



IOSA Standards Manual

Effective 1 April 2012

5th | Edition



IOSA Standards Manual

Effective 1 April 2012

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IOSA Standards Manual

Change/Revision History

This fifth Edition of the IOSA Standards Manual has been introduced following a variety of requests for changes from a number of sources.

The changes have been subject to the IOSA Program Office (IPO) 'Change/Revision' process and the subsequent approvals procedure.

Step	Name	Date
Changes prepared by:	Hideki Endo Assistant Director, Safety and Auditing Program	November 2011
IOSA Program Office Reviewed by:	Catalin Cotrut Director of Audit Programs,	November 2011
Reviewed and Approved by:	Guenther Matschnigg Chairman, IOSA Standards Board	November 2011



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Disclaimer	N/A	N/A
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Introduction	INT 1 to INT 6	November 2011

IOSA Standards and Recommended Practices

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Section 5		
Cabin Operations (CAB)	CAB 1 to CAB 40	November 2011



Section 6 Ground Handling Operations (GRH)	GRH 1 to GRH 26	November 2011
Section 7 Cargo Operations (CGO)	CGO 1 to CGO 20	November 2011
Section 8 Security Management (SEC)	SEC 1 to SEC 35	November 2011



RECORD OF REVISIONS

Edition Number	Revision Number	Issue Date	Effective Date
2 nd Edition	Revision No. 0	August 2006	March 2007
2 nd Edition	Revision No. 1	May 2007	January 2008
2 nd Edition	Revision No. 2	February 2009	July 2009
3 rd Edition	Revision No. 0	June 2010	October 2010
4 th Edition	N/A	July 2011	December 2011
5 th Edition	N/A	November 2011	April 2012



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ISM Fifth Edition

The following tables describe changes contained in the IOSA Standards Manual, Edition 5 (ISM Edition 5).

The first table, called *Revision Highlights*, describes the significant changes in ISM Edition 5.

Subsequent tables describe all changes in relation to the ISM Edition 4.

ISM Fourth Edition

An additional table named *Revision Highlights – Additional Changes for ISM Edition 4*, has been added, containing changes which were omitted from the Table of Changes when ISM Edition 4 was published.

Revision Highlights
Description of Significant Changes
▪ FLT Section: Additional provisions revised to address Advanced Qualification Program (AQP) and Advanced Training and Qualification Program (ATQP)
▪ GRH Section: Certain provisions that address dangerous goods revised in accordance with the DGR
▪ CGO Section: Certain provisions that address dangerous goods revised in accordance with the DGR
▪ SEC Section: Some cargo security provisions revised to improve accuracy and clarity

Description of Changes for ISM Edition 5	
Area Changed	Description of Change
No Changes	
Section 1 (ORG)	
Area Changed	Description of Change
General	<ul style="list-style-type: none"> No general changes
Applicability Box	<ul style="list-style-type: none"> No changes
ORG 3.3.13	<ul style="list-style-type: none"> Technical change; PCO effective date extended
ORG 3.4.1 Guidance	<ul style="list-style-type: none"> Editorial change; abbreviation added
ORG 3.4.6	<ul style="list-style-type: none"> Technical change; word deleted from sub-spec i), wording revised to provide expansion of sub-spec ii) relative to the Conformance Report Editorial change; abbreviation added to sub-spec i)
ORG 3.4.7	<ul style="list-style-type: none"> Technical change; wording revised to provide expansion of sub-spec v) relative to assessing implementation
Section 2 (FLT)	
Area Changed	Description of Change
General	<ul style="list-style-type: none"> Editorial change; all references in guidance to a “foreign country” revised to “the territory of a state that is other than the State of the Operator”
Applicability Box	<ul style="list-style-type: none"> No changes
FLT 1.3.9 Guidance	<ul style="list-style-type: none"> Editorial change; wording revised to provide a better description of intent
FLT 1.3.10 Guidance	<ul style="list-style-type: none"> Editorial change; wording revised to provide flexibility to intent
FLT 1.11.3	<ul style="list-style-type: none"> Technical change; reference corrected to FLT 1.11.4A
FLT 2.2.12	<ul style="list-style-type: none"> Technical change; wording added to address AQP/ATQP
FLT 2.2.12 Guidance	<ul style="list-style-type: none"> Technical change; wording added to address modifications to training interval in accordance with AQP/ATQP as specified in FLT 2.1.1B
FLT 2.2.13	<ul style="list-style-type: none"> Technical change; wording added to address AQP/ATQP
FLT 2.2.13 Guidance	<ul style="list-style-type: none"> Technical change; wording added to address modifications to training interval in accordance with AQP/ATQP as specified in FLT 2.1.1B
FLT 2.2.23	<ul style="list-style-type: none"> Technical change; wording added to address AQP/ATQP
FLT 2.2.23 Guidance	<ul style="list-style-type: none"> Technical change; wording added to address modifications to training interval in accordance with AQP/ATQP as specified in FLT 2.1.1B
FLT 2.2.27	<ul style="list-style-type: none"> Technical change; wording revised to address variances in regulatory requirements
FLT 2.2.27 Guidance	<ul style="list-style-type: none"> Technical changes; intent statement added, wording revised to provide more specificity
FLT 2.2.32 Guidance	<ul style="list-style-type: none"> Editorial change; wording revised to more clearly state intent
FLT 2.2.35 Guidance	<ul style="list-style-type: none"> Editorial change; wording revised to more clearly state intent
FLT 2.2.43	<ul style="list-style-type: none"> Technical change; wording added to address AQP/ATQP
FLT 2.2.43 Guidance	<ul style="list-style-type: none"> Technical change; wording added to address modifications to training interval in accordance with AQP/ATQP as specified in FLT 2.1.1B
FLT 2.3.2 Guidance	<ul style="list-style-type: none"> Technical changes; wording added, deleted to provide improved explanation of intent
FLT 2.4.3	<ul style="list-style-type: none"> Technical change; wording added to address AQP/ATQP
FLT 2.4.3 Guidance	<ul style="list-style-type: none"> Technical change; wording added to address modifications to training interval in accordance with AQP/ATQP as specified in FLT 2.1.1B
FLT 3.11.38	<ul style="list-style-type: none"> Technical change; conditional phrase added to sub-spec v)



Description of Changes

FLT 3.11.38 Guidance	<ul style="list-style-type: none"> ▪ New guidance
FLT 3.11.50 Guidance	<ul style="list-style-type: none"> ▪ Editorial change; wording revised to be consistent with specifications in the standard
FLT 4.2.3 Guidance	<ul style="list-style-type: none"> ▪ Editorial changes; wording revised to improve accuracy
FLT Table 2.3	<ul style="list-style-type: none"> ▪ Technical change; reference in lead paragraph corrected to FLT 1.8.2
Section 3 (DSP)	
Area Changed	Description of Change
General	<ul style="list-style-type: none"> ▪ Editorial change; all references in guidance to a “foreign country” revised to “the territory of a state that is other than the State of the Operator”
Applicability Box	<ul style="list-style-type: none"> ▪ No changes
DSP 1.3.2	<ul style="list-style-type: none"> ▪ Technical change; wording revised to specify process and/or procedure
DSP 1.8.2	<ul style="list-style-type: none"> ▪ Technical change; sub-spec v) deleted
Table 3.5	<ul style="list-style-type: none"> ▪ Technical change; sub-spec ix) reference to legend revised
Section 4 (MNT)	
Area Changed	Description of Change
General	<ul style="list-style-type: none"> ▪ No general changes
Applicability Box	<ul style="list-style-type: none"> ▪ No changes
ISARPs	<ul style="list-style-type: none"> ▪ No changes to ISARPs
Section 5 (CAB)	
Area Changed	Description of Change
General	<ul style="list-style-type: none"> ▪ No general changes
Applicability Box	<ul style="list-style-type: none"> ▪ Technical change; wording revised to provide reference to the FLT section for specifications that address carriage of supernumeraries
CAB 2.2.3	<ul style="list-style-type: none"> ▪ Technical change; wording revised, sub-spec vi) reference to first aid deleted
Section 6 (GRH)	
Area Changed	Description of Change
General	<ul style="list-style-type: none"> ▪ No general changes
Applicability Box	<ul style="list-style-type: none"> ▪ No changes
GRH 1.6.3	<ul style="list-style-type: none"> ▪ Technical change; wording added to convert applicability of standard to address the DGR in relation to dangerous goods as cargo; DGR specifications in relation to passenger flights now addressed in GRH 1.6.6 and 1.6.7
GRH 1.6.3 Guidance	<ul style="list-style-type: none"> ▪ Technical change; guidance revised
GRH 1.6.4	<ul style="list-style-type: none"> ▪ Technical change; wording added, deleted to convert applicability of standard to address the OM in relation to dangerous goods as cargo; OM specifications in relation to passenger flights now addressed in GRH 1.6.6 and 1.6.7
GRH 1.6.6	<ul style="list-style-type: none"> ▪ New standard; contains DGR specifications in relation to passenger flights
GRH 1.6.6 Guidance	<ul style="list-style-type: none"> ▪ New guidance
GRH 1.6.7	<ul style="list-style-type: none"> ▪ New standard; contains DGR specifications in relation to passenger flights
GRH 1.6.8	<ul style="list-style-type: none"> ▪ New recommended practice; contains DGR specifications in relation to passenger flights
GRH 1.6.8 Guidance	<ul style="list-style-type: none"> ▪ New guidance
GRH 3.3.4	<ul style="list-style-type: none"> ▪ Technical change; sub-specs revised to be consistent with DGR requirements for the NOTOC

Section 7 (CGO)	
Area Changed	Description of Change
General	<ul style="list-style-type: none"> No general changes
Applicability Box	<ul style="list-style-type: none"> No changes
CGO 1.6.2	<ul style="list-style-type: none"> Technical change; wording added to improve clarity
CGO 3.1.2	<ul style="list-style-type: none"> Eliminated; duplication of CGO 3.1.1
CGO 3.2.14	<ul style="list-style-type: none"> Technical change; sub-specs revised to be consistent with GRH 3.3.4 and DGR requirements for the NOTOC
Section 8 (SEC)	
Area Changed	Description of Change
General	<ul style="list-style-type: none"> No general changes
Applicability Box	<ul style="list-style-type: none"> No changes
SEC 1.12.1 Guidance	<ul style="list-style-type: none"> Editorial change; descriptive wording added
SEC 3.3.3	<ul style="list-style-type: none"> Technical change; wording revised for consistency with ICAO Annex 17 requirement
SEC 3.3.3 Guidance	<ul style="list-style-type: none"> Technical changes; wording added for consistency with ICAO guidance Editorial change; wording added to reflect intent of guidance material
SEC 3.7.3	<ul style="list-style-type: none"> Editorial change; word "process" changed to plural
SEC 3.7.3 Guidance	<ul style="list-style-type: none"> Technical change; wording added to improve clarity, to include mail
SEC 3.7.4	<ul style="list-style-type: none"> Technical change; wording in sub-specs revised for accuracy
SEC 3.7.5	<ul style="list-style-type: none"> Technical change; wording added to expand regulatory approval
SEC 3.7.6	<ul style="list-style-type: none"> Technical change; wording revised for accuracy
SEC 3.7.7	<ul style="list-style-type: none"> Technical change; wording revised to improve accuracy and clarity
SEC 3.7.7 Guidance	<ul style="list-style-type: none"> Technical change; wording added to improve accuracy
SEC 3.7.9	<ul style="list-style-type: none"> Technical change; wording revised to improve accuracy and clarity
SEC 3.7.9 Guidance	<ul style="list-style-type: none"> Technical change; wording added to improve accuracy

The following table contains additional changes which were omitted from the table Description of Changes when ISM Edition 4 was published.

Description of Changes – Additional Changes for ISM Edition 4	
Introduction	
Area Changed	Description of Change
7 – Safety Management Systems (SMS)	<ul style="list-style-type: none"> Editorial change; wording revised to eliminate reference to ISM Third Edition
Section 1 (ORG)	
Area Changed	Description of Change
General	<ul style="list-style-type: none"> Terminology change; abbreviation IRM replaces ITRM Editorial change; first letter in <i>accountable executive</i> to lower case, postholder converted to post holder
ORG 1.1.10 Guidance	<ul style="list-style-type: none"> Technical change; wording provides flexibility for SMS implementation
ORG 1.1.11	<ul style="list-style-type: none"> Technical change; wording more consistent with ICAO Framework wording
ORG 1.3.1 Guidance	<ul style="list-style-type: none"> Editorial change; wording deleted to correct typo
ORG 3.5.3	<ul style="list-style-type: none"> Editorial change; wording revised for better clarity
ORG 4.1.14	<ul style="list-style-type: none"> Provision upgrade; recommended practice to standard Technical change; wording revised for accuracy
ORG 4.1.14 Guidance	<ul style="list-style-type: none"> Technical change; wording revised for accuracy
Section 2 (FLT)	
Area Changed	Description of Change
General	<ul style="list-style-type: none"> Terminology change; postholder converted to post holder, fuelling converted to fueling Technical change; phrase “published in the OM” deleted from most, but not all, provisions
FLT 1.12.1	<ul style="list-style-type: none"> Editorial change; wording revised for consistency
FLT 1.12.4	<ul style="list-style-type: none"> Editorial change; wording revised for consistency
FLT 2.2.27 Guidance	<ul style="list-style-type: none"> Technical change; wording added to address modifications to training interval in accordance with AQP/ATQP as specified in FLT 2.1.1B Editorial change; wording added for improved clarity
FLT 2.4.1	<ul style="list-style-type: none"> Editorial change; wording added for consistency
FLT 3.3.6 Guidance	<ul style="list-style-type: none"> Guidance deleted; reference to table no longer valid
FLT 3.8.1	<ul style="list-style-type: none"> Editorial change; wording revised for clarity
FLT 3.8.7B	<ul style="list-style-type: none"> Technical change; wording revised to specify procedures (replaces process) Editorial change; wording revised (minor)
FLT 3.8.8	<ul style="list-style-type: none"> Editorial change; wording revised (minor)
FLT 3.11.66	<ul style="list-style-type: none"> Technical change; provision upgraded to a standard
FLT 4.3.13 Guidance	<ul style="list-style-type: none"> Technical change; intent statement added
FLT 4.3.14 Guidance	<ul style="list-style-type: none"> Technical change; intent statement added
FLT 4.3.29 Guidance	<ul style="list-style-type: none"> Editorial change; revised wording (minor)
FLT 4.5.1	<ul style="list-style-type: none"> Technical change; wording revised for consistency and to address regulatory differences

Section 3 (DSP)	
Area Changed	Description of Change
General	<ul style="list-style-type: none"> ▪ Technical change; phrase “published in the OM” deleted from most, but not all, provisions ▪ Technical change; phrase “published in the OM” deleted; not necessary ▪ Editorial change; postholder converted to post holder
DSP 1.3.1 Guidance	<ul style="list-style-type: none"> ▪ Editorial change: Post Holder added to IRM reference
DSP 1.12.1	<ul style="list-style-type: none"> ▪ Editorial change; wording revised for consistency
DSP 1.12.4	<ul style="list-style-type: none"> ▪ Editorial change; wording revised for consistency
Section 4 (MNT)	
Area Changed	Description of Change
General	<ul style="list-style-type: none"> ▪ Terminology change; postholder converted to post holder
MNT 1.6.1	<ul style="list-style-type: none"> ▪ Technical change; wording added, revised to improve technical clarity ▪ Editorial change; structural revision to some sub-specs
MNT 1.12.1	<ul style="list-style-type: none"> ▪ Editorial change; wording revised for consistency
MNT 1.12.4	<ul style="list-style-type: none"> ▪ Editorial change; wording revised for consistency
MNT 2.12 Header	<ul style="list-style-type: none"> ▪ Technical change; OEM deleted
Section 5 (CAB)	
Area Changed	Description of Change
General	<ul style="list-style-type: none"> ▪ Terminology change; postholder converted to post holder, fuelling converted to fueling
CAB 1.5.3	<ul style="list-style-type: none"> ▪ Editorial change; wording revised for consistency
CAB 1.11.1	<ul style="list-style-type: none"> ▪ Editorial change; wording revised for consistency
CAB 1.11.4	<ul style="list-style-type: none"> ▪ Editorial change; wording revised for consistency
CAB 2.1.4 Guidance	<ul style="list-style-type: none"> ▪ New guidance
CAB 3.4.10	<ul style="list-style-type: none"> ▪ Technical change; wording revised to improve accuracy
Section 6 (GRH)	
Area Changed	Description of Change
General	<ul style="list-style-type: none"> ▪ Terminology change; postholder converted to post holder, fuelling converted to fueling
GRH 1.5.3	<ul style="list-style-type: none"> ▪ Editorial change; wording revised for consistency
GRH 1.7.1 Guidance	<ul style="list-style-type: none"> ▪ New guidance
GRH 1.11.1	<ul style="list-style-type: none"> ▪ Editorial change; wording revised for consistency
GRH 1.11.4	<ul style="list-style-type: none"> ▪ Editorial change; wording revised for consistency
Section 7 (CGO)	
Area Changed	Description of Change
General	<ul style="list-style-type: none"> ▪ Terminology change; postholder converted to post holder
CGO 1.2.2 Guidance	<ul style="list-style-type: none"> ▪ Editorial change; IRM reference added
CGO 1.7.1 Guidance	<ul style="list-style-type: none"> ▪ Editorial change; reference to ORG provision corrected
CGO 1.11.1	<ul style="list-style-type: none"> ▪ Editorial change; wording revised for consistency
CGO 1.11.3	<ul style="list-style-type: none"> ▪ Editorial change; wording revised for consistency with ORG provision
CGO 1.11.4	<ul style="list-style-type: none"> ▪ Editorial change; wording revised for consistency

CGO 3.2.3	<ul style="list-style-type: none"> ▪ Technical change; wording revised to address DGR revision
CGO 3.2.14	<ul style="list-style-type: none"> ▪ Technical change; wording revised to improve accuracy
CGO 3.2.14 Guidance	<ul style="list-style-type: none"> ▪ New guidance
CGO 3.3.2	<ul style="list-style-type: none"> ▪ Technical change; new sub-spec i) wording added to address DGR revision
Section 8 (SEC)	
Area Changed	Description of Change
SEC 1.4.1 Guidance	<ul style="list-style-type: none"> ▪ Editorial change; wording added for applicability
SEC 1.6.3	<ul style="list-style-type: none"> ▪ Editorial change; wording revised for consistency
SEC 1.11.4	<ul style="list-style-type: none"> ▪ Provision suspended on 7 September 2011 – under review in accordance with the IOSA Standards Special Review Process contained in IPM ED 4, Section 1, Figure 1.4.
SEC 3.1.4	<ul style="list-style-type: none"> ▪ Technical change; wording revised to improve accuracy
SEC 3.1.4 Guidance	<ul style="list-style-type: none"> ▪ Technical change; wording added, deleted to improve accuracy





FOREWORD

The IATA Operational Safety Audit (IOSA) Program is an internationally recognized and accepted system for assessing the operational management and control systems of an operator. IOSA is based on industry-proven quality audit principles and structured to ensure a standardized audit with consistent results.

The audit under IOSA determines the level of conformity with IOSA standards and permits an operator that meets all standards to become registered with IATA as an IOSA Operator.

The technical content of the IOSA Standards and Recommended Practices (ISARPs) contained in this IOSA Standards Manual (ISM) is reviewed and maintained by task forces, each comprising a membership of operational, safety, security and quality experts from airlines, regulatory authorities and various other industry entities associated with operational audit. Special care is taken to ensure a regionally diverse membership of each task force.

Over the long term, IATA will continually review and update the content of this manual to ensure material is up-to-date and meets the needs of the industry.

Your comments are welcome...

Only the readers and users of this ISM can tell us if it meets their needs and expectations. Your comments on any aspect of this manual – content, format, style or other – are solicited and may be addressed to:

iosa@iata.org



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INTRODUCTION

1 Purpose

The IOSA Standards Manual (ISM) is published in order to provide the operational standards, recommended practices, associated guidance material and other supporting information necessary for an operator to successfully prepare for an Audit.

The ISM may also be used as a guide for any operator desiring to structure its operational management and control systems in conformity with the latest industry operational practices.

The ISM is the sole source of assessment criteria utilized by IOSA auditors when conducting an Audit.

2 Structure

The ISM is organized as follows:

Section 1 →Organization and Management System (ORG);

Section 2 →Flight Operations (FLT);

Section 3 →Operational Control and Flight Dispatch (DSP);

Section 4 → Aircraft Engineering and Maintenance (MNT);

Section 5 →Cabin Operations (CAB);

Section 6 →Ground Handling Operations (GRH);

Section 7 →Cargo Operations (CGO);

Section 8 →Security Management (SEC).

Each section in this Manual has been assigned an associated 3-letter identifier (in parentheses above). The reference number for every standard or recommended practice within a section will include the specific 3-letter identifier for that section (e.g., ORG 1.1.1).

3 Applicability of IOSA Standards and Recommended Practices (ISARPs)

The ISARPs contained in this manual are the basis for the assessment of an operator conducted under the IOSA Program (i.e. the Audit).

The ISARPs as published in this version of the ISM are applicable only for the Audit of an operator that *operates* a minimum of one (i.e. one or more) multi-engine, two-pilot aircraft with a maximum certificated takeoff mass in excess of 5,700 kg (12,566 lb) to conduct:

- Passenger flights with or without cabin crew.
- Cargo flights with or without the carriage of passengers or supernumeraries.

ISARPs may not be applied or used for the Audit of an operator that **either**:

- Does not *operate* a minimum of one aircraft as specified above, **or**
- Has *all* aircraft operations conducted by another operator.

ISARPs may not be applied or used for the Audit of operations that are conducted with:

- Aircraft that have a maximum certificated takeoff mass of 5,700 kg (12,566 lb) or less;
- Single engine aircraft;
- Single pilot aircraft;
- Helicopters;
- Seaplanes.

During an Audit, ISARPs are applied only to those aircraft that are of the type authorized in the Air Operator Certificate (AOC) and utilized in commercial passenger and/or cargo operations.

Other owned or leased aircraft that are *not* of the type authorized in the AOC and/or not utilized in commercial air transport operations will not be evaluated during an Audit. However, the existence of such aircraft will be referenced with an explanation in the IOSA Audit Report (IAR).

4 Explanation of ISARPs

ISARPs contained in this manual have been developed solely for use under the IOSA program and contain the operational criteria upon which the Audit is based. ISARPs are *not* regulations.

ISARPs incorporate the relevant operations, maintenance and security requirements from ICAO Annexes that are applicable to an air operator.

Standards

IOSA **Standards** are specified systems, policies, programs, processes, procedures, plans, sets of measures, facilities, components, types of equipment or any other aspect of operations under the scope of IOSA that are considered an operational necessity, and with which an operator will be expected to be in conformity at the conclusion of the Audit.

Standards always contain the word “shall” (e.g., “The Operator shall have a process...”) in order to denote conformance is a requirement for IOSA registration.

During an Audit, determination of nonconformity with specifications contained in an IOSA Standard results in a Finding, which in turn results in the generation of a Corrective Action Report (CAR) by the Audit Organization (AO) that conducted the Audit.

To close a Finding, an operator will be required to respond with a Corrective Action Plan (CAP) that is acceptable to the AO, and then implement corrective action in accordance with the CAP. The implementation of corrective action will be verified by the AO.

Recommended Practices

IOSA **Recommended Practices** are specified systems, policies, programs, processes, procedures, plans, sets of measures, facilities, components, types of equipment or any other aspects of operations under the audit scope of IOSA that are considered operationally desirable, but conformity is optional by an operator. Recommended Practices always contain the italicized word “*should*” (e.g., “The Operator *should* have a policy...”) to denote conformance is optional.

During an Audit, a determination of nonconformity with specifications contained in an IOSA Recommended Practice results in an Observation, which in turn results in the generation of a CAR by the AO.

An operator is not obliged to respond to an observation with corrective action. However, if an operator chooses to close an Observation, it will require a CAP and subsequent implementation of corrective action exactly as is required to close a Finding. The implementation of corrective action will be verified by the AO.

Conditional Phrase

Certain provisions (i.e. ISARPs), or sub-specifications within certain provisions, begin with a conditional phrase. The conditional phrase states the conditions (one or more) that serve to define the applicability of the provision or sub-specification to the individual operator being audited. A conditional phrase begins with the words “If the Operator...”

