area operation training ;

2) simulated engine off autorotation ; *and*

3) sloping ground operation.

c) 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.

***AMC 1*. ORA. ATO. 145 Pre - requisites for Training**

ENTRANCE REQUIREMENTS

ATOs providing training for other than the LAPL, PPL, SPL or BPL and the associated ratings and certificates 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.

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Section II. Additional Requirements for ATOs Providing Training for CPL, MPL and ATPL and the Associated Ratings and Certificates

AMC 1. **ORA. ATO. 210 Personnel Requirements**

GENERAL

a) 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 ATOs Operations Manual ;

b) The ATO should demonstrate to the GDCA that an adequate number of qualified, competent staff is employed ;

c) In the case of an ATO offering integrated courses, the HT, the Chief Flying Instructor (CFI) and the Chief Theoretical Knowledge Instructor (CTKI) should be employed fulltime or part-time, depending upon the scope of training offered ;

d) In the case of an ATO offering only one of the following :

1) modular courses ;

2) type rating courses ;

3) theoretical knowledge instruction, the positions of HT, CFI and CTKI may be combined and filled by one or two persons with extensive experience in the training conducted by the training organization, fulltime or part-time, depending upon the scope of training offered ;

e) The ratio of all students to flight instructors, excluding the HT, *should not exceed* ***6 : 1*** ;

f) Class numbers in ground subjects involving a high degree of supervision or practical work should not exceed 28 students.

THEORETICAL KNOWLEDGE INSTRUCTORS

g) The theoretical knowledge instruction for type or class ratings should be conducted by instructors holding the appropriate type or class rating, or having appropriate experience in aviation and knowledge of the aircraft concerned ;

h) 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.

AMC 2. **ORA. ATO. 210 Personnel Requirements**

QUALIFICATION of HEAD of TRAINING and CHIEF FLIGHT INSTRUCTOR

a) Head of Training (HT).

The nominated HT should hold or have held in the 3 years prior to first appointment as HT, a professional pilot licence and associated ratings or certificates issued in accordance with Part - FCL, related to the flight training courses provided ;

b) Chief Flight Instructor (CFI).

1) The CFI may delegate standardization and supervision to the flight instructors. In all cases it is the CFI who is ultimately responsible for ensuring quality and standards ;

2) The CFI should, except in the case of ATOs providing Flight Test Training, *have completed* ***1 000*** *hours of flight time as Pilot - in - Command* (PIC). At *least* ***500*** *of those hours should be on flying instructional duties* related to the flying courses provided, *of which* ***200*** *hours may be* Instrument Ground Time.

AMC 1. **ORA. ATO. 230 (a) 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 :

a) *The Training Plan :*

1. 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.
2. Pre - entry requirements	(i) minimum age, educational requirements *(including language),* medical requirements ; (ii) any individual State requirements.
3. Credits for previous experience	To be obtained from the GDCA before training begins.
4. Training syllabi	As applicable, the flying syllabus *(single- or multi-engine, as applicable),* the flight simulation training syllabus and the theoretical knowledge training syllabus.
5. The time scale and scale, in weeks, for each syllabus	Arrangements of the course and the integration of syllabi time.
6. Training Programme	(i) the general arrangements of daily and weekly programmes for flying, theoretical knowledge training and training in FSTDs, *if applicable ;* (ii) bad weather constraints ; (iii) programme constraints in terms of max. student training times, *(flying, theoretical knowledge, on FSTDs)*, for example per day, week or month ; (iv) restrictions in respect of duty periods for students ; (v) duration of dual and solo flights at various stages ; (vi) max. flying hours in any day or night ; (vii) max. number of training flights in any day or night ; (viii) min. rest period between duty periods.
7. Training Records	(i) rules for security of records and documents ; (ii) attendance records ; (iii) the form of training records to be kept ; (iv) persons responsible for checking records and students' log books ; (v) the nature and frequency of record checks ; (vi) standardization of entries in training records ; (vii) rules concerning log book entries.
8. Safety Training	(i) individual responsibilities ; (ii) essential exercises ; (iii) emergency drills *(frequency)* ; (iv) dual checks *(frequency at various stages)* ; (v) requirement before first solo day, night or navigation etc. if applicable.