When assessing an operator against a provision or sub-specification that begins with a conditional phrase, the Auditor will first determine if an operator meets the condition(s) stated in the conditional phrase. If the operator meets the stated condition(s), the provision or sub-specification is applicable to the operator and must be assessed for conformity. If the operator does not meet the condition(s), the provision or sub-specification is not applicable to that operator, and such non-applicability will be recorded on the IOSA Checklist as N/A.

Parallel Conformity Option

A Parallel Conformity Option (PCO) may be included in a limited number of provisions in this ISM. A PCO provides an optional means for an operator to be in conformity with an IOSA provision

that contains a basic operational specification, which, due to technical or logistical factors, has been determined to be generally not achievable by the industry.

Where a PCO is included in an IOSA provision, it will be clearly identified and include an expiration date. The provision will always state the basic operational specification first, followed by the PCO as an “or” alternative.

Each PCO is subject to approval under the IOSA Standards Change Management Process. The expiration date of a PCO will be reviewed on a regular basis to determine if an extension is required. Such review will include an investigation of industry capability to meet the basic operational specification. At the point it can be determined the industry will have the capability to meet the basic operational specification, a PCO will be allowed to expire.

Notes and Symbols

An italicised note (*Note:...*) immediately following a provision contains information relevant to the specification(s) in the provision, and is to be considered as part of the provision.

A <PA> symbol in the reference number of an IOSA provision indicates that the provision is applicable *only* to an operator that conducts passenger flights and uses a cabin crew in the passenger cabin.

An <AC> symbol in the reference number of an IOSA provision indicates that the provision is applicable *only* to an operator that conducts cargo flights utilizing cargo aircraft.

A provision with neither <PA> nor <AC> in the reference number is applicable to the operations associated with *both* passenger and cargo aircraft.

An [SMS] symbol in bold text immediately following the last sentence of an IOSA provision indicates the provision specifies one or more of the elements of a safety management system (SMS).(SMS is addressed in subsection 7 below.)

A (GM) symbol in bold text at the end of a provision indicates the existence of associated guidance material.(Guidance Material is addressed in subsection 5 below.)

A ► symbol at the end of an individual standard or recommended practice in Section 1 (ORG) indicates the specific provision is repeated almost verbatim in one or more of the other seven sections of the ISM.

A ◀ symbol at the end of a provision in Sections 2-8 indicates the specific provision is also contained in Section 1 (ORG) and has been repeated almost verbatim.

A ▲ symbol is the identifier for a paragraph that immediately follows a provision and designates the provision as eligible for the application of Active Implementation. (Active Implementation is addressed in subsection 6 below.)

5 Guidance Material

Guidance material is informational in nature and supplements or clarifies the meaning or intent of certain ISARPs. ISARPs that are self-explanatory do not have associated guidance material.

Guidance material is designed to ensure a common interpretation of specifications in ISARPs and provides additional detail that assists an operator to understand what is required in order to achieve conformity. Where applicable, guidance material also presents examples of acceptable alternative means of achieving conformity.

Guidance material is co-located with the relevant ISARPs, and is preceded by the bold sub-heading **Guidance**.

Audit specifications are contained only in the ISARPs, and never in the guidance material.

6 Operational Audit

During an Audit, an operator is assessed against the IOSA Standards and Recommended Practices contained in this manual. To determine conformity with any standard or recommended

practice, the Auditor will assess the degree to which specifications are *documented* and *implemented* by the operator. In making such an assessment, the following information is applicable.

Documented

Documented shall mean the specifications in the ISARPs are published and accurately represented by an operator in a controlled document. A controlled document is subject to processes that provide for positive control of content, revision, publication, distribution, availability and retention.

Documentation is necessary for an operator to ensure systems, programs, policies, processes, procedures and plans are implemented in a standardized manner, and to further ensure such standardized implementation is sustained on an on-going basis. Documentation provides the standards that govern the way personnel perform tasks within the management system and in operations. Such documented standards are necessary for an operator to:

- Provide continuity in the flow of information to personnel;
- Ensure personnel are properly trained;
- Conduct evaluations (e.g. audits, inspections, performance assessments).

Implemented

Implemented shall mean the specification(s) in the ISARPs are established, activated, integrated, incorporated, deployed, installed, maintained and/or made available, as part of the operational system, and is (are) monitored and evaluated, as necessary, for continued effectiveness.

The continuity of implementation is directly linked to documentation. To ensure standardization within the management system and in the conduct of operations, an operator must ensure specified systems, programs, policies, processes, procedures and plans are implemented as published in its controlled documents.

The requirement for specifications to be documented and implemented by an operator is inherent in ISARPs unless indicated otherwise.

Inactive Approved Operations

It is not unusual for an operator to elect not to conduct certain types of operations for which it has regulatory approval (e.g. transport of dangerous goods). In such cases, IOSA provisions with specifications that address such inactive operations would not be applicable to the operator during an Audit *if it is stated clearly in a controlled document (e.g. Operations Manual) that the specified operations are not conducted by the operator.*

Outsourced Functions

Where an operator has chosen to outsource operational functions specified in IOSA provisions to external service providers, conformity with those provisions will be based on evidence provided by the operator that demonstrates acceptable processes are in place (i.e. processes are documented and implemented) for monitoring such external service providers to ensure fulfillment of all requirements affecting the safety and security of operations. Auditing is recommended as an effective method for an operator to monitor external service providers.

Active Implementation

Certain IOSA Standards may be designated as eligible for the application of Active Implementation (see **Notes and Symbols** above), which is a concept that permits an operator to be in conformity with a standard based on a demonstration of active and real progress toward completion of an acceptable Implementation Action Plan (IAP).

An acceptable IAP defines and maps out the satisfaction of all requirements for an operator to achieve conformity with the designated IOSA Standard. As a minimum, an acceptable IAP shall specify:

- A detailed schedule of all work or activities necessary to complete the IAP;

- All equipment, components, material or other physical resources necessary to complete the IAP;
- A series of milestone dates against which progress toward completion of the plan can be measured;
- A date when the plan is projected to be completed.

Designation of any IOSA Standard for the application of Active Implementation will always be predicated on an up-front risk analysis that indicates application of AI would not pose an unacceptable safety risk. Additionally, such designation may include prerequisite conditions that must be satisfied by an operator in order to be eligible for AI.

An IOSA Standard that has been designated for application of AI will be clearly identified in this manual, along with prerequisite conditions, if any.

To conform to a standard based on Active Implementation, an operator must be able to provide evidence to the Auditor that execution of an acceptable IAP is underway and material or physical progress toward completion of the plan is consistent with the planned schedule, as measured against published milestones. If applicable, an operator must also demonstrate satisfaction of any associated prerequisite conditions.

An operator that provides only an IAP without other demonstrable evidence of having materially or physically begun execution of the plan does not meet the criteria for conformity based on Active Implementation.

7 Safety Management Systems (SMS)

The components and elements of an SMS for air operators are published in the ICAO Framework for Safety Management Systems (SMS). Guidance supporting the Framework may be found in the ICAO Safety Management Manual (SMM), Doc 9859.

With publication of the ISM Third Edition, all elements from the ICAO Framework are incorporated into the ISARPs.

Specific SMS requirements for an operator will always be mandated by the State in accordance with its individual State Safety Plan (SSP). Not all states will mandate SMS immediately, and some states could take several years before making SMS mandatory for its operators. Additionally, some elements of SMS are quite complex, thus full implementation of an SMS by an operator could take several years. Therefore, given these factors, most SMS provisions are initially presented in the ISARPs as recommended practices (i.e. “should”). SMS recommended practices are identified by a bold **[SMS]** symbol immediately following the last sentence of the provision.

An operator that is audited against the ISM Third Edition and found to be in conformity with all IOSA standards (applicable to that operator), plus all IOSA recommended practices identified by the [SMS] symbol, is considered to have a *baseline* SMS in place.

Such baseline SMS might not meet the SMS requirements of all states because certain states, in accordance with the individual SSP, could add requirements above those contained in the ICAO framework. Because ISARPs are designed to be applicable to all operators, regardless of regulatory jurisdiction, it is therefore not feasible to include the various individual state requirements.

8 IOSA Documentation System

The ISM is used in association with the following related manuals:

- IOSA Program Manual (IPM);
- IATA Reference Manual for Audit Programs (IRM)
- IOSA Audit Handbook (IAH).

The IPM, ISM, IRM and IAH comprise the IOSA documentation system.

9 English Language

English is the official language of the IOSA Program; documents comprising the IOSA Documentation System are written in International English* in accordance with IATA policy.

The IPM requires Auditors to ensure the English language version of this ISM and/or IOSA Checklists is always used as the basis for a final determination of conformity or nonconformity with ISARPs during the conduct of an Audit. Versions of the ISM or IOSA Checklists that have been translated into another language are subject to misinterpretation; therefore, any translated IOSA document is considered an unofficial reference.

* The official reference for International English in accordance with IATA policy is the online Merriam-Webster Dictionary (<http://www.merriam-webster.com>).

10 Manual Revisions

IATA will publish revisions to this ISM to ensure the content remains current and meets the needs of the IOSA Program.

A revision to the ISM (except temporary revisions) will always result in a new version of the manual. The ISM version is identified by an edition number, revision number (if applicable) and date. The version is depicted on the cover page of the manual and at the bottom of each individual page.

The issue date and effective date are indicated in the record of revisions section of the ISM.

A temporary revision (TR) may be issued in order to meet urgent needs. A TR will not be included in the body of the ISM, and will be accompanied by specific instructions as to applicability.

11 Conflicting Information

Manuals within the IOSA documentation system are not revised concurrently, thus creating the possibility of conflicting information in different manuals.

In the case of conflicting information in different IOSA manuals, the information contained in the manual with the most recent revision date can be assumed to be valid.

12 Definitions

The IATA Reference Manual for Audit Programs (IRM) contains the Glossary of Technical Terms and the List of Technical Abbreviations that are associated with the ISARPs.

Definitions of terms specific to the IOSA Program are located in the IPM.

13 IOSA Documents and Forms

IOSA documents and forms that are referenced in this manual are available for download on the IOSA website (<http://www.iata.org/iosa>).

14 Authority

The IOSA Program operates under the authority of the IATA Operations Committee (OPC) with reference to the IATA Board of Governors (BoG).

SECTION 1 – ORGANIZATION AND MANAGEMENT SYSTEM (ORG)

Applicability

Section 1 addresses the organization and management system of an operator for the purpose of ensuring the safety and security of aircraft operations.

Individual provisions or sub-specifications within a provision that:

- Begin with a conditional phrase (“If the Operator...”) are applicable if the operator meets the condition(s) stated in the phrase.
- Do not begin with a conditional phrase are applicable to all operators unless determined otherwise by the Auditor.

General Guidance

Definitions of technical terms used in this ISM Section 1, as well as the meaning of abbreviations and acronyms, are found in the IATA Reference Manual for Audit Programs (IRM).

1 Management and Control

1.1 Organization and Accountability

ORG 1.1.1 The Operator shall have a management system that has continuity throughout the organization and ensures control of operations and management of safety and security outcomes. (GM) ►

Guidance

Refer to the IRM for the definitions of *Operations*, *Operator*, *Safety (Operational)*, *Security (Aviation)* and *State*.

A management system is documented in controlled company media at both the corporate and operational levels. Manuals or controlled electronic media are acceptable means of documenting the management system.

Documentation provides a comprehensive description of the scope, structure and functionality of the management system and depicts lines of accountability throughout the organization, as well as authorities, duties, responsibilities and the interrelation of functions and activities within the system for ensuring safe and secure operations.

Acceptable means of documentation include, but are not limited to, organograms (organization charts), job descriptions and other descriptive written material that define and clearly delineate the management system.

Documentation also reflects a functional continuity within the management system that ensures the entire organization works as a system and not as a group of independent or fragmented units (i.e., silo effect).

An effective management system is fully implemented and functional with a clear consistency and unity of purpose between corporate management and management in the operational areas.

The management system ensures compliance with all applicable standards and regulatory requirements. In addition to internal standards and regulations of the State, an operator may also be required to comply with authorities that have jurisdiction over operations that are conducted over the high seas or within a foreign country.

ORG 1.1.2 The Operator shall have designated senior officials within the management system that have the responsibility, and thus are accountable for ensuring, within all operational areas:

- i) The allocation of resources necessary to manage safety risks and security threats to aircraft operations;
- ii) Operations are conducted in accordance with conditions and restrictions of the Air Operator Certificate (AOC), and in compliance with applicable regulations and standards of the Operator. **(GM)**

Guidance

Refer to the IRM for the definitions of *Accountability*, *Aircraft Operations*, *Responsibility*, *Safety Risk Management* and *Senior Management*.

With an assignment of responsibility, attendant authority and financial control are typically necessary in order to make policy decisions, provide adequate resources, resolve safety and security issues and ensure the necessary system components are in place and functioning properly.

In addition to being in compliance with conditions and restrictions specified in the AOC, as well as requirements of applicable authorities (i.e. regulations), and operator is expected to be in compliance with its own policies and procedures, which may exceed existing regulations or address areas that are not regulated (e.g. ground handling operations). An operator's policies and procedures are typically published in its Operations Manual (OM).

Acceptable means of documenting accountability include, but are not limited to, organization charts (organograms), job descriptions, corporate by-laws and any other descriptive written material that defines and clearly indicates the lines of operational accountability from the corporate level of management to front line operations.

ORG 1.1.3 If required by the State, the Operator shall have one senior official within the management system that is designated as the accountable executive who:

- i) Has the authority to ensure the allocation of resources necessary to manage safety risks and security threats to aircraft operations;
- ii) Has overall responsibility and is accountable for ensuring operations are conducted in accordance with conditions and restrictions of the Air Operator Certificate (AOC), and in compliance with applicable regulations and standards of the Operator. **(GM)**

Guidance

Refer to the IRM for the definitions of *Accountable Executive* and *Authority*.

Accountable executive is a generic management title; such senior official may also be known as the chief executive officer, accountable manager or other similar title depending on the regulatory jurisdiction.

The accountable executive has the authority, which typically includes financial control, to make policy decisions, provide adequate resources, resolve operational quality, safety and security issues and, in general, ensure necessary system components are in place and functioning properly.

ORG 1.1.4 If required by the State, the Operator shall have nominated officials within the management system that are acceptable to the Authority and have the responsibility, and thus are accountable, for ensuring, in their respective defined operational areas:

- i) The management of safety risks and security threats to aircraft operations;

- ii) Operations are conducted in accordance with conditions and restrictions of the Air Operator Certificate (AOC), and in compliance with applicable regulations and standards of the Operator. **(GM)**

Guidance

Refer to the IRM for the definition *Post Holder*.

In certain regulatory jurisdictions such nominated officials may be called post holders or directors.

ORG 1.1.5 – 1.1.9 (Intentionally open)

Safety Management System

ORG 1.1.10 The Operator *should* have a safety management system (SMS) that is implemented and integrated throughout the organization to address the safety of aircraft operations. **[SMS] (GM)**

Note: Conformity with this provision is possible only when the Operator has achieved conformity with all standards and recommended practices that are identified by the [SMS] symbol.

Guidance

Refer to the IRM for the definitions of *Safety Management System (SMS)* and *State Safety Program (SSP)*.

IOSA specifications for SMS are derived from the international standards and recommended practices published by ICAO in Annex 6 to the Convention on International Civil Aviation (ICAO Annex 6), Appendix 7, *Framework for Safety Management Systems (SMS)*.

Where applicable, an SMS is designed and implemented in accordance with the State Safety Program (SSP). The manner in which the elements of SMS are implemented typically reflects the size and complexity of the operator's organization.

In general, an SMS is designed and implemented to:

- Identify safety hazards in operations;
- Ensure remedial action is implemented to control safety risks;
- Provide for ongoing monitoring and assessment of safety performance;
- Make continual improvement to the level of safety in operations.

The specific requirements for each operator's SMS will normally be found in the regulations associated with the SSP. In addition, states would typically publish guidance designed to assist operators in the implementation of SMS.

A description of an operator's SMS is contained in documentation as specified in **ORG 2.1.5**.

Expanded guidance may be found in the ICAO Safety Management Manual, Document 9859 (ICAO SMM), the IATA Introduction to Safety Management Systems (IATA Introduction to SMS) and the IATA Safety Management System Implementation Guide (IATA SMS Implementation Guide).

ORG 1.1.11 The Operator *should* have an accountable executive who, irrespective of other functions, has ultimate responsibility and accountability on behalf of the Operator for the implementation and maintenance of the SMS throughout the organization. **[SMS]**

Guidance

The requirement for an accountable executive is an element of the Safety Accountabilities component of the SMS framework.

In an SMS, the accountable executive would typically have:

- Ultimate responsibility and accountability, on behalf of the operator, for the safety of the entire operation together with the implementation and maintenance of the SMS;

- Responsibility for ensuring the SMS is properly implemented in all areas of the organization and performing in accordance with specified requirements.

Expanded guidance may be found in the ICAO SMM, the IATA Introduction to SMS and the IATA SMS Implementation Guide.

ORG 1.1.12 The Operator *should* have a designated manager that is responsible for the day-to-day administration and oversight of SMS operation throughout the organization on behalf of the Accountable Executive and senior management. **[SMS] (GM)**

Guidance

The requirement for a manager that focuses on the administration and oversight of the SMS on behalf of the accountable executive is an element of the Safety Accountabilities component of the SMS framework.

The individual assigned responsibility for organizational implementation of an SMS is ideally a senior management official that reports to the accountable executive. Also, depending on the size, structure and scope of an operator's organization, such individual may be assigned functions in addition to those associated with the SMS manager position.

The title assigned to the designated manager will vary for each organization. Regardless of title, the manager is the designated organizational focal point for the day-to-day development, administration and maintenance of the SMS (i.e. functions as the SMS *champion*). It is important that such manager has the necessary degree of authority when coordinating and addressing safety matters throughout the organization.

Whereas the designated manager has responsibility for day-to-day oversight of the SMS, overall accountability for organizational safety rests with the accountable executive. Likewise, nominated officials (refer to **ORG 1.1.4**) or operational managers always retain the responsibility (and thus are accountable) for ensuring safety in their respective areas of operations.

Expanded guidance may be found in the ICAO SMM, the IATA Introduction to SMS and the IATA SMS Implementation Guide.

1.2 Management Commitment

ORG 1.2.1 The Operator shall have a corporate safety policy that:

- i) Reflects the organizational commitment regarding safety;
- ii) Includes a statement about the provision of the necessary resources for the implementation of the safety policy;
- iii) Is communicated throughout the organization. **[SMS] (GM)**

Guidance

The requirement for an operator to have a defined safety policy is an element of the Safety Policy and Objectives component of the SMS framework.

The safety policy typically also reflects the commitment of senior management to:

- Compliance with applicable regulations and standards of the Operator;
- Ensuring the management of safety risks to aircraft operations;
- The promotion of safety awareness;
- Continual improvement of operational performance.

The safety policy is typically reviewed periodically to ensure continued relevance to the organization.

Such policy might be documented in the operations manual or other controlled document, and, to enhance effectiveness, is communicated and made visible throughout the organization through

dissemination of communiqués, posters, banners and other forms of information in a form and language which can be easily understood. To ensure continuing relevance, the corporate policy is normally reviewed for possible update a minimum of every two years.

Consistent with the structure and complexity of the operator's organization, the corporate safety policy may be issued as a stand-alone policy or combined with either or both of the policies specified in **ORG 1.2.2** and **ORG 1.2.3**.

Expanded guidance may be found in the ICAO SMM, the IATA Introduction to SMS and the IATA SMS Implementation Guide.

ORG 1.2.2 The Operator shall have a corporate policy that states the commitment of the organization to continual improvement of the management system. **(GM)**

Guidance

The policy of an operator reflects the commitment of senior management to ensure measuring and evaluating on a continuing basis, and making changes that improve the management system and the culture. Ideas for improvement may come from internal and external sources; therefore the organization would be constantly monitoring all sources and willing to make changes as necessary to keep the management system refreshed and strongly focused on improving operational safety and security performance.

Such policy typically commits the organization to:

- Regular review of performance-based indicators by senior management;
- Regular analysis of malfunctions or undesirable operational results;
- Follow-up of corrective actions and their effectiveness in improving operational performance.

The continual improvement policy is typically reviewed periodically to ensure continuing relevance to the organization.

An SMS, as well as a Security Management System (SeMS), are unique components of an operator's overall management system and, if implemented, would typically be subjected to protocols for continual improvement in accordance with the operator's policy.

A continual improvement policy is normally documented in operations manuals or other controlled documents and, to enhance effectiveness, communicated and made visible throughout the organization by disseminating communiqués, posters, banners and other forms of informational media.

Consistent with the structure and complexity of the operator's organization, the continual improvement policy may be issued as a stand-alone policy or combined with the safety policy specified in **ORG 1.2.1**.

ORG 1.2.3 The Operator *should* have a corporate policy that supports implementation of a non-punitive reporting system in all areas where operations are conducted and specifies:

- i) The types of operational behaviors that are unacceptable;
- ii) Conditions under which disciplinary action would not apply. **(GM)**

Guidance Refer to the IRM for the definition of *Just Culture*.

For some operators a non-punitive reporting system might be referred to as an open reporting system. Such reporting systems are typically considered an attribute of a just culture.

Frontline operational personnel are often in the best position to observe and identify operational hazards and conditions that could lead to accidents or incidents. Experience has shown that personnel will not provide information if there is apprehension or fear that such reporting will result in disciplinary action.

Such a policy is typically documented in operations manuals or other controlled documents.

Consistent with the structure and complexity of the operator's organization, the reporting policy may be issued as a stand-alone policy or combined with the safety policy specified in **ORG 1.2.1**.

To be effective, a policy assures employees that reporting unpremeditated or inadvertent errors does not result in disciplinary or punitive action being taken against the reporter or other individuals involved unless, of course, such errors result from illegal activity, willful misconduct or other egregious actions, as defined by the operator. Also, employees need to be assured that the identity or information leading to the identity, of any employee who reports an error under this policy is never disclosed unless agreed to by the employee or required by law.

The reporting policy encourages and perhaps even provides incentive for individuals to report hazards and operational deficiencies to management. It also assures personnel that their candid input is highly desired and vital to safe and secure operations.

The reporting policy is typically reviewed periodically to ensure continuing relevance to the organization.

1.3 Authorities and Responsibilities

ORG 1.3.1 The Operator shall ensure the management system defines the authorities and responsibilities of management and non-management personnel throughout the organization, and specifies:

- i) The levels of management with the authority to make decisions that affect the safety and/or security of aircraft operations;
- ii) Responsibilities for ensuring operations are conducted in accordance with applicable regulations and standards of the Operator. **[SMS] (GM) ►**

Guidance

The definition of authorities and responsibilities of management and non-management personnel is an element of the Safety Accountabilities component of the SMS framework.

An effective management system has lines of authority and responsibility that flow from corporate senior management into all operational areas.

Delegation of authority and assignment of responsibility is described and communicated such that it is understood throughout the organization. As a minimum, organization charts or organograms are acceptable means for documenting the structure of a management system.

Management positions critical to operational safety or security may require enhanced job descriptions or terms of reference that reflect specialized requirements inherent in certain key positions. Such specialized requirements would include any delegating of authority exercised by personnel on behalf of an authority (e.g., designated or authorized flight examiner).

Compliance with regulatory requirements, as well as internal policies and procedures, is an essential element of a safe and secure operational environment. The responsibility for ensuring compliance with both regulatory and internal requirements is specified and assigned within the management system. Job descriptions, terms of reference and operating manuals are examples of appropriate locations for documenting management system responsibilities.

Expanded guidance may be found in the ICAO SMM, the IATA Introduction to SMS and the IATA SMS Implementation Guide.

ORG 1.3.2 The Operator shall have a process for the delegation of duties within the management system that ensures managerial continuity is maintained when operational managers, including nominated post holders, if applicable, are absent from the workplace. **(GM)**

►

Guidance

A documented process that ensures a specific person (or perhaps more than one person) is identified to assume the duties of any operational manager that is or is expected to be away from normal duties meets the intent of this requirement. An operator may have nominated deputies in place or a process for ensuring the appointment of a temporary replacement.

A notification of such delegation of duties may be communicated throughout the management system using email or other suitable communication medium.

ORG 1.3.3 The Operator shall ensure a delegation of authority and assignment of responsibility within the management system for liaison with regulatory authorities, original equipment manufacturers and other operationally relevant external entities. **(GM)** ►

Guidance

To ensure the communication and coordination with external entities is consistent and appropriate, liaison with operationally relevant external entities is normally controlled through the delegation of authority and assignment of responsibility to specifically named management personnel. Such authorities and responsibilities would normally be included in the job descriptions of the applicable managers.

ORG 1.3.4 (Intentionally open)

ORG 1.3.5 The Operator shall have a policy that informs operational personnel throughout the organization of their responsibility to comply with the applicable laws, regulations and procedures in all locations where operations are conducted.

1.4 Communication

ORG 1.4.1 The Operator shall have a communication system that enables an exchange of information relevant to the conduct of operations throughout the management system and in all areas where operations are conducted. **(GM)** ►

Guidance

An effective communication system ensures the exchange of operational information throughout all areas of the organization, and includes senior managers, operational managers and front line personnel. To be totally effective, the communication system would also include external organizations that conduct outsourced operational functions.

Methods of communication will vary according to the size and scope of the organization. However, to be effective, methods are as uncomplicated and easy to use as is possible, and facilitate the reporting of operational deficiencies, hazards or concerns by operational personnel.

ORG 1.4.2 The Operator *should* have processes for the communication of safety information to personnel throughout the organization in order to provide an awareness of the SMS. **[SMS] (GM)**

Guidance

Safety communication is an element of the Safety Promotion component of the SMS framework.

The general intent of safety communication is to foster a positive safety culture in which all employees receive ongoing information on safety issues, safety metrics, specific hazards existing in the workplace, and initiatives to address known safety issues. Such communication typically conveys safety-critical information, and explains why particular safety actions are taken and why safety procedures are introduced or changed.

Expanded guidance may be found in the ICAO SMM, the IATA Introduction to SMS and the IATA SMS Implementation Guide.

1.5 Management Review

ORG 1.5.1 The Operator shall have a process to review the management system at intervals not exceeding one year to ensure its continuing suitability, adequacy and effectiveness in the management and control of operations. A review shall include assessing opportunities for improvement and the need for changes to the system, including, but not limited to, organizational structure, reporting lines, authorities, responsibilities, policies, processes and procedures, as well as allocation of resources and identification of training needs. **(GM)**

Guidance

Management review is a necessary element of a well-managed company that provides a medium through which organizational control and continual improvement can be delivered. To be effective, a formal management review takes place on a regular basis, typically once or more per year.

An appropriate method to satisfy this requirement is a periodic formal meeting of senior executives. The agenda of the meeting would typically include a general assessment of the management system to ensure all defined elements are functioning effectively and producing the desired operational safety and security outcomes.

Senior management ensures deficiencies identified during the management review are addressed through the implementation of organizational changes that will result in improvements to the management system.

Input to the management review process would typically include:

- Results of audits;
- Findings from operational inspections and investigations;
- Operational feedback;
- Incidents and near-miss reports;
- Changes in regulatory policy or civil aviation legislation;
- Process performance and organizational conformity;
- Status of corrective and preventative actions;
- Results from implementation or rehearsal of the emergency response plan (ERP);
- Follow-up actions from previous management reviews;
- Feedback and recommendations for management system improvement;
- Regulatory violations.

Output from the management review process would typically include decisions and actions related to:

- Improvement of the processes throughout the management system;
- Safety and security requirements;
- Resource needs.

The management review is a formal process, which means documentation in the form of meeting schedules, agendas and minutes are produced and retained. Additionally, the output of the management review process would normally include action plans for changes to be implemented within the system where deemed appropriate.

Examples of strategies that might improve the overall effectiveness of the management review process include:

- Integrating the management review meeting into other performance review meetings;

- Scheduling management review meetings frequently enough to ensure any action that might be required is timely;
- Ensuring senior managers understand their responsibilities as part of the review process;
- Ensuring action items resulting from meetings are documented and progress is tracked;
- Ensuring there is always a responsible name associated with action items.

ORG 1.5.2 The Operator *should* have processes to review and ensure continual improvement of the SMS throughout the organization, to include:

- i) Identification of the cause(s) of substandard performance of the SMS;
- ii) Determination of the implications of substandard performance of the SMS in operations;
- iii) Elimination or mitigation of such cause(s) of substandard performance. [SMS] (GM)

Guidance

Refer to the IRM for the definitions of *Safety Assurance*, *Safety Action Group (SAG)*, *Safety Review Board (SRB)* and *Substandard Performance*.

Continual improvement of the SMS is an element of the Safety Assurance component of the SMS framework.

Continual improvement would normally be overseen by a strategic committee of senior management officials that are familiar with the workings and objectives of the SMS. Such committee is typically referred to as a Safety Review Board (SRB), which is a very high level, strategic committee chaired by the accountable executive and composed of senior managers, including senior line managers responsible for functional areas in operations (e.g. flight operations, engineering and maintenance, cabin operations).

To ensure front line input as part of the SMS review process, an operator would form multiple units of specially selected operational personnel (e.g. managers, supervisors, front line personnel) that function to oversee safety in areas where operations are conducted. Such units are typically referred to as Safety Action Groups (SAGs), which are tactical committees that function to address implementation issues in front line operations to satisfy the strategic directives of the SRB.

Expanded guidance may be found in the ICAO SMM, the IATA Introduction to SMS and the IATA SMS Implementation Guide.

1.6 Provision of Resources

ORG 1.6.1 The Operator shall ensure the existence of the necessary facilities, workspace, equipment and supporting services, as well as work environment, to satisfy operational safety and security requirements. (GM) ►

Guidance

The management system would identify, typically through policy, risk assessment, management review or other means, the infrastructure and resource requirements that would be necessary to deliver safe and secure operations, to include operations and maintenance support facilities, services and equipment appropriate for the area, such as:

- Buildings, workspaces and associated utilities;
- Facilities for people in the organization;
- Support equipment, including tools, hardware and software;
- Support services, including transportation and communication.

A suitable work environment satisfies human and physical factors and considers:

- Safety rules and guidance, including the use of protective equipment;

- Workplace location(s);
- Workplace temperature, humidity, light, air flow;
- Cleanliness, noise or pollution.

ORG 1.6.2 The Operator shall ensure management and non-management positions within the organization that require the performance of functions relevant to the safety or security of aircraft operations are filled by personnel on the basis of knowledge, skills, training and experience appropriate for the position. **(GM)** ►

Guidance

Prerequisite criteria for each position, which would typically be developed by the operator, and against which candidates would be evaluated, ensure personnel are appropriately qualified for management system positions and operational roles in areas of the organization critical to safe and secure operations.

ORG 1.6.3 The Operator shall ensure personnel who perform functions that affect the safety or security of aircraft operations are required to maintain competence on the basis of continued education and training and, if applicable for a specified position, continue to satisfy any mandatory technical competency requirements. **(GM)**

Guidance

Positions or functions within an airline organization considered “operationally critical” are those that have the potential to affect operational safety or security. This definition includes management positions and any positions or functions that may affect the airworthiness of aircraft.

Typically, training programs are implemented to ensure personnel throughout the organization are qualified and competent to perform individual duties.

Some management positions within airline operations may require an individual to maintain a technical competency as a requirement for being assigned to the position. For example, it may be specified that certain management positions within Flight Operations may only be filled by individuals who are qualified flight crew members. Similar situations could exist within Cabin Operations, Engineering and Maintenance or other operational disciplines.

In such cases, the job description specifies the requirement for maintaining technical competency, and adequate opportunity is provided to fulfill the requirement.

ORG 1.6.4 The Operator *should* have a policy that requires personnel who perform operationally critical functions to be physically and medically fit for duty.

ORG 1.6.5 The Operator *should* have a program that ensures personnel throughout the organization are trained and competent to perform SMS duties. The scope of such training shall be appropriate to each individual’s involvement in the SMS. **[SMS] (GM)**

Guidance

SMS training is an element of the Safety Promotion component of the SMS framework.

Within an SMS management and non-management personnel are expected to complete SMS training. A training curriculum typically includes an overview of the elements of SMS and modules that address:

- Event investigation and analysis techniques;
- Hazard identification;
- Risk assessment and mitigation;
- Audit principles and methodology;
- Communication techniques;

- SMS implementation, analysis and continual improvement;
- Emergency response preparedness.

Expanded guidance may be found in the ICAO SMM, the IATA Introduction to SMS and the IATA SMS Implementation Guide.

1.7 (Intentionally open)

1.8 Operational Planning

ORG 1.8.1 The Operator shall ensure the management system includes planning processes for operations which:

- i) Define desired operational safety and security outcomes;
- ii) Address operational resource allocation requirements;
- iii) Take into account requirements originating from applicable external sources, including regulatory authorities and original equipment manufacturers. **(GM)**

Guidance

Management system planning processes are necessary to ensure sufficient resources are in place to meet internal operational safety and security requirements, as well as to meet requirements from external sources, such as regulatory authorities and equipment manufacturers. Resource requirements would typically be determined through risk assessment, management review or other management processes.

Planning processes typically result in the generation of goals, objectives or other types of performance measures that would represent the operational outcomes an operator plans for and desires to achieve.

Planning processes may be part of, or associated with, the budgetary process, which typically take place prior to the start of a calendar or fiscal year, and involve decisions that result in a plan for capital and operating expenditures to support operations.

2 Documentation and Records

2.1 Documentation System

ORG 2.1.1 The Operator shall have a system for the management and control of documentation and/or data used directly in the conduct or support of operations, to include processes for:

- i) Identifying the version of operational documents;
- ii) Distribution that ensures availability of the current version of applicable operations, maintenance and security manuals:
 - a) In appropriate areas of the organization.
 - b) To external service providers that conduct outsourced operational functions.
- iii) Review and revision as necessary to maintain the currency of information contained in documents;
- iv) Document retention that permits easy reference and accessibility;
- v) Identification and control of obsolete and/or reproduced documents;
- vi) Retention and dissemination of documentation received from external sources, to include manuals and documents from regulatory authorities and original equipment manufacturers. **(GM)** ►

Guidance

The primary purpose of document control is to ensure necessary, accurate and up-to-date documents are available to those personnel required to use them, to include, in the case of outsourced operational functions, employees of external service providers.

Examples of documents that are controlled include, but are not limited to, operations manuals, checklists, quality manuals, training manuals, process standards, policy manuals, and standard operating procedures.

An electronic system of document management and control is an acceptable means of conformance. Within such a system, document files are typically created, maintained, identified, revised, distributed, accessed, presented, retained and/or deleted using computer systems (e.g. a web-based system). Some systems specify immediate obsolescence for any information or data that is downloaded or otherwise extracted (e.g. printed on paper) from the electronic files.

Document control, depending on type (electronic or paper), might include:

- Retention of a master copy;
- Examination and approval prior to issue;
- Review and update, to include an approval process;
- Version control (electronic documents);
- Identification of revision status;
- Identification and retention of revisions as history;
- Identification and retention of background or source references as history;
- Distribution to ensure appropriate availability at points of use;
- Checking of documents to verify they remain legible and readily identifiable;
- As required, identification, update, distribution and retention of documents of external origin;
- As applicable, identification and retention of obsolete documents;
- As applicable, disposal of documents.

Additionally, control of operational manuals might include:

- Assignment of an individual with responsibility for approval for contents;
- A title page that generally identifies the operational applicability and functionality;
- A table of contents that identifies parts and sub-parts;
- A preface or introduction outlining the general contents of the manual;
- Reference numbers for the content of the manual;
- A defined distribution method and identification of recipients;
- Identification of responsibility for authorizing the manual;
- A record of revisions, both temporary and permanent;
- A list of effective pages within the manual;
- Identification of revised content.

Each “loose” documented procedure that is not held within a manual typically includes:

- A title page that identifies the operational applicability and functionality;
- Identification of the date(s) of issue and date of effectiveness;
- Reference numbers for the content;
- A distribution list;
- Identification of responsibility for authorizing the document.

ORG 2.1.2 If the Operator utilizes an electronic system for the management and control of any documentation and/or data used directly in the conduct of operations, the Operator shall ensure the system provides for a scheduled generation of backup files for such documentation and/or data. **(GM)** ►

Guidance

To preclude the loss of documents due to hardware or software failures, an electronic system is programmed to create backup files on a schedule that ensures records are never lost. Typically, an electronic system provides for file backup on a daily basis.

To ensure redundancy, an acceptable back-up system would normally have the electronic files required to conduct or support operations immediately available in the event the primary reference system becomes unavailable.

The retention period for electronic documents will vary for each operator, but will always be in accordance with applicable requirements defined by the operator and/or the relevant authority.

To ensure retrieval of archived documents, applicable hardware and/or software is retained after it has been replaced.

ORG 2.1.3 The Operator shall have processes to ensure documentation used in the conduct or support of operations:

- i) Contains legible and accurate information;
- ii) Is presented in a format appropriate for use in operations;
- iii) If applicable, is accepted or approved by the Authority. ►

ORG 2.1.4 The Operator *should* have a documentation system that ensures operations, maintenance and security manuals are centrally managed or coordinated under a corporate scheme of document hierarchy. **(GM)**

Guidance

A centrally controlled or coordinated system ensures a standardized documentation product throughout the organization. Ideally, all documents conform to a corporate standard, thus

ensuring an organization-wide consistency in documentation philosophy, format and presentation of content.

ORG 2.1.5 The Operator *should* have SMS documentation that includes a description of:

- i) The safety policy and objectives, SMS requirements, SMS processes and procedures, the accountabilities, authorities and responsibilities for processes and procedures, and the SMS outputs;
- ii) Its approach to the management of safety, which is contained in a manual as a means of communication throughout the organization. **[SMS] (GM)**

Guidance

SMS documentation is an element of the Safety Policy and Objectives component of the SMS framework.

SMS documentation is typically scaled to the size and complexity of the organization, and describes both the corporate and operational areas of safety management to show continuity of the SMS throughout the organization. Typical documentation would include a description of management positions and associated accountabilities, authorities, and responsibilities within the SMS.

Requirements for SMS documentation will vary according to the individual state safety program (SSP).

For an operator that is in the process of working toward full SMS implementation, documentation would typically include an SMS implementation plan that details the way the operator will structure its organization, resources and processes to effectively manage safety in operations. It is a realistic strategy for implementation of SMS with a realistic timeline of activities.

SMS documentation typically addresses:

- Scope of the SMS;
- Safety policy and objectives;
- Safety accountabilities;
- Key safety personnel;
- Documentation control procedures;
- Coordination of emergency response planning;
- Hazard identification and risk management schemes;
- Safety assurance;
- Safety performance monitoring;
- Safety auditing (safety and quality auditing may be combined);
- Management of change;
- Safety promotion;
- Outsourced services.

To ensure personnel throughout the organization are informed, SMS documentation includes a description of the operator's approach to safety management. Such descriptive information would be contained in a manual and presented in a manner that ensures the SMS information is clearly identifiable. The exact title and structure of such manual will vary with each operator.

SMS documentation supports the management of operations and would be subject to management and control as specified in **ORG 2.1.1**.

Expanded guidance may be found in the ICAO SMM, the IATA Introduction to SMS and the IATA SMS Implementation Guide.

2.2 Records System

ORG 2.2.1 The Operator shall have a system for the management and control of operational records to ensure the content and retention of such records is in accordance with requirements of the Authority, as applicable, and to ensure operational records are subjected to standardized processes for:

- i) Identification;
- ii) Legibility;
- iii) Maintenance;
- iv) Retrieval;
- v) Protection and security;
- vi) Disposal, deletion (electronic records) and archiving. **(GM)** ►

Guidance

The system addresses the management and control of all records associated with operations, which includes personnel training records, and also includes any other records that document the fulfillment of operational requirements (e.g. aircraft maintenance, operational control, operational security).

ORG 2.2.2 If the Operator utilizes an electronic system for the management and control of records, the Operator shall ensure the system provides for a scheduled generation of backup record files. **(GM)** ►

Guidance

Maintaining records in electronic files is a reliable and efficient means of short and long-term storage. The integrity of this type of record-keeping system is ensured through secure, safe storage and backup systems.

In an electronic records system, record files are managed and controlled (i.e. created, maintained, identified, updated, accessed, retained and deleted) using computer systems, programs and displays (e.g. a web-based system).

To preclude the loss of records due to hardware or software failures, an electronic system is programmed to create backup files on a schedule that ensures records are never lost. Typically, an electronic system provides for file backup on a daily basis.

Where necessary, the look and feel of electronic records is similar to that of a paper record.

The retention period for records is defined by the operator and, if applicable, will always be in accordance with requirements of the Authority.

Hardware and software, when updated or replaced, is retained to enable retrieval of old records.

3 Safety Management

3.1 Safety Risk Management

ORG 3.1.1 The Operator *should* have a program that includes a combination of reactive and proactive methods for safety data collection and analysis that are implemented and integrated throughout the organization to identify hazards that present existing or potential risks to aircraft operations. [SMS] (GM) ►

Guidance

Refer to the IRM for the definitions of *Hazard (Aircraft Operations)* and *Safety Risk*.

Hazard identification is an element of the Safety Risk Management component of the SMS framework.

The methods used to identify hazards will typically depend on the resources and constraints of each particular organization. Some organizations might deploy comprehensive, technology-intensive hazard identification processes, while organizations with smaller, less complex operations might implement more modest hazard identification processes. Regardless of organizational size or complexity, to ensure all hazards are identified to the extent possible, hazard identification processes are necessarily formalized, coordinated and consistently applied on an on-going basis in all areas of the organization where there is a potential for hazards that could affect aircraft operations.

To be effective, reactive and proactive processes are used to acquire information and data, which are then analyzed to identify hazards that present either existing or future risks to aircraft operations. Examples of processes that typically yield information or data for hazard identification include:

- Confidential or other reporting by personnel;
- Investigation of accidents, incidents, irregularities and other non-normal events;
- Flight data analysis;
- Observation of flight crew performance in line operations and training;
- Quality assurance and/or safety auditing;
- Safety information gathering or exchange (external sources).

Processes would be designed to identify hazards that might be associated with organizational business changes (e.g. addition of new routes or destinations, acquisition of new aircraft type(s), the introduction of significant outsourcing of operational functions).

Typically hazards, once identified as presenting either existing or potential risk, are assigned a tracking number and recorded in a log or database. Each log or database entry would normally include a description of the hazard, as well as other information necessary to track associated risk assessment and mitigation activities.

Expanded guidance may be found in the ICAO SMM, the IATA Introduction to SMS and the IATA SMS Implementation Guide.

ORG 3.1.2 The Operator *should* have a safety risk assessment and mitigation program that includes processes implemented and integrated throughout the organization to ensure:

- i) Hazards are analyzed to determine the existing and potential safety risks to aircraft operations;
 - ii) Safety risks are assessed to determine the requirement for risk mitigation action(s);
 - iii) When required, risk mitigation actions are developed and implemented in operations.
- [SMS] (GM) ►

Guidance

Risk assessment and mitigation is an element of the Safety Risk Management component of the SMS framework.

To be completely effective, a risk assessment and mitigation program would typically be implemented in a manner that:

- Is active in all areas of the organization where there is a potential for hazards that could affect aircraft operations;
- Has some form of central coordination to ensure all existing or potential hazards that have been identified are subjected to risk assessment and, if applicable, mitigation.

The safety risks associated with an identified hazard are generally expressed in two components:

- Likelihood of an occurrence;
- Severity of the consequence of an occurrence.

Typically, matrices that quantify safety risk acceptance levels are developed to ensure standardization and consistency in the risk assessment process. Separate matrices with different risk acceptance criteria are sometimes utilized to address long-term versus short-term operations.

A risk register is often employed for the purpose of documenting risk assessment information and monitoring risk mitigation (control) actions.

Expanded guidance may be found in the ICAO SMM, the IATA Introduction to SMS and the IATA SMS Implementation Guide.

Operational Reporting

ORG 3.1.3 The Operator shall have an operational safety reporting system that is implemented throughout the organization in a manner that:

- i) Encourages and facilitates personnel to submit reports that identify safety hazards, expose safety deficiencies and raise safety concerns;
- ii) Ensures mandatory reporting in accordance with applicable regulations;
- iii) Includes analysis and management action as necessary to address safety issues identified through the reporting system. [SMS] (GM) ►

Guidance

Operational reporting is considered a *proactive* hazard identification activity in an SMS.

Frontline personnel, such as flight or cabin crew members and maintenance technicians, are exposed to hazards and face challenging situations as part of their everyday activities. An operational reporting system provides such personnel with a means to report these hazards or any other safety concerns so they may be brought to the attention of relevant managers.

To build confidence in the reporting process and encourage more reporting, an acknowledgement of receipt is typically provided to each person that submits a report.

An effective system provides for a review and analysis of each report to determine whether a real safety issue exists, and if so, ensure development and implementation of appropriate action by responsible management to correct the situation.

Expanded guidance may be found in the ICAO SMM, the IATA Introduction to SMS and the IATA SMS Implementation Guide.

ORG 3.1.4 The Operator *should* have a confidential safety reporting system that is implemented throughout the organization in a manner that encourages and facilitates the reporting of events, hazards and/or concerns resulting from or associated with human performance in operations. [SMS] (GM) ►

Guidance

A confidential safety reporting system is considered a *proactive* hazard identification activity in an SMS.

The specified confidential safety reporting system is sometimes referred to as a Confidential Human Factors (or Incident) Reporting System.

The success of a confidential safety reporting system depends on two fundamentals:

- The ability of the organization to assure absolute protection of a report submitted by any individual;
- The level to which individuals within the organization exercise their freedom to report actual or potential unsafe conditions or occurrences.

In certain states, information submitted under a pledge of confidentiality could be subject to laws protecting such information. Therefore, an operator would typically have procedures in place to protect report confidentiality (e.g. de-identification).

There is a difference between confidential reporting and anonymous reporting. Confidential reporting is the preferred system because it permits feedback to the reporter in response to the report. Not only is the reporter entitled to an explanation, but also such feedback provides excellent incentive for the submission of future reports.

The effectiveness of a confidential safety reporting system is determined by a basic requirement for safeguarding safety and risk information. Typically, individuals will continue to provide information only when there is confidence that such information will be used only for safety purposes and will never be compromised or used against them.

An effective confidential safety reporting system might typically include:

- A process that provides absolute protection of confidentiality;
- An articulated policy that encourages reporting of hazards and human errors in operations;
- A shared responsibility between the individual flight and cabin crew members (or, if applicable, respective professional associations) and the organization to promote a confidential safety reporting system;
- A process for secure de-identification of confidential reports;
- A tracking process of action taken in response to reports;
- A process to provide feedback to the reporter;
- A communication process for ensuring flight and cabin crew members, as well as other relevant personnel, are informed of potential operating hazards through dissemination of de-identified report information.

3.2 Safety Assurance

ORG 3.2.1 The Operator *should* have processes for setting performance measures as a means to monitor the operational safety performance of the organization and to validate the effectiveness of safety risk controls. [SMS] (GM) ►

Guidance

Refer to the IRM for the definition of *Performance Measures*.

Setting measurable safety objectives is included in the safety performance monitoring and measurement element of the Safety Assurance component of the SMS framework.

By setting performance measures, an operator is able to track and compare its operational performance against a target (i.e. the performance objective, typically expressed as a rate or number reduction) over a period of time (e.g. one year). Achievement of the target (or objective)

would represent an improvement in the operational performance. The use of performance measures is an effective method to determine if desired safety outcomes are being achieved, and to focus attention on the performance of the organization in managing operational risks and maintaining compliance with relevant regulatory requirements.

In addressing operational performance, meaningful measures typically focus on lower level (i.e. lower consequence) occurrences or conditions that are considered by the operator to be precursors to serious events. Performance measures may be specific to a certain area of operations or may be broad and apply to the entire system.

In addressing compliance, meaningful measures, as a minimum, would focus on compliance with significant regulatory requirements (as determined by the operator) in all operational areas.

Ideally, performance measures are designed to be challenging, which, in turn, enhances the effectiveness of the risk management system.

Performance measures may be set in almost any operations or maintenance area. Some possible examples include:

- Flight operations (e.g., landing tail strikes, unsatisfactory line or training evaluations);
- Operational control (e.g., fuel diversions due to fuel);
- Engineering and maintenance (in-flight engine shutdowns, aircraft component/equipment failures);
- Cabin operations (inadvertent slide deployments);
- Ground handling (aircraft damages due to vehicles or equipment);
- Cargo operations (dangerous goods spills);
- Operational security (unauthorized interference or access events).

Expanded guidance may be found in the ICAO SMM, the IATA Introduction to SMS and the IATA SMS Implementation Guide.