9. Tests and Examinations	(i) Flying : (A) progress checks ; (B) skill tests. (ii) Theoretical Knowledge : (A) progress tests ; (B) theoretical knowledge examinations. (iii) Authorization for Test ; (iv) Rules concerning Refresher Training before retest ; (v) Test Reports and Records ; (vi) Procedures for Examination paper preparation, type of question and assessment, standard required for " pass " ; (vii) Procedure for question analysis and review and for raising replacement papers ; (viii) Examination re-sit procedures.
10. Training effectiveness	(i) Individual responsibilities ; (ii) General assessment ; (iii) Liaison between departments ; (iv) Identification of unsatisfactory progress *(individual students)* (v) Actions to correct unsatisfactory progress ; (vi) Procedure for changing instructors ; (vii) Maximum number of instructor changes per student ; (viii) Internal feedback system for detecting training deficiencies ; (ix) Procedure for suspending a student from training ; (x) Discipline ; (xi) Reporting and documentation.
11. Standards and level of performance at various stages	(i) Individual responsibilities ; (ii) Standardization ; (iii) Standardization requirements and procedures ; (iv) Application of test criteria.

b) *Briefing and Air Exercises :*

1. 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 subtitles.
2. 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.
3. 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..
4. 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.
5. 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, for example night flying.
6. Instructional Methods.	The ATO requirements, particularly in respect of pre- and post-flying briefing, adherence to syllabi and training specifications, authorization of solo flights, etc..
7. Progress Tests	The instructions given to examining staff in respect of the conduct and documentation of all progress tests.
8. Glossary of Terms	Definition of significant terms as necessary.
9. Appendices	(i) Progress test report forms ; (ii) Skill test report forms ; (iii) ATO certificates of experience, competence, etc.. as required.

c) *Flight Training in an FSTD, if applicable :*
Structure generally as for (b).

d) *Theoretical Knowledge Instruction :*

1. 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.
2. Lesson Plans	A description of each lesson or group of lessons including teaching materials, training aids, progress test organization and inter-connection of topics with other subjects.
3. Teaching Materials	Specification of the training aids to be used *(for example study materials, course manual references, exercises, self study materials, demonstration equipment).*
4. 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.
5. Progress Testing	The organization of progress testing in each subject, including topics covered, evaluation methods and documentation.
6. 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.

AMC 1. ORA. ATO. 230 (b) 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 :

a) *General :*

1) a list and description of all volumes in the Operations Manual ;
2) administration *(function and management)* ;
3) responsibilities *(all management and administrative staff) ;*
4) student discipline and disciplinary action ;
5) approval or authorization of flights ;
6) preparation of flying programme *(restriction of numbers of aircraft in poor weather)* ;
7) command of aircraft ;
8) responsibilities of the PIC ;
9) carriage of passengers ;
10) aircraft documentation ;
11) retention of documents ;

12) flight crew qualification records (licences and ratings) ;
13) revalidation (medical certificates and ratings) ;
14) flight duty period and flight time limitations *(flying instructors)* ;
15) flight duty period and flight time limitations *(students)* ;
16) rest periods *(flight instructors)* ;
17) rest periods *(students)* ;
18) pilots' log books ;
19) flight planning *(general)* ;
20) safety *(general)* : equipment, radio listening watch, hazards, accidents and incidents *(including reports),* safety pilots etc.. .