ORG 3.2.2 The Operator *should* have a process to identify changes within or external to the organization that have the potential to affect the safety of aircraft operations, and:

- i) For internal changes, ensure safety risk is considered before such changes are implemented;
- ii) For external changes, evaluate the adequacy of existing risk controls when such changes will affect the operational environment. [SMS] (GM)

Guidance

Refer to the IRM for the definition of *Change Management*.

Change management is an element of the Safety Assurance component of the SMS framework.

Change management is considered a proactive hazard identification activity in an SMS.

A change management process is designed to ensure risk management is applied to any internal or external changes that have the potential to affect established operational processes, procedures, products and services.

Internal changes typically include organizational expansion, contraction or consolidation, new initiatives, business decisions, as well as the introduction of new or the modification of existing systems, equipment, programs, products or services.

External changes could include new regulatory requirements or changes to the operating environment (e.g. new security regulations, amendments to the dangerous goods regulations, changes to the air traffic control system).

Expanded guidance may be found in the ICAO SMM, the IATA Introduction to SMS and the IATA SMS Implementation Guide.

3.3 Flight Safety Analysis Program

ORG 3.3.1 The Operator shall have a flight safety analysis program that provides for the identification of hazards and the analysis of information and data associated with aircraft operations, to include:

- i) Implementation of systematic processes for identifying and analyzing hazards and potentially hazardous conditions;
- ii) Production of relevant analytical information and data for use by operational managers in the prevention of accidents and incidents. **[SMS] (GM)**

Guidance

Refer to the IRM for the definition of *Flight Safety Analysis Program*.

Hazard identification is an element of the Safety Risk Management component of the SMS framework.

In many organizations the flight safety analysis program is typically known as the flight safety program.

The flight safety analysis program primarily provides operational hazard identification and data analysis services for use by operational managers.

In some operators the flight safety analysis program is part of an independent corporate safety structure, which typically has a direct line of reporting to senior management. This type of structure allows an effective and fully integrated system of prevention and safety across all relevant operational disciplines of the organization.

Other operators choose to have a flight safety analysis program reside within an operational unit (e.g., flight operations). In this type of system, to be effective, the program manager would have a direct reporting line to the most senior executive(s) in that operational unit and, to ensure complete objectivity in safety matters, function independently from frontline operational management.

Documentation of the program typically includes a description of the structure, individual responsibilities, available resources and core processes associated with the program.

Expanded guidance may be found in the ICAO SMM, the IATA Introduction to SMS and the IATA SMS Implementation Guide.

ORG 3.3.2 The Operator shall have a designated manager with appropriate qualifications, authority and independence (from operational management), that is responsible for the performance of the flight safety analysis program, and for ensuring communication and coordination with appropriate operational managers. **(GM)**

Guidance

The exact title of the manager responsible for the flight safety analysis program may vary depending on the organization.

The manager oversees the implementation of all activities and processes associated with the program. An effective working environment results in full cooperation between the program manager and those operational managers that have direct responsibility for the safety of operations. It is not the role of the program manager to dictate safety action, but rather to provide services that assist operational managers in their role of ensuring safe and secure operations.

To be effective, the manager of the flight safety analysis program would typically have qualifications appropriate for the position, which might include:

- Requisite licensing, as applicable;
- Relevant operational and safety experience;
- Formal training in risk management.

ORG 3.3.3 The Operator shall have a process to ensure significant issues arising from the flight safety analysis program are subject to management review in accordance with **ORG 1.5.1** and, as applicable, **ORG 1.5.2. [SMS] (GM)**

Guidance

Continual improvement of safety performance is an element of the Safety Assurance component of the SMS framework.

Such review permits senior management to consider issues that have the potential to affect the safety of operations, and ensure appropriate corrective or preventive actions have been implemented and are being monitored for effectiveness in preventing accidents and incidents.

ORG 3.3.4 The Operator shall have a means for disseminating information and data from the flight safety analysis program to appropriate operations personnel. **[SMS] (GM)**

Guidance

Promulgation of safety information is an element of the Safety Promotion component of the SMS framework.

As a means of safety promotion, an effective flight safety analysis program includes a means for the promulgation and dissemination of safety information and data for the continuing education and interest of operational and other associated personnel. Such dissemination of information might include an up-to-date status of operational performance against stated performance measures.

The process ensures a method of safety information dissemination commensurate with the size of the operation. Typical means of dissemination include a magazine, newsletter or bulletin issued periodically. Electronic media in various forms are also effective in the timely dissemination of information.

ORG 3.3.5 The Operator *should* have an electronic database to ensure effective management of data derived from the flight safety analysis program. **(GM)**

Guidance

The intent of this provision is for an operator to have an electronic database that permits an operator to manage information and data associated with aircraft operations in a manner that results in the identification of hazards and the provision of information to operational managers as specified in **ORG 3.3.1**.

The type and complexity of such database will vary according to the size and scope of the organization.

ORG 3.3.6 – 3.3.9 (Intentionally open)

Program Elements

ORG 3.3.10 The Operator shall have a process for the investigation of aircraft accidents and incidents, to include reporting of events in accordance with requirements of the State. **[SMS] (GM)**

Guidance

Accident and incident investigation is considered a *reactive* hazard identification activity in an SMS.

Investigations typically result in a report that describes the factors that contributed to the event, which is then made available to responsible senior operational managers to permit them to evaluate and implement appropriate corrective or preventive action.

An effective investigation process typically includes:

- Qualified personnel to conduct investigations (commensurate with operation size);
- Procedures for the conduct of investigations;

- A process for reporting investigative results;
- A system for implementing any corrective or preventive action;
- An interface with relevant external investigative authorities (when applicable);
- A process for the dissemination of information derived from investigations.

To ensure awareness among operational personnel, information derived from investigations is disseminated to relevant areas throughout the organization.

In the event of a major accident, an operator responds to and possibly participates in an investigation in accordance with provisions contained in ICAO Annex 13. Such capability requires an operator to maintain an ongoing interface with relevant investigative authorities to ensure preparedness in the event a major accident occurs.

Expanded guidance may be found in the ICAO SMM, the IATA Introduction to SMS and the IATA SMS Implementation Guide.

ORG 3.3.11 The Operator shall have a process for identifying and investigating irregularities and other non-routine operational occurrences that might be precursors to an aircraft accident or incident. [SMS] (GM)

Guidance

Investigation of operational irregularities is considered a *reactive* hazard identification activity in an SMS.

The investigation of irregularities or non-routine occurrences is a hazard identification activity. Minor events, irregularities and occurrences occur often during normal operations, many times without noticeable consequences. Identifying and investigating certain irregular operational occurrences can reveal system weaknesses or deficiencies that, if left un-checked, could eventually lead to an accident or serious incident. These types of events are referred to as accident *precursors*.

A process to monitor operations on a regular basis permits the identification and capture of information associated with internal activities and events that could be considered precursors. Such events are then investigated to identify undesirable trends and determine contributory factors.

The monitoring process is typically not limited to occurrences, but also includes a regular review of operational threats and errors that have manifested during normal operations. Monitoring of normal operations can produce data that further serve to identify operational weaknesses and, in turn, assist the organization in developing system solutions.

As with the investigation of accidents and serious incidents, the investigation of minor internal occurrences results in a report that is communicated to relevant operational managers for analysis and the possible development of corrective or preventive action.

Expanded guidance may be found in the ICAO SMM, the IATA Introduction to SMS and the IATA SMS Implementation Guide.

ORG 3.3.12 (Intentionally open)

ORG 3.3.13 The Operator shall have a flight data analysis (FDA) program that is non-punitive and contains adequate safeguards to protect data sources. The program shall include **either**:

- i) For aircraft of a maximum certified takeoff mass in excess of 27,000 kg (59,525 lb), a systematic download and analysis of electronically recorded aircraft flight data, **or**
- ii) for all aircraft, a systematic acquisition, correlation and analysis of flight information derived from a combination of some or all of the following sources:
 - a) Aircraft flight data recorder (FDR) readouts;

- b) Confidential flight and cabin crew operational safety reports;
- c) Flight and cabin crew interviews;
- d) Quality assurance findings;
- e) Flight and cabin crew evaluation reports;
- f) Aircraft engineering and maintenance reports. [SMS] (GM)

(Note: Item ii) is a Parallel Conformity Option in effect until 31 December 2013.)

Guidance

Refer to the IRM for the definition of *Flight Data Analysis (FDA) Program*.

Flight data analysis is considered a *reactive* and *proactive* hazard identification activity in an SMS.

The systematic download and analysis of recorded flight data has been used by international airlines for many years to identify hazards, evaluate the operational environment, validate operating criteria and establish training effectiveness.

As a minimum, an acceptable program for the analysis of recorded aircraft flight data includes the following elements:

- A manager and staff of flight operations experts, commensurate with the size of the operation, to provide verification and analysis of the data collected from the aircraft fleet under the operator's program;
- Aircraft designated within the operator's fleet that provide downloadable flight data from onboard recording systems, such as the flight data recorder (FDR) or quick access recorder (QAR);
- A system for downloading and transferring recorded data from the aircraft to a data analysis system;
- A data analysis system that transforms raw digital data into a usable form of information that can then be verified, processed, categorized and analyzed by flight operations experts for flight safety purposes;
- A process for applying the output from flight data analysis to the management of risk and assessment of flight operations performance;
- A process for management of the data, to include security and retention.

All or certain of the elements could be outsourced to an external party; however, the operator would retain overall responsibility for the maintenance of the program.

The most comprehensive approach to flight data analysis would be a program that includes not only systematic download and analysis of electronically recorded aircraft flight data (as described above), but also acquisition, correlation and analysis of flight information derived from other sources (as described below).

Further guidance may be found in the ICAO Safety Management Manual (Doc 9859).

Parallel Conformity Option

If an operator does not have a process for the regular download and analysis of recorded flight data, then as an alternative the operator may have a systematic process for acquiring and correlating flight information from other sources that can be analyzed to identify hazards or potential hazards to flight.

Useful information can be derived from external sources to supplement flight data derived internally. Other such sources include:

- Regulatory authorities;
- Investigative bodies;

- Safety organizations;
- Manufacturers;
- Other operators.

Flight information is analyzed collectively to identify hazards, system weaknesses, process breakdowns, regulatory violations and other trends or conditions that could potentially lead to accidents or serious incidents. The process includes a method of risk analysis and prioritization to enable the development and implementation of effective corrective or preventive action.

ORG 3.3.14 The Operator *should* have a program for the systematic acquisition and analysis of data from observations of flight crew performance during normal line operations. **(GM)**

Guidance

If implemented, line monitoring is considered a *proactive* hazard identification activity in an SMS.

A line-monitoring program is a completely different activity from line evaluation (or line checking) of the flight crew. Line operations monitoring cannot be accomplished in conjunction with any type of operational evaluation of the flight crew.

Under this program, flight crew performance in a normal line environment is observed from the flight deck jump seat by individuals who have been specially selected and trained. Observers, with the cooperation of the flight crew, systematically gather operational data that can be analyzed and used to make real improvements to certain areas of the operation. Observers are particularly aware of, and record, threats and errors that occur in the operating environment.

The Line Operations Safety Audit (LOSA) is a well-known and successful example of a normal line operations monitoring program.

An acceptable program would have the following characteristics:

- A planned and organized series of observations of flight crew performance during normal line flights is typically conducted a minimum of once during every four year period.
- Observations are conducted on regular and routine line flights, and the flight crew is advised and clearly understands that normal line monitoring is not an evaluating, training or checking activity. The flight crew would be expected to operate as if the observer were not there.
- There is mutual support and cooperation from both the management of the operator and flight crew members (through their professional association, if applicable).
- Participation from the flight crew is voluntary; observations are not conducted unless permission is received from the flight crew.
- Data collected from observations are confidential, de-identified and used for safety enhancement purposes only. Data from an observation are never permitted to be used for disciplinary action unless there is evidence of willful misconduct or illegal activity.
- Procedures are in place to ensure data from observations are retained in a way that ensures effective security.
- Objectives of observations are clearly defined, and collected data are always used to address specific issues that affect flight safety.
- Observers are specifically selected and trained (calibrated) to ensure a high level of consistency and standardization in the data being collected. Observers are objective, impartial and have a high level of integrity.
- There is a process in place to ensure data collected from observations are subjected to analysis from appropriately diverse subject matter experts to ensure consistency and accuracy.

- Data derived from observations are analyzed and presented in a manner that identifies potential weakness and permits the operator to develop appropriate action(s) that will enhance specific aspects of the operation.
- Results from the monitoring program, including the corrective action plan, are communicated to flight crew members.

Expanded guidance may be found in the ICAO SMM, the IATA Introduction to SMS and the IATA SMS Implementation Guide.

3.4 Quality Assurance Program

ORG 3.4.1 The Operator shall have a quality assurance program that provides for the auditing and evaluation of the management system, and of operations and maintenance functions, to ensure the organization is:

- i) Complying with applicable regulations and standards of the Operator;
- ii) Satisfying stated operational needs;
- iii) Identifying areas requiring improvement;
- iv) Identifying hazards to operations. **[SMS] (GM) ►**

Guidance

Refer to the IRM for the definition of *Quality Assurance*.

If the quality assurance program is structured for safety assurance as well, such program is considered part of the continuous improvement element of the SMS.

Information gained from quality assurance audits could be used in the management of operational risk. Additionally, the quality assurance program could be structured to serve as a safety performance monitoring and measuring activity in an SMS. In some organizations the quality assurance program may have a different name (e.g. internal evaluation program).

A robust program ensures a scope of auditing that encompasses all areas of the organization that impact operational safety or security. The incorporation of IOSA Standards and Recommended Practices (ISARPs) would ensure appropriate operational areas are audited.

Audits are conducted of functions throughout the organization that are relevant to the safety and security of operations. Operational functions include flight operations, operational control/flight dispatch, maintenance operations, cabin operations, ground handling and cargo operations.

This provision is designed to permit flexibility in the implementation of the quality assurance program: a centralized internal audit program, individual audit programs in each operational area or any combination thereof are all acceptable as long as each of the operational areas under the scope of IOSA is audited.

An effective audit program includes:

- Audit initiation, including scope and objectives;
- Planning and preparation, including audit plan and checklist development;
- Observation and gathering of evidence;
- Analysis, findings, actions;
- Reporting and audit summary;
- Follow-up and close out.

To ensure auditors gather sufficient evidence to produce realistic assessments during an audit, the program typically includes guidance that defines the various sampling techniques that are expected to be used by auditors in the evidence collection phase of the audit.

The audit process typically includes a means whereby the auditor and responsible personnel from the audited area have a comprehensive discussion and reach agreement on the findings and corresponding corrective actions. Clear procedures may be established to resolve any disagreement between the auditor and audited area.

All action items require follow-up to ensure closeout within an appropriate period of time.

ORG 3.4.2 The Operator shall have a designated manager with appropriate qualifications, authority and independence that is responsible for:

- i) The performance of the quality assurance program;
- ii) Ensuring communication and coordination with operational managers in the management of operational risk. **(GM)**

Guidance

Refer to the IRM for the definition of *Quality Assurance Manager*.

The designated manager (or multiple managers if an operator does not have a centralized program) is appointed to oversee the implementation of the activities and processes associated with the quality assurance program.

The exact title of the manager(s) designated as responsible for the quality assurance program may vary depending on the organization.

Operational managers have direct responsibility for the safety and security of operations, and therefore always have the authority to develop and implement corrective action as necessary to address audit findings in their respective areas of operations.

The manager of the quality assurance program is “operationally independent” in a manner that ensures objectivity is not subject to bias due to conflicting responsibilities.

To be effective, an individual designated as manager of the quality assurance program has appropriate qualifications for the position, which may include:

- Formal training or certification as a quality auditor;
- Relevant operational and auditing experience;
- Formal training in risk management.

Quality assurance audit activities may be centrally controlled or controlled within each relevant operational function as long as independence is maintained.

Typically, the manager of the quality assurance program has direct lines of communication to senior management to ensure the efficient reporting of safety and security issues, and to ensure such issues are appropriately addressed.

ORG 3.4.3 The Operator shall have a process for addressing findings that result from audits conducted under the quality assurance program, which ensures:

- i) Identification of root cause(s);
- ii) Development of corrective action as appropriate to address findings;
- iii) Implementation of corrective action in appropriate operational area(s);
- iv) Evaluation of corrective action to determine effectiveness. ►

ORG 3.4.4 The Operator shall have a process to ensure significant issues arising from the quality assurance program are subject to management review in accordance with **ORG 1.5.1** and, as applicable, **ORG 1.5.2. [SMS] (GM)** ►

Guidance

Continual improvement of safety performance is an element of the Safety Assurance component of the SMS framework.

Such review permits senior management to consider significant issues of non-compliance in areas of the organization that impact operational safety and security, and to:

- Continually monitor and assess operational safety and security outcomes;
- Ensure appropriate corrective or preventive actions that address the relevant compliance issues have been implemented and are being monitored for effectiveness;
- Ensure continual improvement of operational safety and security performance.

ORG 3.4.5 The Operator shall have a means for disseminating information from the quality assurance program to management and non-management operational personnel as appropriate to ensure an organizational awareness of compliance with applicable regulatory and other requirements. [SMS] (GM)

Guidance

Promulgation of safety information is an element of the Safety Promotion component of the SMS framework.

An effective quality assurance program includes a process for promulgating and disseminating information for the purpose of maintaining an ongoing awareness of compliance issues that might impact operational safety or security. Such dissemination of information might include an up-to-date status of operational performance against stated performance measures, as described in **ORG 3.2.1**. The process ensures a method of dissemination commensurate with the size of the organization. Acceptable means include a magazine, newsletter or bulletin issued periodically. Electronic media in various forms are also effective in the timely dissemination of information.

ORG 3.4.6 The Operator *should* ensure the quality assurance program as specified in **ORG 3.4.1** includes processes that provide for ongoing conformity with all IOSA Standards, to include:

- i) Auditing and evaluation of the management system, as well as operations and maintenance functions, against IOSA Standards and Recommended Practices (ISARPs) during a period not to exceed 24 months;
- ii) Production of an IOSA Conformance Report as specified in **ORG 3.4.7** as the true and accurate record of auditing conducted against ISARPs and conformity with all IOSA Standards. (GM)

Guidance

To ensure ongoing conformity with all IOSA Standards, an operator's quality assurance program would typically include a database (or equivalent system) that:

- Contains the relevant information associated with the audit or evaluation conducted against each IOSA Standard;
- Has the capability to generate an IOSA Conformance Report.

ORG 3.4.7 The Operator *should* have a process for the production of a Conformance Report that is certified by the accountable executive, or designated management official on behalf of the accountable executive, as the true and accurate record of conformity with all IOSA standards. The Conformance Report *should* include, for each individual IOSA Standard:

- i) Alpha-numeric identifier;
- ii) Appropriate documentation references (from the operator's documentation system);
- iii) Internal auditor name;
- iv) Audit date;

- v) List of specific steps taken or specific areas audited by the auditor to assess implementation;
- vi) Current conformance status (documented and implemented). **(GM)**

Guidance

The process for producing the IOSA Conformance Report is described in the quality assurance program documentation.

ORG 3.4.8 – 3.4.9 (Intentionally open)

Program Elements

ORG 3.4.10 The Operator shall have an audit planning process and sufficient resources, including auditors as specified in **ORG 3.4.12** to ensure audits are:

- i) Scheduled at intervals to meet regulatory and management system requirements;
- ii) Completed within a specified time period. **(GM) ►**

Guidance

The planning process produces a schedule of all audit modules to be conducted within the planning period (e.g., calendar year) and reflect the status of each audit module, to include the applicable audit interval (e.g., 12, 24, 36 months), the date of the previous audit and the scheduled due date for the next audit.

ORG 3.4.11 The Operator shall ensure the audit planning process defines the scope of each audit, as appropriate for the area being audited, and also:

- i) Includes audit objectives that address ongoing compliance with regulatory requirements, Operator standards and other applicable regulations, rules and requirements;
- ii) Considers relevant operational safety or security events that have occurred;
- iii) Considers results from previous audits, including the effectiveness of corrective action that has been implemented. **(GM)**

Guidance

The audit scope refers to the breadth of operational disciplines or operational areas covered by an audit and therefore will vary depending on the focus area for each audit (e.g., flight dispatch function, dangerous goods handling, ramp handling operations, line maintenance activities).

Audit objectives define tangible achievements expected to result from an audit, normally expressed as a statement of intent (e.g., to determine compliance with regulatory requirements, to establish conformity with Operator standards, to determine efficiency of operations).

To be effective, auditors prepare for an audit of a particular area of operations by:

- Conducting research into any relevant incidents or irregularities that may have occurred;
- Reviewing reports from previous audits.

ORG 3.4.12 The Operator shall ensure the quality assurance program utilizes auditors that:

- i) Have been appropriately trained and qualified;
- ii) Are impartial and functionally independent from operational areas to be audited. **(GM)**

Guidance

A quality assurance program is independent in a manner that permits the scheduling and conduct of audits as deemed appropriate for the size and scope of operations. Operational independence ensures auditors are not put in a position where their objectivity may be subject to bias due to conflicting responsibilities. Quality audit principles forbid an auditor from auditing his or her own work area.

To be effective, auditors receive an appropriate level of formal training that develops competency in quality auditing skills and techniques.

A code of conduct may be used to enhance the impartiality and independence of auditors. An effective auditor code of ethics would require auditors:

- To act in a strictly trustworthy and unbiased manner in relation to both the organization to which they are employed, contracted or otherwise formally engaged and any other organization involved in an audit performed by them or by personnel under their direct control;
- To disclose to their employer any relationship they may have with the organization to be audited before undertaking any audit function in respect of that organization;
- Not to accept any gift, commission, discount or any other profit from the organization audited, from their representatives, or from any other interested person nor knowingly allow personnel for whom they are responsible to do so;
- Not to disclose the findings, or any part of them, nor to disclose any other information gained in the course of the audit to any third party, unless authorized in writing by both the auditee and the audit organization, if applicable;
- Not to act in any way prejudicial to the reputation or interest of the audit organization; and
- In the event of any alleged breach of this code, to co-operate fully in any formal enquiry procedure.

ORG 3.4.13 The Operator *should* ensure the quality assurance program utilizes auditors that have the appropriate training and experience to conduct auditing and evaluation against the IOSA standards as specified in **ORG 3.4.12**. Such auditors *should*:

- i) Have the knowledge, skills and work experience appropriate for the areas of the management system and operations that will be audited;
- ii) Maintain an appropriate level of current audit experience;
- iii) Complete initial and continuing auditor training;
- iv) Complete an evaluation on a periodic basis against objective measures. **(GM)**

Guidance

It is recommended that auditors utilized in the quality assurance program are trained and/or certified in accordance with internationally recognized standards. Such auditor standards are published in:

- ICAO Doc 8335 (Chapter 6);
- ISO 19011;
- FAA Codeshare Safety Program Guidelines;
- IOSA Program Manual (Section 3).

ORG 3.4.14 The Operator *should* have an electronic database to ensure effective management of data derived from the quality assurance program. **(GM)**

Guidance

Refer to the IRM for the definition of *Database*.

3.5 Outsourcing Quality Control

ORG 3.5.1 The Operator shall have processes to ensure a contract or agreement is executed with external service providers that conduct outsourced operations, maintenance or security functions for the Operator. Such contract or agreement shall identify measurable specifications that can be

monitored by the Operator to ensure requirements that affect the safety and/or security of operations are being fulfilled by the service provider. (GM) ►

Guidance

Refer to the IRM for the definitions of *Outsourcing* and *Service Level Agreement*.

An operator would always retain full responsibility for ensuring an outsourced function is performed properly by an external provider, even if such provider is the parent organization or an affiliate of the operator.

A contract or agreement is necessary to ensure details of the outsourced functions to be performed by the external service provider are formally documented. Inclusion of measurable specifications, usually contained in a service level agreement, would provide the basis for a monitoring process as specified in **ORG 3.5.2**.

ORG 3.5.2 The Operator shall have processes to monitor external service providers that conduct outsourced operations, maintenance or security functions for the Operator to ensure requirements that affect the safety and/or security of operations are being fulfilled. (GM) ►

Guidance

An operator has a responsibility to ensure outsourced functions are conducted in a manner that meets its own operational safety and security requirements. A monitoring process is necessary to satisfy that responsibility, and such process would be applicable to any external service provider that conducts outsourced operational functions for the operator, including the parent organization or a separate affiliate of the operator.

In some regulatory jurisdictions, there may be a regulatory control process that permits certain organizations to meet rigorous standards and become approved to conduct outsourced operational functions for an operator. A regulatory control process would be an acceptable means for meeting the specification of this provision if it can be demonstrated by the operator that the regulatory control process:

- Includes ongoing monitoring of the approved service providers;
- Such monitoring is sufficiently robust to ensure the approved service providers fulfill the operational requirements of the operator on a continuing basis.

Under certain circumstances, operational functions may be involuntarily removed from an operator and conducted by a governmental or quasi-governmental authority that is not under the control of the operator (e.g., passenger or baggage security screening at some airports). Under such circumstances, the operator would have a process to monitor output of the function being conducted by the authority to ascertain desired results are being achieved.

ORG 3.5.3 The Operator *should* include auditing as a process for the monitoring of external service providers in accordance with **ORG 3.5.2**. ►

ORG 3.5.4 If the Operator satisfies aircraft operational needs through a *wet lease* agreement with another operator, the Operator shall have a process to monitor the performance of such other operator to ensure operational safety and security needs of the Operator are being fulfilled. (GM)

Guidance

Refer to the IRM for the definition of *Wet Lease (Aircraft)*.

Individual operators may use different names or terms in referring to the wet lease concept (e.g. capacity purchase agreement).

Wet lease operations may vary, but typically under a wet lease agreement, one operator (the lessee) leases an aircraft from another operator (the lessor), and the aircraft is operated and

supported by the lessor. Typical support functions include operational control of flights, maintenance of aircraft and/or implementation of security controls.

The process for monitoring the performance of a wet lease organization is designed and implemented to ensure the operations and security needs of the operator are met.

3.6 Product Quality Control

ORG 3.6.1 The Operator *should* have processes to ensure equipment or other operational products relevant to the safety or security of aircraft operations that are purchased or otherwise acquired from an external vendor or supplier meet the product technical requirements specified by the Operator prior to being used in the conduct of operations or aircraft maintenance. **(GM)** ►

Guidance

This provision applies only to *products* that are purchased or otherwise acquired from an external supplier or vendor. This provision does not apply to outsourced *operational functions* or *services* that are provided by an external organization or service provider (this is addressed in **ORG 3.5.1** and **3.5.2**).

This provision does not apply to electronic navigation data products utilized in flight (e.g., FMS database) or for operational control (e.g. flight planning database). The acquisition of such navigation data products require control procedures, as specified in Sections 2 (FLT) and 3 (DSP).

Following are some examples of products that could have a negative effect on operations if put into service with substandard quality (i.e. the operator's technical standards are not met):

- Training devices (e.g. simulators, door mock-ups);
- Cabin safety cards or videos;
- Cabin service carts or trolleys;
- Onboard safety equipment (e.g. PBE, life jackets);
- Ground support equipment;
- Operational software, databases (non-navigation);
- Security screening equipment;
- Unit load devices (ULDs).

Part of the process is a method for identifying products that have a direct effect on the safety or security of operations.

To ensure technical specifications are met, a process may focus either on the supplier, the product or a combination of both.

The process may include an evaluation of suppliers, with the selection of suppliers based on their ability to supply products in accordance with the operator's requirements and technical specifications.

The use of formal industry supplier audit or evaluation programs is one means for assessing the abilities of suppliers to deliver quality products, such as the Coordinating Agency for Supplier Evaluation (CASE).

Implementation of a rigorous receiving inspection process (or equivalent activity) provides another means of verifying that operationally critical products meet specified technical requirements prior to such products being put into service.

4 Emergency Response

4.1 Emergency Response Plan

ORG 4.1.1 The Operator shall have a corporate emergency response plan (ERP) for the central management and coordination of all activities should it be necessary to respond to a major aircraft accident or other type of adverse event that results in fatalities, serious injuries, considerable damage and/or a significant disruption of operations. [SMS] (GM)

Guidance

Refer to the IRM for the definition of *Emergency Response Plan (ERP)*.

Emergency response planning is an element of the Safety Policy and Objectives component of the SMS framework.

An emergency (or crisis) response plan is based upon an assessment of risk appropriate to the size and type of operations, and includes consideration of a major aircraft accident and other potential aircraft and/or non-aircraft events that would require a full corporate emergency response.

In some states, emergency or crisis response is assumed by a governmental authority rather than by the operator. In such case, an emergency response plan focuses on and addresses interaction with and/or participation in the governmental response to an emergency or crisis.

An effective ERP includes industry best practices and ensure community expectations are addressed. Additionally, an ERP:

- Specifies general conditions for implementation;
- Provides a framework for an orderly implementation (refer to **ORG 4.1.4**);
- Ensures proper coordination with external entities at all potential locations as specified in **ORG 4.1.4**;
- Addresses all potential aspects of an event, including casualties;
- Ensures regulatory requirements associated with specific events are satisfied;
- Provides a scenario for the transition back to normal operations (refer to **ORG 4.1.4**);
- Ensures regular practice exercises as a means to achieve continual improvement (refer to **ORG 4.1.14** and **ORG 4.1.15**).

ORG 4.1.2 The Operator shall have a designated manager with appropriate qualifications and authority to manage and be responsible for the development, implementation and maintenance of the corporate ERP. (GM)

Guidance

The exact title of the manager designated as responsible for the corporate ERP may vary depending on the organization.

In order to manage a corporate ERP, an individual's qualifications would typically include training and background experience that ensures the requisite knowledge in emergency response principles. Such experience and knowledge is necessary, even though various ERP functions are typically delegated to designated personnel throughout the management system.

ORG 4.1.3 If the Operator has individual departmental or station emergency response plans within the organization, the Operator shall ensure such individual plans are coordinated with the overall corporate emergency response plan under the ERP manager. (GM)

Guidance

Certain operational departments might have individual ERPs, especially where departments are located remotely (e.g. maintenance or cargo). Likewise, station ERPs might be individually

tailored to meet varying requirements at each station. Therefore, coordination is always required to ensure each individual ERP within an operator's organization contains or addresses the applicable common elements of the corporate ERP.

ORG 4.1.4 The Operator *should* ensure the ERP as specified in **ORG 4.1.1** provides for:

- i) A transition from normal to emergency operations;
 - ii) A return to normal operations;
 - iii) Coordination with all relevant external organizations during the course of ERP execution.
- [SMS] (GM)**

Guidance

Expanded guidance may be found in the ICAO SMM, the IATA Introduction to SMS and the IATA SMS Implementation Guide.

ORG 4.1.5 – 4.1.9 (Intentionally open)

Plan Elements

ORG 4.1.10 The Operator shall have a process in the ERP to provide an accurate manifest to the appropriate authorities in the event of an aircraft accident. Such manifest shall list crew members, passengers and cargo, to include dangerous goods.

ORG 4.1.11 (Intentionally open)

ORG 4.1.12 The Operator shall have published procedures and assigned responsibilities to ensure a coordinated execution of the corporate ERP. **(GM)**

Guidance

Personnel are typically assigned with specific responsibilities throughout the organization for the implementation of procedures associated with the ERP. Such responsibilities and procedures might include:

- Assemblage of required personnel;
- Travel arrangements, as required;
- Provision of facilities, equipment and other resources;
- Humanitarian and other assistance to individuals involved in the event, as required;
- Management of continuing normal operations;
- Control of areas impacted by the event, as applicable;
- Liaison with relevant authorities and other external entities.

The following areas would normally be considered in developing plans for liaison with external entities associated with any event:

- Fire;
- Police;
- Ambulance;
- Coast guard and other rescue agencies;
- Hospitals and other medical facilities;
- Medical specialists;
- Civil aviation or defense agencies;
- Poison control centers;
- Chemical or radiation specialists;

- Environmental agencies;
- Insurance companies.

Additionally, contact and arrangements are typically made with certain operational business partners, including code share and wet lease operators.

ORG 4.1.13 The Operator *should* ensure all personnel with responsibilities under the ERP are appropriately trained and qualified to execute applicable procedures. **(GM)**

Guidance

Refer to the IRM for the definition of *Family Assistance*.

Training for personnel with responsibilities under the ERP could be conducted externally or in-house by an operator's own qualified staff, and would typically include drills, desktop exercises, and/or simulations. Attendees typically include both management and operational personnel from the headquarters and, as applicable to the operator's structure, station locations.

Ideally, specific and/or personalized training would also be conducted for key senior managers (e.g. CEO).

Training programs are generally tailored for personnel based on the role performed under the ERP. Typically, persons involved in family assistance and crisis communications, as well as members of the corporate emergency response group or committee (as applicable), would be required to complete ERP training.

The curriculum for ERP training normally includes general subjects associated with emergency response management, as well as role-specific subjects that address issues associated with:

- Family assistance/special assistance;
- Cultural sensitivity;
- Telephone enquiry;
- Team call-out and assembly;
- Crash site discipline;
- Effects retrieval.

ORG 4.1.14 The Operator shall ensure the corporate ERP is rehearsed periodically to:

- i) Familiarize personnel with responsibilities and procedures;
- ii) Ensure ready functionality of all equipment and facilities;
- iii) Expose deficiencies in the plan and its execution, and ensure such deficiencies are addressed. **(GM)**

Guidance

The ERP typically has provisions that ensure all aspects of the ERP are rehearsed or practiced at regular intervals, and practice exercises include the involvement of all personnel that would be called upon during an actual emergency or crisis situation. The results of rehearsals or practice exercises are normally recorded and analyzed, and then used as the basis for continual improvement of the plan (refer to **ORG 4.1.15**).

ORG 4.1.15 The Operator *should* have a process for a detailed debriefing and critique whenever the ERP is executed, either as a rehearsal or in response to an actual event. **(GM)**

Guidance

Such process ensures vital information is communicated to regulatory authorities, corporate management, operational personnel and the local community whenever the ERP is activated, whether for an actual event or for a rehearsal.

If recommendations for corrective action or other changes result from activation of the plan, there should be a process for providing a de-briefing to relevant internal and external entities to ensure awareness and consideration of such recommendations.

ORG 4.1.16 The Operator *should* have the ready availability of a facility for use as an emergency command center with sufficient space, furnishings and equipment to successfully manage the execution of the corporate ERP.

ORG 4.1.17 The Operator *should* have procedures under the corporate ERP that ensure a central coordination and control of all communications with external entities. **(GM)**

Guidance

A vital aspect of an effective ERP is ensuring a controlled and consistent message to external entities, especially the news media. The ERP should designate an individual or group as the central point of control for all external communication. Additionally, authorization and responsibilities should be assigned to certain personnel within the organization to act as the point(s) of contact for communication with specified external entities.

ORG 4.1.18 The Operator *should* have resources immediately available under the corporate ERP that provide for, in the event of an emergency:

- i) The establishment of local emergency command centers at line stations or remote locations;
- ii) A telephone enquiry center capable of handling the potential volume of calls expected with emergency events;
- iii) Dedicated equipment and material necessary for successful execution of the corporate ERP;
- iv) The dispatch on short notice of humanitarian teams to appropriate location(s) to attend to individuals in need of assistance.



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SECTION 2 – FLIGHT OPERATIONS (FLT)

Applicability

Section 2 addresses safety and security requirements for flight operations, and is applicable to an operator that utilizes two-pilot, multi-engine aircraft to conduct:

- Passenger flights with or without cabin crew;
- Cargo flights with or without the carriage of passengers or supernumeraries.

Individual provisions or sub-specifications within a provision that:

- Begin with a conditional phrase (“If the Operator...”) are applicable if the operator meets the condition(s) stated in the phrase.
- Do not begin with a conditional phrase are applicable unless determined otherwise by the Auditor.

Individual provisions:

- Identified by a <PA> in the reference number are applicable only to an operator that conducts passenger flights (including combi operations) *and* uses a cabin crew in the passenger cabin.
- Identified by an <AC> in the reference number are applicable only to an operator that conducts cargo flights utilizing cargo aircraft.
- Containing none of the above identifiers in the reference number are applicable to all operators except when applicability is limited by a conditional phrase.

Where an operator outsources flight operations functions to external service providers, an operator retains responsibility for the conduct of such functions and must demonstrate processes for monitoring applicable external service providers in accordance with FLT 1.11.2.

Some cabin safety specifications applicable to functions or equipment within the scope of flight operations are located in Section 5 (CAB) of this manual.

General Guidance

Definitions of technical terms used in this ISM Section 2, as well as the meaning of abbreviations and acronyms, are found in the IATA Reference Manual for Audit Programs (IRM).

1 Management and Control

1.1 Management System

FLT 1.1.1 The Operator shall have a management system for the flight operations organization that ensures control of flight operations and the management of safety and security outcomes. (GM) ◀

Guidance

Refer to the IRM for the definitions of *Operations*, *Operator* and *State*.

The specifications of this provision ensure the management system for the flight operations organization addresses the elements of operational safety and security specifically related to flight operations. Safety and security management at this operational level typically occurs within the greater context of the operator’s overall or corporate safety and/or security management plan. For example, the overall requirements for security of the flight deck would typically be specified in an operator’s security plan, but the actual operational management of flight deck security would

occur under the supervision of flight operations and flight operations personnel (e.g., development of procedures, training of personnel, following procedures).

Refer to Guidance associated with ORG 1.1.1 located in ISM Section 1.

FLT 1.1.2 The Operator shall have designated managers in the flight operations organization that, if required, are nominated officials acceptable to the Authority, and have the responsibility, and thus are accountable, for ensuring:

- i) The management and supervision of all flight operations activities;
- ii) The management of safety and security in flight operations;
- iii) Flight operations are conducted in accordance with conditions and restrictions of the Air Operator Certificate (AOC), and in compliance with applicable regulations and standards of the Operator. (GM) ◀

Guidance

Refer to the IRM for the definitions of *Accountability, Authority, Post Holder* and *Responsibility*.

The term “manager” is generic; the actual title associated with such positions will vary with each operator.

In some States the individual that fills certain key managerial positions within the flight operations organization must be nominated and then either accepted or approved by the Authority as specified in ORG 1.1.4. Managers in such positions might be referred to as post holders, directors or another title as specified by each State.

The specification in item ii) ensures the manager for the flight operations organization is accountable to senior management for the elements of operational safety and security specifically related to the conduct or supervision of flight operations. Safety and security management at this operational level typically occurs within the greater context of the operator’s overall or corporate safety and/or security management plan. For example, the overall requirements for security of the flight deck would typically be specified in an operator’s security plan, but the actual operational management of flight deck security would occur under the supervision of flight operations and flight operations personnel (i.e. development of procedures, training of personnel, following procedures). In this example, in order to conform to the specifications of item ii), the manager of the flight operations organization would be accountable to senior management for ensuring the day to day security of the flight deck.

Refer to ORG 1.1.4 located in ISM Section 1.

1.2 State Requirements

FLT 1.2.1 The Operator shall have a valid Air Operator Certificate (AOC) or equivalent document issued by the State that authorizes the Operator to conduct commercial air transport operations in accordance with specified conditions and limitations. The AOC and/or associated documents shall include:

- i) Operator identification (name and location);
- ii) Date of issue and period of validity;
- iii) Description of types of operations authorized;
- iv) Type(s) of aircraft authorized for use;
- v) Authorized areas of operation or routes;
- vi) Exemptions, deviations and waivers (listed by name);
- vii) Special authorizations, to include, as applicable:
 - a) Low visibility takeoff (LVTO);

- b) CAT II and/or III approaches;
- c) HGS (Head-up Guidance System) operations;
- d) GPS approaches;
- e) ETOPS;
- f) RVSM operations;
- g) MNPS operations;
- h) RNAV/RNP operations;
- i) Transport of dangerous goods;
- j) Electronic Flight Bag (EFB) operations (if approval for such operations is required by the Authority). (GM)

Guidance

Refer to the IRM for the definition of *Electronic Flight Bag (EFB)*, *ETOPS*, *RNAV* and *RVSM*.

The specifications of this provision require the conditions and limitations of any State-approved or State-accepted air transport operations, conducted by the operator, to be described in the AOC, AOC equivalents and/or associated documents.

The AOC is produced (by the State) in a manner consistent with local conditions for State approval or acceptance. This should not preclude the operator from describing authorized operations, including conditions and limitations for such operations, in associated documents and in a manner that is consistent with the specifications of this provision. Such documents typically include the OM or any operational document that describes the conditions and limitations of authorized operations.

The exemptions, deviations, waivers and special authorizations in specifications vi) and vii) may be described in State-approved or State-accepted documents other than the AOC.

Operators subject to laws or regulations of the State that prevent the issuance of an AOC consistent with the specifications of this provision and/or prohibit the description of authorized operations in a manner consistent with the specifications of this provision may demonstrate an equivalent method of ensuring the specifications of this provision are satisfied.

The period of validity is designated on the AOC or determined by reference to the dates of issuance and expiration.

FLT 1.2.2 (Intentionally open)

FLT 1.2.3 If required by the Authority, the Operator shall have a procedure to ensure the Operations Manual (OM), to include revisions, is submitted to the Authority for acceptance or approval. (GM)

Guidance

Refer to the IRM for the definitions of *Operations Manual*, *State Acceptance* and *State Approval*.

The specification of this provision refers to an operator's procedure for ensuring the OM is submitted to the Authority for approval or acceptance, as applicable.

1.3 Authorities and Responsibilities

FLT 1.3.1 The Operator shall ensure the flight operations management system defines the authorities and responsibilities of management and non-management personnel that perform functions relevant to the safety or security of aircraft operations in areas of the flight operations organization specified in FLT 1.3.2. The management system shall also specify:

- i) The levels of management with the authority to make decisions that affect the safety and/or security of operations;

- ii) Responsibilities for ensuring operations are conducted in accordance with applicable regulations and standards of the Operator. (GM) ◀

Guidance

The intent of this provision is to ensure operational personnel required to perform functions relevant to the safety of aircraft operations are identified, their authorities and responsibilities defined by the operator and those authorities and responsibilities communicated throughout the flight operations organization. Additionally, the provision addresses, as a minimum, the authorities and responsibilities of the relevant management and non-management flight operations personnel specified in FLT 1.3.2.

Refer to Guidance associated with ORG 1.3.1 located in ISM Section 1.

FLT 1.3.2 The Operator shall delegate authority and assign responsibility for the management and supervision of specific areas of the organization relevant to the flight operations management system, to include, as a minimum:

- i) Fleet operations;
- ii) Line operations;
- iii) Documentation control;
- iv) Flight crew training;
- v) Operations engineering;
- vi) Flight crew scheduling;
- vii) Accident prevention and flight safety;
- viii) Human resources;
- ix) Quality assurance;
- x) Security. (GM)

Guidance

Refer to the IRM for the definition of *Flight Crew* and *Operations Engineering*.

The specification in:

- Item i) refers to the management of policies, rules, procedures and instructions governing specific aircraft.
- Item ii) refers to the management of policies, rules, procedures and instructions governing flight crew.
- Item vii) could also be referred to as the flight safety program.
- Item viii) refers to the provision of Human Resources including management staff, support staff, administrative staff and flight crew.

FLT 1.3.3 The Operator shall have a procedure for the delegation of duties within the flight operations management system that ensures managerial continuity is maintained when operational managers are absent from the workplace. (GM) ◀

Guidance

The operational managers subject to the specifications of this provision include, as a minimum, managerial personnel, as defined by the operator or Authority, required to ensure control and supervision of flight operations.

FLT 1.3.4 The Operator shall ensure a delegation of authority and assignment of responsibility within the flight operations management system for liaison with regulatory authorities, original equipment manufacturers and other operationally relevant external entities. (GM) ◀

Guidance

Refer to Guidance associated with ORG 1.3.3 located in ISM Section 1.

The specifications of this provision are intended to ensure ongoing compliance with regulations, organizational standards and other applicable rules and requirements.

FLT 1.3.5 (Intentionally open)

FLT 1.3.6 The Operator shall assign responsibility to the pilot-in-command (PIC) for:

- i) The safety of all crew members, passengers and/or cargo onboard the aircraft when the doors are closed;
- ii) The operation and safety of the aircraft from the moment the aircraft is ready to move for the purpose of taking off until the moment it finally comes to rest at the end of the flight and the engine(s) are shut down;
- iii) Ensuring checklists are complied with. (GM)

Guidance

The intent of this provision is to ensure that the specified responsibilities are assigned to the PIC and such assignment is evident in Operator policies or procedures.

Specifications in item i) and ii) may be satisfied by policies documented in, or referenced in, the OM that assign responsibilities to the PIC in a manner consistent with regulations of the State and the intent of the provision. Slight variations in the wording of policies are permissible if the periods of responsibility as specified in each item are addressed by the operator's policies.

For example, an operator could assign responsibility to the PIC for the safety of passengers from the time they board the aircraft until they deplane. Such policy would satisfy this provision because it exceeds the period of PIC responsibility as specified in this provision.

The specification in item iii) may be satisfied by any policy or combination of policies that assign the responsibility for compliance with standard operating procedures to the PIC.

FLT 1.3.7 The Operator shall ensure, for the duration of each flight, one pilot is designated to act as PIC. (GM)

Guidance

The specification of this provision is satisfied if one pilot is designated to act as PIC, regardless of crew configuration or en route crew changes.

The operator may choose to address the specification of this provision as part of a plan for succession of command in accordance with FLT 1.3.8.

FLT 1.3.8 The Operator shall ensure the duties and responsibilities of flight crew members, to include a plan for succession of command, are defined and described in the OM. (GM)

Guidance

Refer to the IRM for the definition of *Flight Crew Member*.

FLT 1.3.9 The Operator shall have a policy to address willful and deliberate violation of flight operations organizational policies and/or procedures by flight operations personnel. (GM)

Guidance

Refer to the IRM for the definition of *Controlled Document*.

Appropriate policy regarding procedure violations typically includes NAA intervention, committee for case review (operator, trade union or mixed) and/or equivalent types of action.

The specification of this provision is applicable to flight operations personnel and is not restricted only to flight crew.

The policy may be documented or referenced in the OM or reside in another controlled document that is available to the flight crew.

FLT 1.3.10 If the Operator transports supernumeraries in the passenger cabin or supernumerary compartment of an aircraft, the operator *should* have policies and procedures that:

- i) If applicable, define and describe duties or responsibilities assigned to such personnel that are related to safety;
- ii) Ensure supernumeraries do not impede flight crew members in the performance of their duties;
- iii) If a cabin crew is used, ensure supernumeraries do not impede cabin crew members in the performance of their duties. (GM)

Guidance

Refer to the IRM for the definitions *Cabin Crew*, *Cabin Crew Member*, *Supernumerary* and *Supernumerary Compartment*.

The intent of this provision is to ensure:

- Duties and responsibilities assigned to supernumeraries that might be related to safety are appropriately defined;
- Supernumeraries can assist, but will not interfere with, qualified crew members in the performance their duties.

1.4 Communication and Coordination

FLT 1.4.1 The Operator shall have a communication system that enables and ensures an effective exchange of information relevant to the conduct of flight operations throughout the flight operations management system and among operational personnel. (GM) ◀

Guidance

Refer to Guidance associated with ORG 1.4.1 located in ISM Section 1.

FLT 1.4.2 The Operator shall have a process to ensure issues that affect operational safety and security are coordinated among personnel with expertise in the appropriate areas within the flight operations organization and relevant areas outside of flight operations, to include, as appropriate:

- i) Accident prevention and flight safety;
- ii) Cabin operations;
- iii) Engineering and maintenance;
- iv) Operations engineering;
- v) Operational control/flight dispatch;
- vi) Human resources;
- vii) Ground handling, cargo operations and dangerous goods;
- viii) Manufacturers, (AFM/AOM, operational and safety communication);
- ix) Regulatory agencies or authorities. (GM)

Guidance

Refer to the IRM for the definitions of *Aircraft Operating Manual (AOM)* and *Approved Flight Manual*.

Some examples of issues that could affect operational safety and security include aircraft modifications, new equipment, new destinations/routes, or regulatory changes.

The specifications of this provision are satisfied if an operator can demonstrate that a process exists within the flight operations organization that ensures necessary internal and external coordination.

The coordination processes specified in this provision may occur during meetings or other means of liaison (e.g. email, memos, conference call).

The specification in item iv) refers to coordination with the following or other appropriate categories of personnel:

- The operations engineering manager or other person responsible for defining, producing, customizing and distributing aircraft performance data;
- The manager responsible for defining, producing, customizing and/or distributing route and airport instructions or information, NOTAMs and FMS databases, if applicable;
- The operations engineering manager or other person in charge of aircraft equipment specification.