b) *Technical :*

1) aircraft descriptive notes ;
2) aircraft handling *(including checklists, limitations, maintenance and technical logs, in accordance with relevant requirements, etc..) ;*
3) emergency procedures ;
4) radio and radio navigation aids ;
5) allowable deficiencies *(based on the Master Minimum Equipment List (MMEL), if available).*

c) *Route :*

1) performance *(legislation, take-off, route, landing etc..)* ;
2) flight planning *(fuel, oil, minimum safe altitude, navigation equipment etc..)* ;
3) loading *(load sheets, mass, balance and limitations)* ;
4) weather minima *(flying instructors)* ;
5) weather minima *(students – at various stages of training)* ;
6) training routes or areas.

d) *Personnel Training :*

1) appointments of persons responsible for standards / competence of flight personnel ;
2) initial training ;
3) refresher training ;
4) standardization training ;
5) proficiency checks ;
6) upgrading training ;
7) ATO personnel standards evaluation.

Section III. Additional Requirements for ATOs Providing Specific Types of Training

Chapter 1. Distance Learning Course

AMC 1. **ORA. ATO. 300 General**

DISTANCE LEARNING

a) 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 ;

b) The following are given as planning guidelines for ATOs developing the distance learning element of modular courses :

1) an assumption that a student will study for at least 15 hours per week ;

2) an indication throughout the course material of what constitutes a week's study ;

3) a recommended course structure and order of teaching ;

4) 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 ;

5) appropriate contact times throughout the course when a student can have access to an instructor by telephone, fax, email or the Internet ;

6) 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 ;

7) if the ATO provides the distance learning by help of IT solutions, for example the Internet, instructors should monitor students' progress by appropriate means.

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Chapter 2. Zero Flight - Time Training (ZFTT)

AMC 1. **ORA. ATO. 330 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 **1** year*.

This period may be reduced where the Operator and the ATO have experience of Type Rating Training.

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SUBPART FSTD. REQUIREMENTS for ORGANISATIONS OPERATING FLIGHT SIMULATION TRAINING DEVICES and the QUALIFICATION of FSTDs

SECTION I. Requirements for Organisations Operating FSTDS

AMC 1. **ORA. FSTD. 100 General**

COMPLIANCE MONITORING PROGRAMME – ORGANISATIONS OPERATING FSTDs

a) *Introduction.*

1) the purpose of this AMC is to provide additional and specific information to an organization operating FSTDs on how to establish a compliance monitoring programme (CMP) that enables compliance with the applicable requirements.

b) *Compliance Monitoring Programme.*

1) typical subject areas for inspections are the following :

(i) actual FSTD operation ;
(ii) maintenance ;
(iii) technical Standards ;
(iv) FSTD safety features.

c) *Audit Scope.*

1) organizations 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 the following :

(i) organization ;
(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 ;
(xi) FSTD configuration management.

AMC 2. **ORA. FSTD. 100 General**

COMPLIANCE MONITORING PROGRAMME – ORGANISATIONS OPERATING FSTDs

One acceptable means of measuring FSTD performance is contained in ARINC report 433-1 (December 14, 2007 or as amended) *Standard Measurements for Flight Simulation Quality*.

AMC 3. **ORA. FSTD. 100 General**

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

a) The compliance monitoring programme together with a statement acknowledging completion of a periodic review by the accountable manager should include the following :

1) a maintenance facility that provides suitable BITD hardware and software test and maintenance capability ;
2) 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 ;
3) 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.
b) 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.

GM 1. **ORA. FSTD. 100 General**

COMPLIANCE MONITORING – ORGANISATIONS OPERATING FSTDs – GENERAL

a) The concept of Compliance Monitoring (CM) is a fundamental requirement for organizations 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 ORA. FSTD. 225(b) ;
b) The following guidance has been developed to provide additional material to help both organizations operating FSTDs and competent authorities in developing effective CM that satisfy the applicable requirements and ensure the highest standards of training are maintained ;
c) Additional GM provide a compliance checklist for organizations operating FSTDs (GM 2. ORA.FSTD.100) and guidance detailing the preparation for an evaluation by the GDCA (GM3 ORA.FSTD.100). The compliance checklist should be used by the GDCA as a standardized checklist for the elements that are expected in the CM function of an organization operating FSTDs. The organization 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 GDCA. Use of this checklist should assist in ensuring a consistent approach by the GDCA and also provide organizations operating FSTDs with additional guidance on all the elements of a CM function that the GDCA will expect. The guidance is provided to help organizations operating FSTDs to prepare for authority visits ;
d) 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 ;
e) It should be recognized that whatever CM is developed, it will not be effective unless it becomes an integral part of the way in which the organization 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 ;