The specification in item iv) typically includes coordination on the following operational safety issues:

- Fleet and cross-fleet standardization;
- Flight deck layout;
- Aircraft avionics, instrumentation, equipment and/or components in accordance with the provisions of FLT 4.3.1.

The specification in item vi) refers to coordination with respect to staffing necessary to meet operator requirements.

FLT 1.4.3 The Operator shall have a process to ensure the dissemination of safety-critical operational information to appropriate personnel within and external to the flight operations organization, to include:

- i) Airworthiness Directives (ADs);
- ii) Manufacturer bulletins;
- iii) Flight crew bulletins or directives;
- iv) NOTAMs. (GM)

Guidance

Refer to the IRM for the definitions of *Airworthiness Directive*, *Flight Crew Bulletin* and *NOTAM*.

The intent of this provision is to ensure a process is in place to disseminate safety critical information to personnel that require it.

1.5 Provision of Resources

FLT 1.5.1 The Operator shall have the necessary facilities, workspace, equipment and supporting services, as well as work environment, to satisfy flight operations safety and security requirements. (GM) ◀

Guidance

Conformity with FLT 1.5.1 does not require specifications to be *documented* by an operator.

The specifications of this provision refer to the infrastructure and resource requirements that would be necessary to deliver safe and secure flight operations, to include flight operations and support facilities, services and equipment.

Refer to Guidance associated with ORG 1.6.1 located in ISM Section 1.

The specifications of this provision do not apply to the aircraft interior.

FLT 1.5.2 The Operator shall ensure management and non-management positions within the flight operations organization that require the performance of functions relevant to the safety and security of aircraft operations are filled by personnel on the basis of knowledge, skills, training and experience appropriate for the position. (GM) ◀

Guidance

Refer to Guidance associated with ORG 1.6.2 located in ISM Section 1.

The operational positions subject to the specifications of this provision typically include:

- Management personnel required to ensure control and supervision of flight operations in accordance with FLT 1.1.1 as defined by the operator or Authority;
- Management personnel assigned the responsibility for the management and supervision of specific areas of the organization relevant to flight operations in accordance with FLT 1.3.2.

Flight crew member knowledge, skill and experience requirements are in accordance with FLT 1.5.3, 1.5.4, and 1.5.5.

Flight crew member training requirements are in accordance with the applicable provisions contained in Subsection 2, Training and Qualification.

FLT 1.5.3 The Operator shall have a process to ensure candidates, prior to being employed as flight crew members, are screened for the purpose of determining if they possess the requisite certifications, skills, competencies and other attributes required by the Operator and/or State. Such process, as a minimum, shall include procedures for reviewing and/or assessing:

- i) Technical competencies and skills;
- ii) Aviation experience;
- iii) Credentials and licenses;
- iv) Interpersonal skills;
- v) Medical fitness;
- vi) Security background;
- vii) Common language(s) fluency. (GM)

Guidance

The specification in:

- Item i) refers to technical competencies and skills that will vary with the requirements of the position in which the flight crew member will be employed. For example, an ab initio pilot will not necessarily have flying skills but will possess other skills and/or attributes necessary to succeed in training.
- Item iii) includes verification of authenticity of licenses.
- Item iv) could be assessed by a flight operations management interview, Human Resource interview and/or the conduct of a psychological analysis.
- Item vi) is required unless such check is performed or prohibited by the State.
- Item vii) includes aviation English language fluency (where required for Air Traffic Control (ATC) communications) and sufficient fluency in the designated common language(s) necessary for ensuring effective communication (see FLT 3.1.1).

FLT 1.5.4 The Operator shall have a process for screening candidates for the position of PIC, to include, if applicable, ensuring a prerequisite minimum level of line experience that is acceptable to the Authority. (GM)

Guidance

The specifications of this provision refer to a screening process for direct hire or upgrade to PIC. Such screening occurs prior to a pilot being assigned duties as PIC and typically includes:

- Training records review;
- Management recommendations and/or review board;
- Training department recommendations and/or review board;
- Verification of minimum experience acceptable to the Authority;
- Any other screening requirements in accordance with the needs of the operator or requirements of the Authority.

FLT 1.5.5 The Operator shall have published criteria for the selection of instructors, evaluators and line check airmen, to include a minimum experience level in line operations that is acceptable to the Operator and/or the State.

FLT 1.5.6 The Operator *should* have a selection process for instructors, evaluators and line check airmen that includes:

- i) A training records review;
- ii) Recommendations from flight operations management and/or the Training Department.

FLT 1.5.7 The Operator *should* have a procedure for screening or testing prospective flight crew members for psychoactive substances, unless such screening or testing is performed or prohibited by the State.

FLT 1.5.8 The Operator shall have a policy that addresses the use of psychoactive substances by flight crew crewmembers, which, as a minimum:

- i) Prohibits the exercise of duties while under the influence of psychoactive substances;
- ii) Prohibits the problematic use of psychoactive substances;
- iii) Requires that all personnel who are identified as engaging in any kind of problematic use of psychoactive substances are removed from safety-critical functions;
- iv) Conforms to the requirements of the Authority. (GM)

Guidance

Refer to the IRM for the definitions of *Biochemical Testing*, *Psychoactive Substance* and *Problematic Use of Substances*.

Operators subject to laws or regulations of the State that preclude the publication of a psychoactive substance prohibition policy as specified in this provision may demonstrate an equivalent method of ensuring that personnel engaging in any kind of problematic use of psychoactive substance abuse do not exercise their duties and are removed from safety-critical functions.

Re-instatement to safety-critical duties could be possible after cessation of the problematic use and upon determination that continued performance is unlikely to jeopardize safety.

Some of the specifications of this provision may be addressed through implementation of a scheduling policy in accordance with FLT 3.4.2.

Examples of other subjects that might be addressed in a comprehensive and proactive policy include:

- Education regarding the use of psychoactive substances;
- Identification, treatment and rehabilitation;
- Employment consequences of problematic use of psychoactive substances;

- Biochemical testing;
- Requirements of ICAO and the Authority. (GM)

Additional guidance may be found in the *ICAO Manual on Prevention of Problematic use of Substances in the Aviation Workplace* (Doc 9654-AN/945).

1.6 Documentation System

FLT 1.6.1 The Operator shall have a system for the management and control of flight operations documentation and/or data used directly in the conduct or support of operations, to include processes for:

- i) Identifying the version of operational documents;
- ii) Distribution that ensures availability of the current version of flight operations documentation:
 - a) To appropriate operations personnel and flight crew.
 - b) If the operator outsources flight operations functions, to external service providers.
- iii) Review and revision as necessary to maintain the currency of information contained in documents;
- iv) Document retention that permits easy reference and accessibility;
- v) Identification and control of obsolete and/or reproduced documents;
- vi) Retention and dissemination of documentation and/or data received from external sources, to include manuals, documents and/or data from regulatory authorities and original equipment manufacturers. (GM) ◀

Guidance

Refer to the IRM for the definition of *Master Minimum Equipment List (MMEL)* and *Minimum Equipment List (MEL)*.

Refer to Guidance associated with ORG 2.1.1 located in ISM Section 1.

Internal operational documents are subject to management and control.

External documents that are customized and redistributed for use by an operator are subject to management and control. One such example is the MMEL produced by an aircraft manufacturer and subsequently customized by the operator and distributed to operational personnel as the MEL.

Refer to FLT 1.6.2 and FLT 1.6.3 for descriptions of the documents subject to management and/or control.

This provision refers to any organized system for documentation retention that contains current manuals, regulatory publications and other essential documents associated with flight operations.

The specifications in item vi):

- Are managed by the operator and controlled by the issuing entity.
- Include applicable regulations and associated documents, original manufacturer's manuals and documents and/or data produced externally for the operator.
- Typically include dangerous goods documents, route and airports charts, FMS databases, GPWS terrain and obstacle databases, airport analysis data, weight/mass and balance data and performance data.

FLT 1.6.2 The Operator shall ensure the system for the management and control of flight operations documentation as specified in FLT 1.6.1 addresses, as a minimum:

- i) The OM;
- ii) Other documents referenced in the OM that contain information and/or guidance relevant to the flight crew;
- iii) The onboard library. (GM)

Guidance

Refer to the IRM for the definition of *Onboard Library*.

Internal documents are subject to management and control.

Required onboard manuals and documents may be carried onboard by the flight crew. Also, the maintenance of the manuals and documents carried onboard by the flight crew may be delegated to the flight crew.

FLT 1.6.3 The Operator shall ensure the system for the management and control of flight operations documentation as specified in FLT 1.6.1 addresses documents from external sources, to include, as a minimum:

- i) As applicable, regulations of the State and of the other states or authorities relevant to operations;
- ii) As applicable, ICAO International Standards and Recommended Practices;
- iii) Airworthiness Directives;
- iv) As applicable, Aeronautical Information Publications (AIP) and NOTAMS;
- v) Manufacturer's Approved Flight Manual (AFM), including performance data, weight/mass and balance data/manual, checklists and MMEL/CDL;
- vi) As applicable, other manufacturer's operational communications. (GM)

Guidance

Refer to the IRM for the definitions of *Aeronautical Information Publication (AIP)*, *Aircraft Operating Manual (AOM)*, *Approved Flight Manual (AFM)*, *Configuration Deviation List (CDL)*, *Master Minimum Equipment List (MMEL)* and *Minimum Equipment List (MEL)*.

External documents are managed by the operator in accordance with specifications vi) and vii) of FLT 1.6.1 and controlled by the issuing entity.

The specification in items i) and ii) refer to applicable regulations imposed on the operator by other states or authorities (e.g., FAR 129). Applicable authorities include those authorities that have jurisdiction over international operations conducted by an operator over the high seas or the territory of a state that is other than the State of the Operator.

The specification for the manufacturer's AFM in item v) may be replaced by an Aircraft Operating Manual (AOM) customized by the manufacturer for the specific use in flight operations by an operator. In such case, the MMEL may also be replaced by an MEL.

The specification in item vi) refers to bulletins or directives distributed by the manufacturer for the purposes of amending aircraft technical specifications and/or operating procedures.

FLT 1.6.4 The Operator shall ensure documentation used in the conduct or support of flight operations:

- i) Contains legible and accurate information;
- ii) Is written in language(s) understood by flight operations personnel;
- iii) Is presented in a format that meets the needs of flight operations personnel;
- iv) If required, is accepted or approved by the Authority. (GM) ◀

Guidance

The intent of this provision is for an operator to provide operational documentation in a form that is acceptable to the Authority and useable by all relevant personnel.

Documentation used in the support of flight operations may:

- Exist in electronic form;
- Be issued in more than one language.

FLT 1.6.5 If the Operator utilizes an electronic system for the management and control of any documentation and/or data used directly in the conduct of flight operations, the Operator shall ensure the system provides for a scheduled generation of back-up files for such documentation and/or data. (GM) ◀

Guidance

Refer to Guidance associated with ORG 2.1.2 located in ISM Section 1.

FLT 1.6.6 The Operator shall ensure documents that comprise the onboard library, as specified in **Table 2.1**, are carried onboard the aircraft for each flight and located in a manner that provides for access by the flight crew. (GM)

Guidance

Access to performance calculations via telecom systems (e.g., ACARS) is acceptable in lieu of onboard documentation, if completed with appropriate back-up procedures.

FLT 1.6.7 (Intentionally open)

FLT 1.6.8 <AC> If applicable, the Operator *should* ensure the parts of the Operations Manual that address ground handling are onboard the aircraft. (GM)

Guidance

The intent of this provision is for an operator to have the specified portions of the OM onboard the aircraft if such documentation would be required for flight crew members or other personnel (flight or ground) to accomplish their assigned duties. As such, the applicability of the specification is determined by requirements of the operator or the State.

1.7 Operations Manual

FLT 1.7.1 The Operator shall have an Operations Manual (OM) for the use of personnel in the flight operations organization, which may be issued in separate parts, and which contains the policies, procedures, checklists and other guidance or information necessary for compliance with applicable regulations, laws, rules and Operator standards. As a minimum, the OM shall define the content of the onboard library and be in accordance with specifications contained in FLT 1.6.4 and **Table 2.2**. (GM)

Guidance

Guidance and procedures in the OM enable the flight crew to comply with the conditions and limitations specified in the AOC.

FLT 1.7.2 The Operator shall ensure information in the OM pertaining to flight crew duties and responsibilities is published in the designated common language(s), as specified in FLT 3.1.1. (GM)

Guidance

The intent of this provision is that the OM is published in a common language designated by the operator, which ensures all flight crew members are able to understand information that pertains to their duties and responsibilities. Additionally, if the OM is published in more than one designated language, to ensure there is harmonization between language versions of the OM

pertaining to flight crew duties and responsibilities, which eliminate the possibility of differences in understanding or interpretation.

FLT 1.7.3 (Intentionally open)

FLT 1.7.4 The Operator shall have a process to develop and establish procedures and checklists for use by the flight crew. Such process shall ensure:

- i) Human factors principles are observed in the design of the OM, checklists and associated procedures;
- ii) The specific parts of the OM relevant to flight crew are clearly identified and defined;
- iii) Any differences from procedures and checklists provided by the manufacturer(s) are based on operational considerations. (GM)

Guidance

The intent of this provision is to ensure procedures and checklists are developed in a manner that ensures they are useable, identifiable and consistent with manufacturer specifications. Any deviations from manufacturer procedures or checklists are typically based on operational concerns identified by the operator.

Human factors principles in document design and checklist usage typically address the following:

- Preparation of documentation in a useable format for information presentation, at the appropriate reading level and with the required degree of technical sophistication and clarity.
- Improving user performance through the use of effective and consistent labels, symbols, colors, terms, acronyms, abbreviations, formats and data fields.
- Ensuring the availability and usability of information to the user for specific tasks, when needed, and in a form that is directly usable.
- Designing operational procedures for simplicity, consistency and ease of use.
- Enabling operators to perceive and understand elements of the current situation and project them to future operational situations.
- Minimizing the need for special or unique operator skills, abilities, tools or characteristics.
- Assessing the net demands or impacts upon the physical, cognitive and decision-making resources of the operator, using objective and subjective performance measures.

The specification in item ii) ensures the relevant sections of the OM are clearly identified as the OM can, in some instances, include sections published for flight operations personnel other than flight crew. As such, all OM sections need not be provided to the flight crew (e.g., training syllabi are usually restricted to training/checking personnel).

Refer to FLT 1.6.1 for specifications applicable to all flight operations documentation, including the OM.

FLT 1.7.5 (Intentionally open)

FLT 1.7.6 The Operator shall ensure documents that contain policies, procedures, instructions, guidance, and/or information relevant to flight crew functions and responsibilities are published or referenced in the OM. (GM)

Guidance

The intent of this provision is to ensure the flight crew will find all information necessary to perform their functions within the OM, or within another document referenced in the OM, which is identified as a source of operational information approved or accepted for the purpose by the operator or the State.

FLT 1.7.7 The Operator shall have a description of the Operational Flight Plan (OFP) or equivalent document in the OM, which includes:

- i) An outline of the OFP content;
- ii) Guidance for its use by flight crews. (GM)

Guidance

Items readily available in other documentation, obtained from another acceptable source or irrelevant to the type of operation, may be omitted from the OFP.

Refer to DSP 1.7.2 contained in ISM Section 3 for an outline of the OFP content.

1.8 Records System

FLT 1.8.1 The Operator shall have a system for the management and control of flight operations records to ensure the content and retention of such records is in accordance with requirements of the Authority, as applicable, and to ensure operational records are subjected to standardized processes for:

- i) Identification;
- ii) Legibility;
- iii) Maintenance;
- iv) Retention and retrieval;
- v) Protection and security;
- vi) Disposal, deletion (electronic records) and archiving. (GM) ◀

Guidance

Refer to guidance associated with ORG 2.2.1 located in ISM Section 1.

FLT 1.8.2 The Operator shall ensure the system for the management and control of flight operations records as specified in FLT 1.8.1 includes retention, for a period of time determined by the Operator or the Authority, of records that document:

- i) The fulfillment of flight crew qualification requirements, as specified in **Table 2.3**;
- ii) Successful and unsuccessful flight crew evaluations, as specified in FLT 2.1.28. (GM)

Guidance

The intent of this provision is for an operator, as a minimum, to record completion of the flight crew qualification activities specified in i) and ii), and to retain the specified records for a period of time acceptable to the Authority.

FLT 1.8.3 If the Operator utilizes an electronic system for the management and control of flight operations records, the Operator shall ensure the system provides for a scheduled generation of back-up record files. (GM) ◀

Guidance

Refer to Guidance associated with ORG 2.2.2 located in ISM Section 1.

1.9 (Intentionally open)

1.10 Quality Assurance Program

FLT 1.10.1 The Operator shall have a quality assurance program that provides for the auditing and evaluation of the flight operations management system and operational functions at planned intervals to ensure the organization is:

- i) Complying with applicable regulations and standards of the Operator;

- ii) Satisfying stated operational needs;
- iii) Identifying areas requiring improvement;
- iv) Identifying hazards to operations. [SMS] (GM) ◀

Guidance

Refer to the IRM for the definition of *Quality Assurance*.

Refer to Guidance associated with ORG 3.4.1 located in ISM Section 1 for typical audit program requirements.

The specifications of this provision would typically apply to periodic audits of the training organization and program, whether training is conducted by the operator or outsourced to an external service provider.

Audits would normally be conducted at intervals that meet the requirements of the operator and/or the Authority.

FLT 1.10.2 The Operator shall have an audit planning process and sufficient resources to ensure audits of flight operations functions are:

- i) Scheduled at intervals that meet management system requirements;
- ii) Completed within a specified time period. (GM) ◀

Guidance

Refer to Guidance associated with ORG 3.4.10 located in ISM Section 1.

Intervals of surveillance activities typically vary, depending on the operator.

Previous outcomes would typically be considered by the operator when determining audit intervals.

FLT 1.10.3 The Operator shall have a process to ensure significant issues arising from audits of flight operations functions are subject to management review in accordance with ORG 1.5.1 and, as applicable, ORG 1.5.2. [SMS] (GM) ◀

Guidance

Refer to ORG 1.5.1, 1.5.2, 3.4.4 and associated Guidance located in ISM Section 1.

Significant issues are typically defined by the operator, but are regarded as those issues that could impact the safety, security and/or quality of flight operations.

FLT 1.10.4 The Operator shall have a process for addressing findings that result from audits of flight operations functions, which ensures:

- i) Identification of root cause(s);
- ii) Development of corrective action as appropriate to address the finding(s);
- iii) Implementation of corrective action in appropriate operational areas;
- iv) Evaluation of corrective action to determine effectiveness. ◀

1.11 Outsourcing and Product Quality Control

FLT 1.11.1 If the Operator has external service providers conduct outsourced flight operations functions, the Operator shall have a process to ensure a contract or agreement is executed with such external service providers. Contract(s) or agreement(s) shall identify measurable specifications that can be monitored by the Operator to ensure requirements that affect the safety or security of flight operations are being fulfilled by the service provider. (GM) ◀

Guidance

Refer to the IRM for the definition of *Outsourcing*.

Refer to Guidance associated with ORG 3.5.1 located in ISM Section 1.

This provision only addresses flight operations functions that are outsourced to external service providers. An example of an operational function relevant to flight operations that could be conducted by external organizations is flight crew training.

FLT 1.11.2 If the Operator has external service providers conduct outsourced flight operations functions, the Operator shall have a process to monitor such external service providers to ensure requirements that affect the safety or security of flight operations are being fulfilled. (GM) ◀

Guidance

Refer to Guidance associated with ORG 3.5.2 located in ISM Section 1.

The intent of this provision is to ensure operators that outsource flight operations function(s) to external service providers as specified in FLT 1.11.1 have processes in place to monitor such providers in accordance with the specifications of this provision.

An example of an operational function relevant to flight operations that could be conducted by external organizations is flight crew training.

Examples of outsourced security functions related to flight operations include aircraft/flight deck security sweeps and the transmission of threat information to operators or aircraft.

Auditing is typically a preferred process for the monitoring and control of external organizations.

FLT 1.11.3 The Operator *should* have a process to ensure data or products purchased or otherwise acquired from an external vendor or supplier (other than electronic navigation data products, as specified in FLT 1.11.4A), meet the product technical requirements specified by Operator prior to being used in the conduct of operations. (GM) ◀

Guidance

Refer to guidance associated with ORG 3.6.1 located in ISM Section 1.

The specifications of this provision address data or products that directly affect aircraft, flight deck, or cabin operational safety. Such data or products typically include GPWS terrain and obstacle databases, airport analysis data, weight/mass and balance data and performance data.

The intent of the monitoring and control specifications of this provision pertaining to data is to ensure operational data acquired from external suppliers and used for the support of flight operations are current, accurate and complete.

Electronic navigation data product integrity is addressed in FLT 1.11.4.

FLT 1.11.4A If the Operator utilizes aircraft with electronic navigation data capabilities, the Operator shall have processes, approved or accepted by the State, if required, which ensure electronic navigation data products acquired from suppliers, prior to being used as a means for navigation in operations:

- i) Are assessed for a level of data integrity commensurate with the intended application;
- ii) Are compatible with the intended function of equipment in which it is installed;
- iii) Are distributed in a manner to allow insertion of current and unaltered electronic navigation data into all aircraft that require it. (GM)

Guidance

Refer to the IRM for the definition of *Navigation Data Integrity*.

The responsibility of ensuring that electronic navigation data is assessed for integrity and is compatible with its intended application rests with the operator.

Navigation database integrity can be assured by obtaining data from a supplier accredited in accordance with approved or accepted standards of data integrity and quality. Such standards include:

- RTCA/DO-200A, Standards for Processing Aeronautical Data;
- RTCA/DO-201A, Standards for Aeronautical Information (area navigation and RNP Operations);
- Advisory Circular (AC) 20-153, Acceptance of Data Processes and Associated Navigation Databases in the United States;
- Any other State-approved or State-accepted standards of data integrity and quality that assure navigation database integrity.

The specifications in items i) and ii) may be satisfied by the operator, in accordance with State-approved or State-accepted methods for assuring data integrity and compatibility, such as:

- Obtaining a letter of acceptance from an applicable authority stating the data supplier conforms to a recognized standard for data integrity and compatibility that provides an assurance level of navigation data integrity and quality sufficient to support the intended application **or**
- The existence of operator and flight crew validation processes to determine navigation data compatibility and accuracy that provide an assurance level of navigation data integrity and quality sufficient to support the intended application

Letters of acceptance are approved by the applicable authority (the state where data is sourced or supplied) *and* approved or accepted by the State (state in which the data is applied). For example, the FAA, via a letter of acceptance, attests to the integrity of data from a U.S supplier. The State would subsequently approve or accept the FAA letter as the operator's means to assure data integrity.

The specification in item iii) refers to processes that ensure timely insertion of data and mitigate the introduction of aeronautical information errors related to the content of navigation databases. The physical insertion of navigation data into applicable aircraft is addressed in ISM Section 4 (MNT), Subsection 2, Maintenance Control.

Monitoring and control of electronic navigation data products acquired from suppliers would also be in accordance with FLT 1.11.3.

FLT 1.11.4B If the Operator utilizes aircraft equipped with a GPWS with a Forward-looking Terrain Avoidance Function as specified in FLT 4.3.25 and/or FLT 4.3.27, the Operator *should* ensure terrain and, if applicable, obstacle data acquired from an external vendor or supplier is distributed in a manner to allow the timely insertion of current and unaltered data into all aircraft for which it is required. (GM)

Guidance

Refer to the IRM for the definition of *GPWS with a Forward-looking Terrain Avoidance (FLTA) Function*.

The intent of this provision is to ensure operators develop the means to routinely update GPWS terrain and, if applicable, obstacle databases, for the purposes of reducing false warnings and ensuring actual hazards are properly identified.

The specifications of this provision refer to:

- Terrain database(s) for all areas of potential operations and surrounding airports of intended use;
- If an obstacle database is commercially available and obstacle detection/display functionality is installed, obstacle databases for all areas of potential operations.

FLT 1.11.5 If the Operator has external service providers conduct outsourced flight operations functions, the Operator *should* include auditing as a process for the monitoring of external service providers in accordance with FLT 1.11.2. (GM) ◀

Guidance

Monitoring and control of external organizations typically include random samplings, product audits, supplier audits, or other similar methods.

1.12 Safety Management

Risk Management

FLT 1.12.1 The Operator *should* have processes implemented in the flight operations organization that include a combination of reactive and proactive methods for safety data collection and analysis to identify hazards that present existing or potential risks to aircraft operations. [SMS] (GM) ◀

Guidance

Refer to the IRM for the definitions of *Hazard (Aircraft Operations)* and *Safety Risk*.

Hazard identification is an element of the Safety Risk Management component of the SMS framework.

Refer to Guidance associated with ORG 3.1.1 located in ISM Section 1.

FLT 1.12.2 The Operator *should* have a safety risk assessment and mitigation program implemented in the flight operations organization that specifies processes to ensure:

- i) Hazards are analyzed to determine the existing and potential safety risks to aircraft operations;
- ii) Safety risks are assessed to determine the requirement for risk control action(s);
- iii) When required, risk mitigation actions are developed and implemented in flight operations. [SMS] (GM) ◀

Guidance

Risk assessment and mitigation is an element of the Safety Risk Management component of the SMS framework.

Refer to Guidance associated with ORG 3.1.2 located in ISM Section 1.

Operational Reporting

FLT 1.12.3 The Operator shall have an operational reporting system implemented in the flight operations organization that:

- i) Encourages and facilitates flight operations personnel to submit reports that identify safety hazards, expose safety deficiencies and raise safety concerns;
- ii) Ensures mandatory reporting in accordance with applicable regulations;
- iii) Includes analysis and flight operations management action as necessary to address safety issues identified through the reporting system. [SMS] (GM) ◀

Guidance

Operational reporting is considered a *proactive* hazard identification activity in an SMS.

Refer to Guidance associated with ORG 3.1.3 located in ISM Section 1.

FLT 1.12.4 The Operator *should* have a confidential safety reporting system implemented within the flight operations organization in a manner that encourages and facilitates the reporting of events, hazards and/or concerns resulting from or associated with human performance in operations. [SMS] (GM) ◀

Guidance

A confidential safety reporting system is considered a *proactive* hazard identification activity in an SMS.

Refer to Guidance associated with ORG 3.1.4 located in ISM Section 1.

Safety Performance Monitoring and Management

FLT 1.12.5 The Operator *should* have processes implemented in the flight operations organization for setting performance measures as a means to monitor the safety performance of the organization and to validate the effectiveness of risk controls. [SMS] (GM) ◀

Guidance

Refer to the IRM for the definition of *Safety Assurance*.

Setting measurable safety objectives is included in the safety performance monitoring and measurement element of the Safety Assurance component of the SMS framework.

By setting performance measures, an operator is able to track and compare its operational performance against a target (i.e. the performance objective, typically expressed as a rate or number reduction) over a period of time (e.g. one year). Achievement of the target (or objective) would represent an improvement in the operational performance. The use of performance measures is an effective method to determine if desired safety outcomes are being achieved, and to focus attention on the performance of the organization in managing operational risks and maintaining compliance with relevant regulatory requirements.

Performance measures in flight operations might address, for example, takeoff or landing tail strikes, unsatisfactory line or training evaluations, unstabilized approaches, runway incursions, or any other measurable occurrences that are managed by the SMS.

Refer to Guidance associated with ORG 3.2.1 located in ISM Section 1.

2 Training and Qualification

2.1 Training and Evaluation Program

General

FLT 2.1.1A The Operator shall have a training and evaluation program, approved or accepted by the Authority, that consists of ground and flight training and, when applicable, evaluations to ensure flight crew members are competent to perform assigned duties. The program shall address traditional and, if applicable, advanced (or alternative) training and qualification, and ensure training and evaluation is conducted for each type of aircraft in the fleet. Such program shall also, as a minimum, address:

- i) Initial qualification;
- ii) Continuing qualification;
- iii) Re-qualification;
- iv) As applicable, aircraft transition or conversion;
- v) Upgrade to PIC;
- vi) As applicable, other specialized training requirements;
- vii) As applicable, each traditional training program requirement that is replaced by a requirement under an Advanced Qualification Program (AQP) or Alternative Training and Qualification Program (ATQP) as approved or accepted by the Authority. (GM)

Guidance

Refer to the IRM for the definition of *Advanced Qualification Program (AQP)* and *Alternative Training and Qualification Program (ATQP)*.

The intent of this provision is to ensure an operator's training program contains the elements necessary to ensure flight crew members are continuously competent to perform assigned duties.

The initial qualification process provided to newly hired crew members includes company indoctrination and initial endorsement on company aircraft types. This presupposes that the newly hired crew member already holds a commercial flying license.

Initial endorsement training may not be required as part of initial qualification if a newly hired crew member already holds a type endorsement acceptable to both the State and the Operator. Company indoctrination training, however, is always considered a part of initial qualification.

Continuing qualification includes recurrent or refresher training and also includes any training necessary to meet recency-of-experience requirements.

Transition (conversion) training refers to an aircraft type qualification training and evaluation program for each type of aircraft in the fleet and is not required when an operator only utilizes one type of aircraft.

Specialized training could include training on a specific type of new equipment (e.g., ACAS) or training for specific operations to meet requirements of the Authority.

AQP/ ATQP incorporate the elements and specifications contained in **FLT 2.1.1B**, **Table 2.6** and **Table 2.7**.

Training could be outsourced, in which case services typically range from simple dry lease of a training device to delegation of all training to an external organization (e.g., Authorized Flight Training School).

FLT 2.1.1B If the Operator conducts training and evaluation in accordance with an Advanced Qualification Program (AQP) or Alternative Training and Qualification Program (ATQP), such program shall be approved or accepted by the Authority and incorporate all of the elements and specifications contained in **Table 2.6** and **Table 2.7**. (GM)

Guidance

An operator, in accordance with the requirements of the Authority, typically uses technical guidance for the development of an advanced (or alternative) training and qualification program. Such guidance might be derived from one or combination of the following source references, as applicable:

- Office of the Federal Register, (2 October 1990), Special Federal Aviation Regulation 58 - Advanced Qualification Program, Federal Register, Vol. 55, No. 91, Rules and Regulations (pp.40262-40278).
- FAA 14 CFR Part 121, Subpart Y.
- FAA Advisory Circular 120-54, Advanced Qualification Program.
- Advisory Circular 120-35B, (6 September 1990), Line Operational Simulations, Federal Aviation Administration, Washington D. C.: U. S. Department of Transportation.
- FAA Advisory Circular 120-51, (3 January 1995), Crew Resource Management Training, Federal Aviation Administration, Washington D. C.: U. S. Department of Transportation.
- Commission Regulation (EC) No 859/2008 of 20 August 2008 OPS 1.978 Alternative Training and Qualification Program (ATQP) and Appendix 1 to OPS 1.978.
- Mangold, S., and Neumeister, D. (1995). CRM in the model AQP: A preview. In R. S. Jensen and L.A. Rakovan (Eds.), Proceedings of the Eighth International Symposium on Aviation Psychology (pp 556-561), Columbus; the Ohio State University.
- Any equivalent reference document approved or accepted by the Authority for the development of an advanced training and qualification program designed to conform to the specifications of **Table 2.6 and 2.7**.

FLT 2.1.2 The Operator shall ensure objectivity in the training and evaluation program is maintained by assuring:

- i) Evaluations administered in conjunction with simulator, aircraft and/or line training are conducted by different organizations or individuals than those that conducted the training;
- ii) Instructors, evaluators and line check airmen are permitted to perform assigned activities without inappropriate interference from management and/or external organizations. (GM)

Guidance

The specification in item i) of this provision is satisfied if:

- The organizational structure of the operator's training program ensures pilots are trained and evaluated by separate and distinct departments or individuals within the training organization, **or**
- The operator's training policies ensure individuals, when conducting simulator, aircraft and/or line training for the following courses, do not examine those pilots to whom they have given flight instruction for a license or rating, except with the approval or acceptance of the State:
 - Type qualification;
 - Transition (conversion);
 - Upgrade to PIC;
 - Re-qualification.

The specifications in item i) of this provision allow the same individual to instruct and examine pilots in the operator's continuing qualification or other specialized training courses.

The specifications in item i) do not apply to ground training and evaluation courses.

Other exceptions to the above requirements may be appropriate under extenuating circumstances, such as the introduction of new aircraft types or for operators of very small fleets.

FLT 2.1.3 The Operator shall ensure flight crew members receive training that supports the introduction of:

- i) New policies, rules, instructions and procedures;
- ii) New aircraft types, systems and fleet modifications/upgrades. (GM)

Guidance

This provision is satisfied if a process exists for the introduction into the training program of each specification that results from the coordination processes required by FLT 1.4.2. Such coordination processes occur:

- Within the training program;
- Between those responsible for the training program and the relevant areas of the organization in accordance with FLT 1.4.2.

FLT 2.1.4 If the Operator utilizes distance learning and/or distance evaluation in the flight crew training and qualification program, the Operator shall ensure such training and/or evaluation is monitored in accordance with FLT 2.1.28 and, if required, is approved or accepted by the State. (GM)

Guidance

Refer to the IRM for the definition of *Distance Learning*.

Distance learning refers to flight crew training or evaluation that is not conducted in a classroom or face-to-face with an instructor or evaluator, but rather is conducted through the use of distributed printed material or electronic media (e.g., Internet, compact disc, etc.).

FLT 2.1.5 – 2.1.9 (Intentionally open)

Training Manual

FLT 2.1.10 The Operator shall have a Training Manual for the use of flight operations personnel, which may be issued in separate parts, that contains the details of all relevant training programs, policies, procedures, requirements and other guidance or information necessary to administer the Operator's Training Program. The Training Manual shall be approved or accepted by the State and the content of the Training Manual shall, as a minimum, be in accordance with specifications in **Table 2.2**. (GM)

Guidance

The training manual applies to instructors, evaluators, line check airmen, flight crew members, training schedulers, simulator operations personnel, administrative support personnel and other applicable flight operations personnel.

FLT 2.1.11 The Operator shall ensure the Training Manual is:

- i) Managed and controlled in accordance with FLT 1.6.1;
- ii) Accessible to applicable flight operations personnel. (GM)

Guidance

The training manual may be split among several publications with the relevant parts made easily accessible to the appropriate personnel.

FLT 2.1.12 The Operator shall ensure the Training Manual contains standards for flight crew training and evaluation that have been approved or accepted by the State and include, as a minimum:

- i) Standardized procedures for training and the conduct of evaluations;
- ii) Standards that ensure piloting technique and the ability to execute normal and non-normal procedures are checked in a way that demonstrates each pilot's competence;
- iii) A requirement that simulated aircraft, weather and environmental conditions are standardized and appropriate for the training/evaluation being administered;
- iv) If the Operator conducts training flights, a definition of the conditions and/or maneuvers that can be safely simulated in the aircraft, as well as the minimum weather and environmental conditions required to ensure the training/evaluation being administered can be safely and effectively conducted;
- v) Limits for the number of times maneuvers may be repeated and the evaluation still be considered acceptable;
- vi) Procedures for remedial training and subsequent evaluation of a flight crew unable to achieve or maintain required standards. (GM)

Guidance

Refer to the IRM for the definitions of *Maneuver Tolerances* and *Training Flights*.

The intent of this provision is to ensure that the standards for flight crew training and evaluation are published or referenced in the Training Manual.

The specifications in item ii) of this provision are satisfied by the application of tolerances to normal and non-normal maneuvers during training and evaluations for the following flight parameters:

- Heading
- Airspeed
- Height/altitude
- Course tracking

Operators that conduct Training Flights and cannot safely train/evaluate the specified non-normal procedures in an aircraft or in an appropriate flight training device in accordance with FLT 2.2.38 may demonstrate an alternative means of conforming to these specifications in accordance with FLT 2.2.41.

For training and/or evaluations conducted in the aircraft during line operations, maneuver tolerances include allowances for turbulence, aircraft characteristics and passenger comfort.

Remedial training and subsequent evaluation of flight crew unable to achieve or maintain required standards can be tailored to the needs of the individual concerned.

FLT 2.1.13 (Intentionally open)

FLT 2.1.14 The Operator shall ensure instructors, evaluators, line check airmen and flight crew members use documents for the conduct of training and evaluation that are authorized by the Operator for such use. (GM)

Guidance

The specification of this provision ensures unauthorized training materials (e.g., handouts, training aids) are not distributed to or used for the training or evaluation of flight crew members.

FLT 2.1.15 – 2.1.18 (Intentionally open)

Resources

FLT 2.1.19 The Operator shall ensure instructors, evaluators, line check airmen and flight crew members (whether employed or subcontracted), training facilities, devices, equipment and course materials (whether owned or subcontracted):

- i) As applicable, have the required certification(s) and approval or acceptance from the State;
- ii) As applicable, meet the required qualification and performance standards of the Operator or the State;
- iii) Are periodically evaluated to ensure compliance with required qualification and performance standards.

FLT 2.1.20 The Operator shall ensure instructors, evaluators, line check airmen and flight crew members, whether employed or subcontracted, are standardized for their assigned tasks.

FLT 2.1.21 The Operator shall have sufficient instructors, evaluators, line check airmen and support personnel to administer the training and evaluation programs in accordance with requirements of the Operator and/or the State, as applicable.

FLT 2.1.22 – 2.1.26 (Intentionally open)

Program Improvement

FLT 2.1.27 The Operator shall ensure formal and regular communication occurs between and among flight operations management, instructors, evaluators, line check airmen and flight crew members to achieve continual improvement of ground, simulator and aircraft training and line operations. (GM)

Guidance

The intent of this provision is for the operator to ensure a mandate exists, as well the means and opportunity, for the conduct of regular communications between and among the operational personnel for the purpose of achieving continual program improvement.

FLT 2.1.28 The Operator shall have processes for ensuring continual improvement of the flight crew training and evaluation program, to include, as a minimum, the monitoring, recording and evaluation of results of successful and unsuccessful flight crew evaluations. (GM)

Guidance

Flight crew operational non-compliances, training deficiencies and evaluation trends (simulator, aircraft and line operations) are typically used by the training organization for trend analysis and program improvement.

Grading scale criteria (e.g. numerical, letter grade) provides a means to accurately identify areas for improvement.

FLT 2.1.29 – 2.1.34 (Intentionally open)

Instructors, Evaluators, and Line Check Airmen

FLT 2.1.35 The Operator shall have an initial training program for instructors, evaluators and line check airmen, to include:

- i) An instructor course that addresses as a minimum:
 - a) The fundamentals of teaching and evaluation;
 - b) Lesson plan management;
 - c) Briefing and debriefing;
 - d) Human performance issues;

- e) Company policies and procedures;
 - f) Simulator serviceability and training in simulator operation;
 - g) Dangers associated with simulating system failures in flight;
 - h) As applicable, the simulated or actual weather and environmental conditions necessary to conduct each simulator or aircraft training/evaluation session to be administered.
- ii) A formal observation program that permits supervised practical instruction and observation of experienced instructors administering the course and syllabus lessons;
 - iii) A seat-specific (right or left seat, as applicable) qualification program for instructors, evaluators, line check airmen and any other pilots, so designated by management, who perform duties from either seat;
 - iv) If non-line qualified instructors are utilized, a jump seat observation program or equivalent for non-line qualified instructors to provide familiarity with current and type-related line operations. (GM)

Guidance

The specification in item iv) of this provision may be satisfied by an equivalent program that includes line-oriented simulator sessions and /or completion of the company recurrent training program administered to line pilots.

The specification in item i), sub-item g), is applicable to operators that conduct training flights.

The specification in item i), sub-item h), would require operators that conduct training flights to specify the actual conditions that will permit such training to be accomplished safely and effectively in accordance with FLT 2.1.12.

FLT 2.1.36 The Operator shall have a recurrent qualification program for instructors, evaluators, and line check airmen that, as a minimum, requires participation in:

- i) Standardization meetings as defined by the Operator or the State;
- ii) Training or evaluation sessions (simulator or aircraft) conducted while supervised by an individual approved by the Operator;
- iii) A State-approved or State-accepted minimum number of training events and/or evaluations per year; required participation in a supplementary re-qualification/recertification program if the minimum number of events are not completed;
- iv) A seat-specific (right or left seat, as applicable) recurrent program for instructors, evaluators, Line Check Airmen, who perform duties from either seat.
- v) If non-line qualified instructors are utilized, a jump seat observation program or equivalent approved or accepted by the State for non-line qualified instructors to provide familiarity with current and type-related line operations. (GM)

Guidance

The operator could have different recurrent qualification programs for line check airmen authorized to conduct line flying under supervision and those who conduct simulator and/or aircraft evaluations.

Instructors, evaluators and line check airmen typically attend a standardization meeting at least once a year. Minutes of standardization meetings are distributed to instructors, evaluators and line check airmen.

The observations required in conjunction with item ii) are typically conducted at least once a year for each instructor, evaluator and line check airman, unless a longer interval is approved or accepted by the Authority.

Simulator observations in conjunction with item ii) entail an assessment of the individual while carrying out the duties for which highest qualified (e.g., instructor or evaluator).

If airline security does not permit line observations, the specification in item v) of this provision may be satisfied by an equivalent program that includes line-oriented simulator sessions and /or completion of the company recurrent training program administered to line pilots.

FLT 2.1.37 – 2.1.44 (Intentionally open)

Facilities, Training Aids and Equipment

FLT 2.1.45 The Operator shall ensure training aids and equipment, to include mock-ups, flight deck procedure trainers and other devices and/or course materials used in the flight crew training and evaluation program, reasonably reflect the configuration of the fleet(s) for which the respective training is being conducted. (GM)

Guidance

Differences in equipment configuration may be acceptable, provided the differences are clearly identified in the training manual or other training program documents available to instructors, evaluators, line check airmen and flight crew members.

FLT 2.1.46 The Operator shall have published guidance for instructors and evaluators, approved or accepted by the State, if applicable, that specifies minimum serviceability levels of training devices and/or training aircraft to ensure serviceability does not adversely affect training, evaluation and/or safety, as applicable. (GM)

Guidance

Minimum serviceability guidance for training devices typically takes into account, among other things, simulator motion, visual systems, or instrumentation.

Minimum serviceability guidance for aircraft utilized for Training Flights would typically take into account MEL allowances that are permissible under passenger operations, but unsuitable for the conduct of the training/evaluation to be conducted.

The specification of this provision is satisfied if an operator provides guidance to instructors and evaluators when critical components of a training device are fully or partially inoperative. For example, simulator minimum serviceability requirements typically refer instructors or evaluators to published company guidance to determine if a certain type of training (such as LOFT/LOS) can be conducted with simulator components inoperative.

FLT 2.1.47 If the Operator has a zero flight time training (ZFTT) program, the Operator shall ensure such training program is approved or accepted by the State and:

- i) Is conducted using flight simulators representative of the aircraft flown by the Operator and qualified to Level C, D or an equivalent;
- ii) Specifies minimum pilot experience requirements for entry into each ZFTT qualification/training course;
- iii) Each ZFTT qualification/training course is customized as necessary to address pilot experience, flight crew position and simulator level;
- iv) A demonstration of competency is completed in a flight simulator conforming to the specifications in item i) under the supervision of an evaluator;
- v) A final demonstration of competency is completed in an aircraft during actual line operations under the supervision of an evaluator, instructor or current and qualified Pilot-in-Command (PIC) designated for the purpose by the Operator and/or State. (GM)

Guidance

Refer to the IRM for the definitions of *Zero Flight Time Training (ZFTT)*, *Instructor* and *Flight Simulator*. The latter definition includes descriptions of simulator qualification levels.

The intent of this provision is to define the elements of a ZFTT program, which may be used by an Operator in conjunction with other training programs to qualify flight crew members (e.g. ZFTT could be approved for a specific fleet type but not for all fleets).

The specification in item iv) refers to the demonstration of competencies that must be completed in a qualified simulator as designated for completion during simulator training in an operator's State-approved or State-accepted ZFTT qualification course.

The specification in item v) refers to the final demonstration of competencies that must be completed in an aircraft as designated for completion during actual line operations in an operator's State-approved or State-accepted ZFTT qualification course. Such final demonstration is typically tailored to account for competencies previously demonstrated as part of simulator training in accordance with item iv).

The combination of competencies demonstrated in a qualified simulator plus competencies demonstrated in the aircraft during actual line operations must encompass all of competencies, designated for demonstration in an operator's State-approved or -accepted ZFTT qualification course, as necessary for the release of a ZFTT candidate to unsupervised flying.

2.2 Training Elements

FLT 2.2.1 The Operator shall have a ground and flight training program, which is approved or accepted by the State, and which ensures flight crew members are adequately trained to perform their assigned duties.

FLT 2.2.2 – 2.2.6 (Intentionally open)

FLT 2.2.7 The Operator shall ensure flight crew members complete Operator familiarization training during initial ground training and prior to being assigned to duties in line operations. Such training shall ensure familiarity with:

- i) Duties and responsibilities;
- ii) Relevant state regulations;
- iii) Authorized operations;
- iv) Relevant sections of the OM. (GM)

Guidance

Training is applicable to all flight crew members.

Many operators refer to this training course as Basic Company Indoctrination.

FLT 2.2.8 The Operator shall ensure flight crew members complete practical training exercises:

- i) In the use of all emergency and safety equipment required to be onboard the aircraft, and such training shall be completed during initial ground training and subsequently during recurrent training once every calendar year or, if applicable, in accordance with the initial and continuing qualification schedule specified in the Operator's AQP/ATQP as approved or accepted by the Authority;
- ii) That address emergency evacuation and coordination among flight crew members and, as applicable, cabin crew members and/or supernumeraries, and such training shall be completed during initial ground training and subsequently during recurrent training once every three (3) calendar years or, if applicable, in accordance with the initial and continuing qualification schedule specified in the Operator's AQP/ATQP as approved or accepted by the Authority. (GM)

Guidance

Training is applicable to all flight crew members.

The modification of qualification intervals in accordance with an advanced (or alternative) qualification program requires conformance with FLT 2.1.1B.

FLT 2.2.9 <PA> If the Operator conducts passenger flights with cabin crew, the Operator *should* ensure flight crew members participate in joint training activities or exercises with cabin crew members for the purpose of enhancing onboard coordination and mutual understanding of the human factors involved in addressing emergency situations and security threats. Such training *should* be completed during initial ground training and subsequently during recurrent training once every three (3) calendar years or, if applicable, in accordance with the initial and continuing qualification schedule specified in the Operator's AQP/ATQP as approved or accepted by the Authority. (GM)

Guidance

The modification of qualification intervals in accordance with an advanced (or alternative) qualification program requires conformance with FLT 2.1.1B.

FLT 2.2.10 The Operator shall ensure flight crew members receive training in all aspects of aircraft performance during initial ground training. Such training shall include:

- i) Weight/mass and balance;
- ii) Takeoff, climb, cruise, approach and landing performance;
- iii) Obstacle clearance;
- iv) Fuel planning;
- v) Diversion planning;
- vi) Effect of inoperative or missing components (MEL/CDL);
- vii) If applicable, engine-out driftdown. (GM)

Guidance

Training is applicable to all flight crew members.

MEL/CDL or equivalent application might not apply to ferry flights or maintenance flights.

FLT 2.2.11 The Operator shall ensure flight crew members complete training and an evaluation in aircraft systems and limitations, to include a demonstration of competence in the operation of aircraft systems. Such training and evaluation shall be completed during initial ground training and subsequently during recurrent training once every three (3) calendar years or, if applicable, in accordance with the initial and continuing qualification schedule specified in the Operator's AQP/ATQP as approved or accepted by the Authority. (GM)

Guidance

The modification of qualification intervals in accordance with an advanced (or alternative) qualification program requires conformance with FLT 2.1.1B.

Training and evaluation is applicable to all flight crew members.

FLT 2.2.12 If the Operator transports dangerous goods, the Operator shall ensure flight crew members complete training and an evaluation in dangerous goods during initial ground training and subsequently once during recurrent training within the 24-month period from the previous training in dangerous goods or, if applicable, in accordance with the initial and continuing qualification schedule specified in the Operator's AQP/ATQP as approved or accepted by the Authority. Such training shall include:

- i) General philosophy;

- ii) Limitations;
- iii) List of dangerous goods;
- iv) Labelling and marking;
- v) Recognition of undeclared dangerous goods;
- vi) Storage and loading procedures;
- vii) Pilot's notification;
- viii) Provisions for passengers and crew;
- ix) Emergency procedures. (GM)

Guidance

Training and evaluation is applicable to all flight crew members.