f) The GDCA 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 CM management and FSTD operations to operate a Compliance Monitoring System (CMS) within an organization 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 ;

g) If an organization operating FSTDs is certified under any international quality standard it should assure that it fully covers the applicable organization requirements of Part - ORA and the qualification basis ;

h) For small organizations, it is perfectly acceptable to combine the roles of compliance monitoring manager and accountable manager. For other organizations 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 at each site and possibly for each certificate. These representatives should hold the delegated responsibility of the CM manager for the day-to-day CM role at their site and in their function and have the necessary direct reporting line to the overall CM manager. It will also be necessary to ensure that local representatives are also acceptable to the local competent authority. 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 ;

i) 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(A)/(H) 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 ;

j) 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 ;

k) The third part of CM is the method by which the organization 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 ;

l) 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;

m) 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 organizations at least two documents would be expected :

1) Firstly, a CM manual containing the policy, terminology, organizational 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 ;

2) 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 instructor operation station (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.

n) The CM documentation also includes all records such as technical logs, QTG runs, fly-out reports and maintenance job cards ;

o) For organizations with several certificates, separate and modular procedures manuals with a single CM manual covering all approvals, may be acceptable ;

p) 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 ;

q) 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 / are 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 organization 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 ;

r) 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 ;

s) 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 ;

t) In addition to basic knowledge of FSTD requirements and operation, it is expected that auditors have received training in CM and audit techniques ;

u) The routine fly-outs of the device are a specialized 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 type rating instructor / examiner (TRI / TRE) qualified on the type, and should have experience of simulator evaluations carried out by the GDCA.
The assignment of such pilots can present difficulties, particularly for the independent organization operating FSTDs not directly associated with an airline. It is vital for the organization 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 ;

v) Whilst it is accepted that the number of audits required in an organization with a single device will be significantly less than those in larger organizations with multiple devices, the CMP should still meet the same criteria, and cover all aspects of the operation within a 12 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 ;

w) The successful use of sub-contractors who play a significant role in the provision of services, such as maintenance or engineering services, to an organization operating FSTDs is reliant on the sub-contractor operating under the CM of the organization. All requirements that an organization is expected to meet are equally applicable to his / her sub-contractor. It is the organization’s responsibility to ensure that the subcontractor complies with its CM ;

x) 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 CM 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 familiarization 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 ;

y) Any effective CM will include measurement of its effectiveness. The organization should develop performance measures that can be monitored against objectives. Such measures, often referred to as metrics, should be reviewed by the GDCA as part of its oversight of the CM within the organization and during recurrent evaluations. In addition they should form part of the data reviewed during scheduled management reviews as part of the CM ;

z) ARINC 433 provides good guidance on FSTD compliance measurement. Metrics should monitor not only individual FSTD performance but, for larger organizations, how each FSTD is performing within the fleet. It is also recommended that metrics data be shared, regularly, with the FSTD manufacturers to allow monitoring for generic problems such as design issues, which may be best addressed with a fleet-wide solution.

GM 2. **ORA. FSTD. 100 General**

COMPLIANCE MONITORING – ASSESSMENT for ORGANISATIONS OPERATING FSTDs

COMPLIANCE MONITORING ASSESSMENT for ORGANISATIONS OPERATING FSTDs			
Organization :			
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 (AM)			
Has an AM with overall responsibility for Compliance Monitoring (CM) been nominated ?			
Does the AM have corporate authority to ensure all necessary activities can be financed and carried out to the standard required by the GDCA of RA ?			
Has a formal written compliance policy statement been established, included in the CM Manual and signed by the AM ?			
2. COMPLIANCE MONITORING MANAGER			
Has a 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 : 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 organization operating an FSTD and as necessary any sub-contractor's organization ?			

Audit Area	*CM / Proc. Ref*	*Comments*	*Satisfactory - Y / N*
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 ?			
Does the CM include the following as a minimum : a) monitoring of compliance with required technical standards ; b) identification of corrective actions and person responsible for rectification ; c) a feedback system to AM to ensure corrective action are promptly addressed ; d) reporting of significant non-compliances to the GDCA ; e) a compliance monitoring programme to verify continued compliance with applicable requirements, standards and procedures.	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) ensuring that the corrective actions contain the necessary elements ; c) providing 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 CMP identify the processes necessary and the persons within the organization 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 ;	a)		

Audit Area	*CM / Proc. Ref*	*Comments*	*Satisfactory - Y / N*
3. COMPLIANCE MONITORING (CM)	*- cont'd -*		
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.	b) c) d)		
Is there sufficient auditor resource available and can their required level of independence be demonstrated ?			
Do the auditor's report directly to the CM Manager ?			
Does the defined audit schedule cover the following areas, within each 12 month period ? a) organization ; b) plans and objectives ; c) maintenance procedures ; d) FSTD qualification level ; e) supervision ; f) FSTD technical status ; g) manuals, logs and records ; h) defect deferral ; i) personnel training ; j) aircraft and simulator configuration management, including AD.	 a) b) c) d) e) f) g) h) i) j)		 *AD - Airworthiness Directives.*
How are audit non-compliances recorded ?			
Are procedures in place to ensure that corrective actions are taken in response to findings ?			
Are records of the CMP : a) accurate ; b) complete ; *and* c) readily accessible ?	 a) b) c)		
Is there an acceptable and effective procedure for providing a briefing on the CM to all personnel ?			
Is there an acceptable and effective procedure for ensuring that all those responsible for managing the CM receive training covering : a) an introduction to the concept of the CM ; b) compliance management ; c) the concept of compliance assurance ; d) CM Manuals ; e) audit techniques ; f) reporting and recording ; g) how the CM supports continuous improvement within the organization.	 a) b) c) d) e) f) g)		

Audit Area	*CM / Proc. Ref*	*Comments*	*Satisfactory - Y / N*
3. COMPLIANCE MONITORING (CM)	*- cont'd -*		
Are suitable training records maintained ?			
Are activities within the CM subcontracted out to external agencies ?			
Do written agreements exist between the organization and the sub - contractor clearly defining the services and standard to be provided ?			
Are the procedures in place to ensure that the necessary authorizations / approval when required are held by a subcontractor?			
Are the procedures in place to establish that the sub-contractor has the necessary technical competence ?			
4. CM MANUAL			
What is t he 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 AM and the CM Manager ?			
Does the CM Manual include, either directly or by reference to other documents, the following : a) a description of the organization ; 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)		
Is there a document retention policy covering : a) audit schedules ; b) inspection and audit reports ; c) responses to findings ; d) corrective action reports ; e) follow-up and closure reports ; f) management evaluation reports.	 a) b) c) d) e) f)		
Does the CM Manual include, either directly or by reference to other documents, the following procedures for day to day operation of the FSTD : a) defect reporting systems ; b) defect rectification processes ; c) tracking mechanisms ;	 a) b) c)		

Audit Area	*CM / Proc. Ref*	*Comments*	*Satisfactory - Y / N*
4. CM MANUAL	***- cont'd -***		
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.	d) e) f) g) h) i)		
Does the CM Manual include, either directly or by reference to other documents, procedures for notification of the GDCA of the following : a) any change in the organization including company name, location, management ; b) major changes to a qualified device ; c) deactivation or relocation of a qualified device ; d) major failures of a qualified device ; e) major safety issue associated with the installation.	 a) b) c) d) e)		
Does the CM Manual define acceptable and effective procedures to ensure compliance with applicable health and safety regulations, including : a) safety briefings ; b) fire /smoke detection and suppression ; c) protection against electrical, mechanical, hydraulic and pneumatic hazards ; d) other items as defined in AMC 1. ORA. FSTD. 115	 a) b) c) d)		
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 ?			

Audit Area	*CM / Proc. Ref*	*Comments*	*Satisfactory - Y / N*
5. COMPLIANCE MEASURES			
Have CM objectives been developed from the policy statement, and included either directly or by reference in the CMS Manual ?			
Does the CMS include processes to produce and review appropriate metrics data ?			
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 ?			
Required actions / Comments :			
Date :		*Signature*	

GM 3. **ORA. FSTD. 100 General**

COMPLIANCE MONITORING SYSTEM – GUIDANCE for ORGANISATIONS OPERATING FSTDS to PREPARE for a COMPETENT AUTHORITY EVALUATION

a) *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 a competent authority.

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

b) *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 competent authority to perform an evaluation ;

c) *Contents of the Dossier for an Initial Evaluation :*

1) type of FSTD and qualification level requested ;

2) 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 ;

3) FSTD identification and detailed technical specification 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. Manuals needed for an evaluation *(e. g. flight manuals, system manuals, acceptance test manual, IOS user manual etc.., if applicable)* could already be provided as part of the dossier in an electronic format ;

4) planned modifications ;

5) subjective open defect(s) ;

6) 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, Enhanced Ground Proximity Warning System* (EGPWS)) ;

7) QTG status : the list should include for each QTG test available the status of the tests following the FSTD Operator and competent authority reviews.

d) *Contents of the Dossier for a Recurrent Evaluation :*

1) type of FSTD and qualification level requested ;

2) 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 ;

3) 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 ;

4) status of items raised during the last evaluation and date of closure ;

5) reliability data : training hours month by month during the past year, numbers of complaints mentioned in the technical log, training hours lost, availability rate ;

6) operational data : a list of FSTD users over the previous 12 months should be provided, with number of training hours ;

7) failure tabulation including categorization of failures *(by ATA chapter and Pareto diagram, ARINC classification) ;*

8) details of main failures leading to training interruption or multiple occurrences of some failures ;

9) hardware and / or software updates or changes since last evaluation and planned hardware and / or software updates or changes ;

10) subjective open defect(s) ;

11) 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) ;

12) 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 ; *and*

13) results of scheduled internal audits and additional quality inspections *(if any)* since last evaluation and a summary of actions taken.

AMC 1. **ORA. FSTD. 110 Modifications**

GENERAL

a) 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 ;

b) 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 organization operating an FSTD should have a system that ensures that all relevant Airworthiness Directives (ADs) are introduced where applicable on affected FSTDs ;

c) ADs from both the State of Design of the aircraft and the State where the FSTD is located should 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 ;

d) Where appropriate, ADs issued by States where users of the device have aircraft registered should also be monitored. In addition to ADs, the FSTD operator should also put in place processes that ensure all aircraft modifications are reviewed for any effect on training, testing and checking. This can be achieved by reviewing the aircraft manufacturer's 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 ;

e) Organizations operating FSTDs should notify the competent authority of major changes ;

f) 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 organization by a special evaluation and should always consider that burden when deciding if such an evaluation is necessary ;

g) The organization 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.

GM 1. **ORA. FSTD. 110 Modifications**

EXAMPLES of MAJOR MODIFICATIONS

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. Airborne Collision Avoidance System (ACAS), EGPWS ;

e) aircraft modifications that could affect the FSTD qualification ; *and*

f) FSTD hardware or software modifications that could affect the handling qualities, performance or system representation.

AMC 1. **ORA. FSTD. 115 Installations**

MINIMUM ELEMENTS for SAFE OPERATION

a) Introduction.

1) 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.

b) Expected Elements.

1) adequate fire / smoke detection, warning and suppression arrangements should be provided to ensure safe passage of personnel from the FSTD ;

2) 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 ;

3) other areas that should be addressed include the following :

(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 ;

(ix) a manual or automatic electrical power isolation switch.

GM 1. **ORA. FSTD. 115 Installations**

GENERAL

a) The intent of ORA. FSTD. 115 is to establish that the organization 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 ;

b) Based on experience, the GDCA 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 ;

c) It is recognized that certain checks, such as that of the emergency stop, can have adverse impact on the FSTD if carried out in full ;

d) 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.

SECTION II. Requirements for the Qualification Of FSTDs

AMC 1. ORA. FSTD. 200 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 3 months prior to requested qualification date :

Date : _ _ / _ _ _ _ _ _ _ _ / 20 _ _

Office : – GDCA of RA

Address : … … … … … … … … … … … … … … … … ….

City : … … … … … … … … …

Country : … … … … … … … … … … …

Type of FSTD	**Aircraft Type / Class**	**Qualification Level Sought**				
Full Flight Simulator FFS		**A**	**B**	**C**	**D**	Sp / Cat
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 / FSTD / for qualification.

_ _

operator's identification of the FSTD

The _

FSTD manufacturer's name

FSTD with its visual system. _

visual system and manufacturer's name, if applicable

Evaluation is requested for the following configurations and engine fits, as applicable : *e. g. 320 CFM 56 / IAE 2500.*

1. . . . .

2. . . . .

3. . . . .

Dates requested are : _ _ / _ _ _ _ _ _ _ _ _ / 20 _ _

and the FSTD will be located at _
place

The objective tests of the QTG will be submitted by _ _ / _ _ _ _ _ _ _ _ _ / 20 _ _
date

and in any event not less than 30 days before the requested evaluation date unless otherwise agreed with the GDCA of RA.

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 still have to be provided :

Tests	***Comments***

(Add boxes as required)

It is expected that they will be completed and submitted 3 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 7 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 N^0

… … … … … … … … …. … … … … / … … … … … … … … … … … … … … …
Name Flight Engineer's Licence N^0 *(if applicable)*

□ **FFS / FTD :** This team attests that the _ _ _ _ _ _ _ _ _ _ _ _ conforms to the aeroplane
type of FSTD

flight deck / helicopter cockpit configuration of _
name of aircraft operator (if applicable),

_ _ _ _ _ _ _ _ _ _ aeroplane / helicopter within the requirements for _ _ _ _ _ _ _ _ _
type of aeroplane / helicopter *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.

□ **FNTP :** This team attest(s) that the _ _ _ _ _ _ _ _ _ _ _ _ _ represents the flight deck or
aeroplane / helicopter or class of aeroplane / type of helicopter

cockpit environment of a 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 : … … … … … ..

GM 1. **ORA. FSTD. 200 Application for FSTD Qualification**

USE of FOOTPRINT TESTS in QUALIFICATION TEST SUBMISSION

a) *Introduction.*

1) Recent experience during initial qualification of some FFSs has required acceptance of increasing numbers of footprint tests. This is particularly true for FFSs 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 ;

2) This guidance is applicable to FFS aeroplane, FTD aeroplane, FFS helicopter and FTD helicopter qualifications.

b) *Terminology.*

1) 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 GDCA. The resulting data are the footprint validation data for the FSTD concerned.

c) *Recommendation.*

1) 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 GDCA concerned, and taking into consideration the level of qualification sought for the FSTD ;

2) 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 maneuver representative of the particular aircraft being simulated ;

(iii) manually flown out by a type rated pilot who has current experience on type* and is deemed acceptable by the GDCA ** ;

(iv) constructed from validation data obtained from the footprint test maneuver 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.

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

** *The same pilot should sign off the complete test as being fully representative.*

3) 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 AMC 1 - CS-FSTD (A). 300 ;

4) Where the number of footprint tests is deemed by the GDCA to be excessive, the maximum level of qualification may be affected. The GDCA 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 recognized, 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 ;

5) 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 GDCA ;
6) The GDCA 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.

AMC 1. **ORA. FSTD. 225 (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 organization and a
procedure for undertaking the annual review and reporting to the GDCA is documented within the compliance monitoring function.

AMC 1. **ORA. FSTD. 230 (b) Changes to the Qualified FSTD**
UPDATING and UPGRADING EXISTING FSTDs

a) 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 GDCA according to the applicable requirements in effect at the time of initial qualification ;
b) 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 GDCA, clearly mean an improvement to the performance and training capabilities of the device altogether, then the GDCA might accept the proposed change as an update while allowing the device to retain its original qualification level ;
c) 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 ;
d) 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 GDCA ;
e) An upgrade, and consequent initial qualification according to the latest applicable requirements, is only applicable when the organization requests another qualification level *(re-categorization)* for the FSTD.

AMC 1. **ORA. FSTD. 240 Record - keeping**

FSTD RECORDS

FSTD records to be kept should include the following :

1) for the lifetime of the device :

(i) the master QTG (MQTG) of the initial evaluation ;

(ii) the qualification certificate of the initial evaluation ; *and*

(iii) the initial evaluation report.

2) 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 ;

(ix) obsolete procedures and forms.

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SUBPART AEMC. AERO - MEDICAL CENTRES

Section I. General

AMC 1. **ORA. AeMC. 115 Application**

GENERAL

a) 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 ;

b) The AeMC should provide details of clinical attachments to hospitals, medical institutions and / or specialists.

AMC 1. **ORA. AeMC. 135 Continued Validity**

EXPERIENCE

a) At least 200 Class 1 Aero - medical Examinations and assessments should be performed at the AeMC every year ;

b) If in the States the number of Aero - medical Examinations and assessments mentioned in *(a)* cannot be reached due a low number of professional pilots, a proportionate number of Class 1 Aero - medical Examinations and assessments should be performed ;

c) 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 :

1) Class 2 medical certificates as established in Part - MED ; *and / or*

2) third country Class 1 medical certificates.

d) 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.

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Section II. Management

GM 1. **ORA. AeMC. 200 Management System**

RESEARCH

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

AMC 1. **ORA. AeMC. 210 Personnel Requirements**

GENERAL

a) The aero-medical examiner (AME) should have held Class 1 privileges for at least 5 years and have performed at least 200 aero-medical examinations for a Class 1 medical certificate before being nominated as head of an AeMC ;

b) The AeMC may provide practical AME training for persons fully qualified and licensed in medicine.

MEDICAL - TECHNICAL FACILITIES

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

a) *Cardiology.*

Facilities to perform :

1) 12 - lead resting ECG ;
2) stress ECG ;
3) 24-hour blood pressure monitoring ; *and*
4) 24-hour heart rhythm monitoring.

b) *Ophthalmology.*

Facilities for the examination of :

1) near, intermediate and distant vision ;
2) external eye, anatomy, media and fundoscopy ;
3) ocular motility ;
4) binocular vision ;
5) colour vision *(anomaloscopy or equivalent)* ;
6) visual fields ;
7) refraction ; *and*
8) heterophoria.

c) *Hearing.*

1) pure - tone audiometer.

d) *Otorhinolaryngology.*

Facilities for the clinical examination of mouth and throat and :

1) otoscopy ;
2) rhinoscopy ;
3) tympanometry or equivalent ; *and*
4) clinical assessment of vestibular system.

e) *Examination of Pulmonary function.*

1) spirometry.

f) *The following facilities should be available at the AeMC or arranged with a service provider :*

1) clinical laboratory facilities ; *and*
2) ultrasound of the abdomen.