Recurrent training in dangerous goods is typically completed within a validity period that expires 24 months from the previous training to ensure knowledge is current, unless a shorter period is defined by a competent authority. However, when such recurrent training is completed within the final 3 months of the 24-month validity period, the new validity period may extend from the date on which the recurrent training was completed until 24 months from the expiry date of the current validity period. If such recurrent training is completed *prior* to the final three months (or 90 days) of the validity period, the new validity period would extend 24 months from the date the recurrent training was completed.

The modification of qualification intervals in accordance with an advanced (or alternative) qualification program requires conformance with FLT 2.1.1B.

Guidance may be found in the IATA Dangerous Goods Regulations (DGR) 1.5, Table 1.5.A.

FLT 2.2.13 If the Operator does not transport dangerous goods, the Operator shall ensure flight crew members complete training and an evaluation in dangerous goods during initial ground training and subsequently once during recurrent training within the 24-month period from the previous training in dangerous goods or, if applicable, in accordance with the initial and continuing qualification schedule specified in the Operator's AQP/ATQP as approved or accepted by the Authority. Such training shall include:

- i) General philosophy;
- ii) Limitations;
- iii) Labelling and marking;
- iv) Recognition of undeclared dangerous goods;
- v) Provisions for passengers and crew;
- vi) Emergency procedures. (GM)

Guidance

Training and evaluation is applicable to all flight crew members.

Recurrent training in dangerous goods is typically completed within a validity period that expires 24 months from the previous training to ensure knowledge is current, unless a shorter period is defined by a competent authority. However, when such recurrent training is completed within the final 3 months of the 24-month validity period, the new validity period may extend from the date on which the recurrent training was completed until 24 months from the expiry date of the current validity period. If such recurrent training is completed *prior* to the final three months (or 90 days) of the validity period, the new validity period would extend 24 months from the date the recurrent training was completed.

The modification of qualification intervals in accordance with an advanced (or alternative) qualification program requires conformance with FLT 2.1.1B.

Guidance may be found in DGR 1.5, Table 1.5.B.

FLT 2.2.14 The Operator shall ensure flight crew members complete training and an evaluation in crew resource management (CRM), including Threat and Error Management, using facilitators that have been trained in human performance and human factors principles. Such training and evaluation shall be completed during initial ground training and subsequently during recurrent training once every three (3) calendar years or, if applicable, in accordance with the initial and continuing qualification schedule specified in the Operator's AQP/ATQP as approved or accepted by the Authority. (GM)

Guidance

Refer to the IRM for the definitions of *CRM*, *Facilitator*, *Human Performance*, *Human Factors Principles* and *Threat and Error Management*.

The modification of qualification intervals in accordance with an advanced (or alternative) qualification program requires conformance with FLT 2.1.1B.

CRM training is applicable to all flight crew members.

FLT 2.2.15 If the Operator utilizes FOO personnel and the Operator's method of Operational Control requires shared responsibility between an FOO and the PIC, the Operator *should* ensure flight crew members participate in joint resource management training activities with FOO personnel for the purpose of enhancing coordination and a mutual understanding of the human factors involved in joint operational control. Such training activities *should* occur **either**:

- i) During initial ground training and subsequently during recurrent training once every three (3) calendar years plus or minus one calendar month from the original qualification tri-annual anniversary date or base month, **or**
- ii) If applicable, in accordance with the initial and continuing qualification schedule specified in the Operator's AQP/ATQP as approved or accepted by the Authority. (GM)

Guidance

The modification of qualification intervals in accordance with an advanced (or alternative) qualification program requires conformance with FLT 2.1.1B.

FLT 2.2.16A The Operator shall ensure flight crew members complete training and an evaluation in subjects associated with adverse weather and/or environmental conditions during initial ground training and subsequently during recurrent training once every three (3) calendar years or, if applicable, in accordance with the initial and continuing qualification schedule specified in the Operator's AQP/ATQP as approved or accepted by the Authority. Such training and evaluation shall address, as applicable:

- i) De-/anti-icing policies and procedures;
- ii) Contaminated runway operations;
- iii) Thunderstorm avoidance;
- iv) Cold weather operations. (GM)

Guidance

The intent of this provision is to ensure flight crew members receive recurrent training and an evaluation in the subjects associated with the adverse weather or environmental conditions they may encounter in operations.

The modification of qualification intervals in accordance with an advanced (or alternative) qualification program requires conformance with FLT 2.1.1B.

Training and evaluation is applicable to all flight crew members.

FLT 2.2.16B If the Operator conducts operations near volcanic ash, the Operator shall ensure flight crew members complete training and an evaluation in such operations during initial ground training or, if applicable, in accordance with the initial and continuing qualification schedule specified in the Operator's AQP/ATQP as approved or accepted by the Authority. (GM)

Guidance

The intent of this provision is to ensure flight crew members receive training and an evaluation in the subjects associated with the adverse environmental conditions they might encounter in operations.

The modification of qualification intervals in accordance with an advanced (or alternative) qualification program requires conformance with FLT 2.1.1B.

Training and evaluation is applicable to all flight crew members.

FLT 2.2.17 The Operator shall ensure flight crew members complete training in procedures for aircraft upset recovery during initial ground training and subsequently during recurrent training once every three (3) calendar years or, if applicable, in accordance with the initial and continuing qualification schedule specified in the Operator's AQP/ATQP as approved or accepted by the Authority. (GM)

Guidance

The modification of qualification intervals in accordance with an advanced (or alternative) qualification program requires conformance with FLT 2.1.1B.

Training is applicable to all *pilot* crew members.

Aircraft upset recovery training typically includes:

- Factors leading to an upset situation;
- Upset situation identification;
- Recovery techniques;
- Emphasis on aerodynamic factors present during the upset and the recovery.

Acceptable means of ground training may include video presentation(s), verbal instruction and/or group discussion.

FLT 2.2.18 If the Operator engages in RVSM and/or RNP operations, the Operator shall ensure flight crew members complete training and an evaluation in RVSM/RNP procedures during initial ground training or, if applicable, in accordance with the initial and continuing qualification schedule specified in the Operator's AQP/ATQP as approved or accepted by the Authority. (GM)

Guidance

The modification of qualification intervals in accordance with an advanced (or alternative) qualification program requires conformance with FLT 2.1.1B.

Training and evaluation is applicable to all *pilot* crew members.

FLT 2.2.19 The Operator shall ensure flight crew members, including instructors and evaluators whose native language is not the same as the designated common language specified in FLT 3.1.1, complete an evaluation prior to being assigned to operational duties to demonstrate a level of proficiency in the designated common language that ensures such flight crew members are able to:

- i) Effectively communicate during the performance of operational duties;

- ii) Understand information in the OM pertaining to duties and responsibilities. (GM)

Guidance

Refer to the IRM for the definitions of *Evaluator* and *Instructor*.

Evaluation is applicable to all flight crew members, instructors and evaluators.

Such evaluation of proficiency is expected to be part of the flight crew selection process, but may occur during initial training or at any other point prior to the individual being assigned to duties as either a flight crew member, instructor or evaluator for the operator.

FLT 2.2.20 The Operator shall require flight crew members, who conduct flights into areas where English is the primary language of Air Traffic Control (ATC) and whose duties include communication with ATC to complete an evaluation during initial ground training to demonstrate a sufficient level of English language proficiency that will ensure effective communication during the performance of such duties. (GM)

Guidance

The intent of this provision is to ensure a pilot who is required to communicate with air traffic control in English demonstrates a sufficient level of English language proficiency to ensure effective communication during the performance of duties.

Such evaluation applies to each operating member of the flight crew, as required by the AFM, whose duties require communication in English with ATC.

English proficiency requirements do not apply to flight engineers or flight navigators unless their duties include air/ground communication in English.

FLT 2.2.21 (Intentionally open)

FLT 2.2.22 The Operator shall have a process to ensure flight crew members who conduct flights into areas where English is required for Air Traffic Control (ATC) communications, and who have not previously demonstrated expert English language proficiency, receive a periodic evaluation to demonstrate a minimum level of English language proficiency that is sufficient, as defined by the Operator and/or the State, to ensure effective communication during the performance of duties. Such evaluation shall be completed during initial ground training and subsequently once every three (3) to six (6) calendar years based on the proficiency level of the applicant. (GM)

Guidance

The intent of this provision is to ensure a pilot who is required to communicate with air traffic control in English, periodically demonstrates a sufficient level of English language proficiency to ensure effective communication during the performance of duties.

Such evaluation applies to each operating pilot member of the flight crew, as required by the AFM.

English proficiency requirements do not apply to flight engineers or flight navigators unless their duties include air/ground communication.

Periodic demonstration of language proficiency is not required of individuals who have previously demonstrated an expert level of English language proficiency. Such individuals are those whose native language is English and those whose native language is not English, but who understand English and speak English that is easily understood, even if spoken with a dialect or accent.

A State requirement, as part of flight crew licensing, for an individual to demonstrate expert English language proficiency can be used to satisfy the specifications of this provision.

In order to conform to these specifications, an operator may periodically evaluate Individuals that have not previously demonstrated expert English language proficiency in accordance with either:

- ICAO Annex 1, 2.9.6, 1.2.9.7 and ICAO Annex 1, Attachment 1.1 (ICAO Language Proficiency Rating Scale), or;

- Any State-approved or State-accepted method of English language proficiency evaluation that establishes a minimum proficiency level, defines an evaluation interval and requires pilot flight crew members to demonstrate a level of English language proficiency sufficient to ensure effective communication during the performance of duties.

Guidance for the development of language proficiency plans and associated interim risk mitigation measures related to delayed implementation may be found in ICAO Resolution A36-11 dated 26 October 2007.

FLT 2.2.23 The Operator shall ensure flight crew members receive training in aviation security, to include policies and procedures that address appropriate crew communication, coordination and action in response to acts of unlawful interference, during initial ground training and subsequently during recurrent training once every 3 calendar years or, if applicable, in accordance with the initial and continuing qualification schedule specified in the Operator's AQP/ATQP as approved or accepted by the Authority. (GM)

Guidance

The modification of qualification intervals in accordance with an advanced (or alternative) qualification program requires conformance with FLT 2.1.1B.

Training is applicable to all flight crew members.

FLT 2.2.24 <AC> If the Operator transports dangerous goods and assigns flight crew members duties and responsibilities related to the preflight inspection of ULDs containing accessible dangerous goods, the Operator shall ensure applicable flight crew members complete training and an evaluation in the preflight inspection and operation of such ULDs during initial ground training. (GM)

Guidance

Refer to the IRM for the definition of *Unit Load Device (ULD)*.

Training and evaluation is applicable to all flight crew members that would be assigned duties and responsibilities as specified.

Accessible dangerous goods are those containerized or palletized items accessible to the flight crew that could require flight crew action to ensure:

- ULDs containing accessible dangerous goods are visually intact;
- The airworthiness of the ULD;
- If applicable, the securing and preflight of any fire protection equipment;
- Accessible dangerous goods are stored properly, to include the proper segregation of dangerous goods.

A preflight inspection ensures containers and/or pallets containing accessible dangerous goods are visually intact.

FLT 2.2.25 (Intentionally open)

FLT 2.2.26 The Operator shall ensure flight crew members complete training in normal and non-normal procedures and maneuvers during initial training and subsequently during recurrent training once every calendar year or once every two (2) calendar years or, if applicable, in accordance with the initial and continuing qualification schedule specified in the Operator's AQP/ATQP as approved or accepted by the Authority. Such training shall address, as a minimum:

- i) PNF/PF and other flight crew division of duties (task sharing);
- ii) Positive transfer of aircraft control;
- iii) Consistent checklist philosophy;

- iv) Emphasis on a prioritization of tasks (e.g. "aviate, navigate, communicate");
- v) Proper use of all levels of flight automation. (GM)

Guidance

Refer to the IRM for the definitions of *Pilot Not Flying (PNF)* and *Pilot Flying (PF)*.

The intent of this provision is to set a training interval for normal and non-normal procedures, and additionally to ensure the training manual, curricula, lesson plans, or other guidance associated with such training addresses the specifications in items i) through v).

The modification of qualification intervals in accordance with an advanced (or alternative) qualification program requires conformance with FLT 2.1.1B.

Training is applicable to all flight crew members.

Elements of training may be accomplished as part of ground, simulator, aircraft or line training.

The term *Pilot Monitoring (PM)* may be substituted for the term *Pilot Not Flying (PNF)* for the purpose of applying the specifications of this provision

The specification in item iv) refers to the following prioritization of tasks during any normal or abnormal situation or maneuver:

- Aviate: fly the aircraft in accordance with restrictions and limitations set forth in the OM;
- Navigate: guide the aircraft along the intended or appropriate route;
- Communicate: verbalize intentions to other crew members and ATC, as applicable.

FLT 2.2.27 The Operator shall ensure flight crew members complete training and, when applicable, an evaluation, that includes a demonstration of competence in normal and non-normal procedures and maneuvers, to include, as a minimum, rejected takeoff, emergency evacuation, engine failure and/or those procedures and maneuvers specified in the Operator's AQP/ATQP as approved or accepted by the Authority. Such training and, when applicable, evaluation shall be accomplished **either**:

- i) During initial training and subsequently during recurrent training once every calendar year, **or**
- ii) In accordance with an AQP/ATQP approved by the Authority that requires evaluations to be satisfactorily completed within the maximum evaluation period delineated in Table 2.7, and includes a demonstration of competence in normal and non-normal procedures and maneuvers.. (GM)

Guidance

The intent of this provision is to define the basic initial and subsequent recurrent training and evaluation cycles that ensure flight crew members are competent to perform normal and non-normal procedures and maneuvers. It is understood that competence in all potential normal and non-normal procedures may not be demonstrated annually but in accordance with a schedule that is acceptable to the Authority.

The modification of qualification intervals in accordance with an advanced (or alternative) qualification program requires conformance with FLT 2.1.1B.

Training and, when applicable, a demonstration of competence in specified normal and non-normal procedures and maneuvers is applicable to all *pilot* crew members.

Training and, when applicable, evaluation is to be accomplished as part of ground, simulator/aircraft and line training;

Line training is in normal procedures/maneuvers only.

Such evaluation of competence in the normal and non-normal procedures and maneuvers specified is applicable when such procedures and/or maneuvers are stipulated by the operator

and/or State in conjunction with State-approved or State-accepted training courses that require a method of evaluation. Such courses typically include:

- Type qualification;
- Transition (conversion);
- Upgrade to PIC;
- Re-qualification;
- Recurrent training.

Operators that conduct training flights and cannot safely train/evaluate the specified non-normal procedures in an aircraft or in a representative flight training device in accordance with FLT 2.2.38 may demonstrate an alternative means of conforming to these specifications in accordance with FLT 2.2.41.

All pilot flight crew members who receive training in the normal and non-normal procedures and maneuvers specified in this provision also demonstrate competence in such procedures and maneuvers in accordance with the applicable specifications of FLT 2.3.2.

FLT 2.2.28 The Operator shall ensure flight crew members, prior to an evaluation, are familiar with those maneuvers and/or malfunctions that might be presented during the evaluation, but are not given information that reveals the exact sequence and the circumstances under which such maneuvers or malfunctions will be presented. (GM)

Guidance

The specification of this provision is not intended to preclude flight crews from knowing the city pairs to be flown or the general maneuver requirements prior to the evaluation; however, flight crews would typically not be provided with the exact evaluation scenario.

Operators that conduct training flights in an aircraft may divulge as much information about the intended training/evaluation as is necessary to ensure the safety of the planned operation.

FLT 2.2.29 The Operator shall ensure flight crew members, before starting line training, have successfully completed an Operator proficiency evaluation administered by an Evaluator of the Operator or a representative of the Authority, and have demonstrated the skill and knowledge level adequate for operating the aircraft at or above the standards stipulated in the training syllabus. (GM)

Guidance

An evaluation in conjunction with Initial Type Qualification satisfies this requirement.

FLT 2.2.30 The Operator shall ensure flight crew members complete training in CRM skills, which may be accomplished as part of simulator, aircraft and/or line training, as applicable. Such training shall be completed during initial training and subsequently during recurrent training once every calendar year or, if applicable, in accordance with the initial and continuing qualification schedule specified in the Operator's AQP/ATQP as approved or accepted by the Authority. (GM)

Guidance

The modification of qualification intervals in accordance with an advanced (or alternative) qualification program requires conformance with FLT 2.1.1B.

Training is applicable to all flight crew members.

This specification is intended to ensure CRM skills are emphasized during and integrated into simulator or aircraft training, as applicable, and line training.

FLT 2.2.31 The Operator shall ensure flight crew members complete a Line Operational Simulation (LOS) profile during initial simulator or aircraft training, and subsequently during

recurrent training once every calendar year or, if applicable, in accordance with the initial and continuing qualification schedule specified in the Operator's AQP/ATQP as approved or accepted by the Authority. Such training shall be:

- i) Approved or accepted by the State;
- ii) Administered real-time in a line environment setting;
- iii) An uninterrupted planned scenario with specific CRM objectives where such skills are observed and debriefed upon completion. (GM)

Guidance

Refer to the IRM for the definition of *Line Operational Simulation (LOS)*.

The modification of qualification intervals in accordance with an advanced (or alternative) qualification program requires conformance with FLT 2.1.1B.

Training and/or evaluation is applicable to flight crew members.

SPOT, LOE, and/or LOFT scenarios incorporated into the training program satisfy the specifications of this provision.

LOS scenarios are as standardized and scripted as possible. A simple menu of weather conditions and/or abnormals would not be acceptable as it increases the subjectivity of the presentation.

Operators that conduct training flights and cannot safely train or evaluate the specified procedures in an aircraft or in a representative flight training device in accordance with FLT 2.2.38 may demonstrate an alternative means of conforming to these specifications in accordance with FLT 2.2.41.

In the absence of a representative flight training device, such alternatives typically employ:

- LOS profiles conducted in a generic simulation device;
- An uninterrupted planned scenario in the aircraft with specific CRM objectives that include behavioral observation and assessment of crew performance, where such skills are observed and debriefed upon completion. This requires an operator to specify how the CRM objectives are set, evaluated and debriefed in a line environment.

FLT 2.2.32 The Operator shall ensure flight crew members complete training and, when applicable, an evaluation, that includes a demonstration of competence, in windshear avoidance and recovery from predictive and actual windshear. Such training shall be completed during initial ground and simulator training, and subsequently during recurrent simulator training once every three (3) calendar years or, if applicable, in accordance with the initial and continuing qualification schedule specified in the Operator's AQP/ATQP as approved or accepted by the Authority. (GM)

Guidance

Refer to the IRM for the definition of *Windshear*.

The intent of this provision is to ensure training and evaluation occurs, as applicable, in the maneuvers specified within the intervals specified. Such training and evaluation can occur in conjunction with any State-approved or State-accepted training course.

The modification of qualification intervals in accordance with an advanced (or alternative) qualification program requires conformance with FLT 2.1.1B.

Training and, when applicable, an evaluation in the specified normal and non-normal procedures and maneuvers is applicable to all *pilot* crew members.

Training is accomplished in a representative flight simulator approved for the purpose by the State.

Such evaluation of competence in the normal and non-normal procedures and maneuvers specified is applicable when such procedures and/or maneuvers are stipulated by the operator and/or State in conjunction with State-approved or State-accepted training courses that require a method of evaluation. Such courses typically include:

- Type qualification;
- Transition (conversion);
- Upgrade to PIC;
- Re-qualification;
- Recurrent training.

Training and evaluation of the non-normal procedures and maneuvers specified in this provision cannot be safely accomplished in an aircraft on a training flight (see FLT 2.2.38).

Operators that cannot conform to the specifications of this provision due to the non-existence of a representative flight training device may demonstrate an alternative means of conforming to these specifications in accordance with FLT 2.2.41.

The additional ground and line training and evaluation used to satisfy the specifications of this provision and of FLT 2.2.41 in the absence of a representative flight training device typically include a review of:

- Conditions conducive to windshear;
- Effects on aircraft performance;
- Indications of windshear presence;
- Avoidance and recovery techniques;
- Windshear case studies or scenarios.

FLT 2.2.33 The Operator shall ensure flight crew members complete training and an evaluation, which includes a demonstration of competence in terrain awareness procedures and maneuvers. Such training shall be completed during initial ground and simulator training and subsequently during recurrent simulator training once every three (3) calendar years or, if applicable, in accordance with the initial and continuing qualification schedule specified in the Operator's AQP/ATQP as approved or accepted by the Authority. Such training and evaluation shall include:

- i) Knowledge and conduct of associated procedures;
- ii) Response to GPWS alerts and warnings;
- iii) The avoidance of Controlled Flight Into Terrain (CFIT). (GM)

Guidance

The intent of this provision is to ensure training and evaluation occurs, as applicable, in the maneuvers specified within the intervals specified. Such training and evaluation can occur in conjunction with any State-approved or State-accepted training course.

The modification of qualification intervals in accordance with an advanced (or alternative) qualification program requires conformance with FLT 2.1.1B.

Training and evaluation in the specified normal and non-normal procedures and maneuvers in a representative flight simulator approved for the purpose by the State is applicable to *pilot* crew members.

Training and evaluation of the non-normal procedures and maneuvers specified in this provision cannot be safely accomplished in an aircraft on a training flight (see FLT 2.2.38).

Operators that cannot conform to the specifications of this provision due to the non-existence of a representative flight training device may demonstrate an alternative means of conforming to these specifications in accordance with FLT 2.2.41.

The additional ground and line training and evaluation used to satisfy the specifications of this provision and of FLT 2.2.41 in the absence of a representative flight training device typically includes a review of:

- CFIT avoidance techniques;
- CFIT recovery techniques and maximizing aircraft performance;
- GPWS alerts and warnings;
- CFIT case studies or scenarios.

FLT 2.2.34 If the Operator conducts low visibility operations, the Operator shall ensure flight crew members complete training and an evaluation that includes a demonstration of competence in such operations, as well as operations with inoperative ground based and/or aircraft equipment. Such training shall be completed during initial ground and simulator training and subsequently during recurrent simulator training once every calendar year or, if applicable, in accordance with the initial and continuing qualification schedule specified in the Operator's AQP/ATQP as approved or accepted by the Authority. (GM)

Guidance

The modification of qualification intervals in accordance with an advanced (or alternative) qualification program requires conformance with FLT 2.1.1B.

Training and evaluation in the specified normal and non-normal procedures and maneuvers is applicable to all *pilot* crew members.

Low visibility operations are considered in effect when the Runway Visual Range (RVR) is below 400m for takeoff and/or below Category I limits for landing.

Operators that conduct training flights and cannot safely train/evaluate the specified non-normal procedures in an aircraft or in a representative flight training device in accordance with FLT 2.2.38 may demonstrate an alternative means of conforming to these specifications in accordance with FLT 2.2.41.

FLT 2.2.35 The Operator shall ensure flight crew members with duties and responsibilities related to TCAS/ACAS alerting equipment complete training and an evaluation that includes a demonstration of competence in procedures for the proper response to TCAS/ACAS alerts. Such training and evaluation shall be completed during initial ground and simulator training and subsequently during recurrent simulator training once every three (3) calendar years or, if applicable, in accordance with the initial and continuing qualification schedule specified in the Operator's AQP/ATQP as approved or accepted by the Authority. (GM)

Guidance

The intent of this provision is to ensure training and evaluation occurs, as applicable, in the maneuvers specified within the intervals specified. Such training and evaluation can occur in conjunction with any State-approved or State-accepted training course.

The modification of qualification intervals in accordance with an advanced (or alternative) qualification program requires conformance with FLT 2.1.1B.

Training is accomplished in a representative flight simulator approved for the purpose by the State.

TCAS training may be performed without demonstrating capability in a simulator (since many simulators do not have TCAS capability).

Training and evaluation of the non-normal procedures and maneuvers specified in this provision cannot be safely accomplished in an aircraft on a training flight (see FLT 2.2.38).

Operators that cannot conform to the specifications of this provision due to the non-existence of a representative flight training device may demonstrate an alternative means of conforming to these specifications in accordance with FLT 2.2.41.

The additional ground and line training and evaluation used to satisfy the specifications of this provision and of FLT 2.2.41 in the absence of a representative flight training device typically include a review of:

- TCAS procedures and alert responses;
- TCAS alerts;
- TCAS case studies or scenarios.

FLT 2.2.36 (Intentionally open)

FLT 2.2.37 If the Operator utilizes pilot flight crew members designated to perform duties from either control seat, the Operator shall have seat-specific qualification for such flight crew members, to include training and an evaluation. Such training and evaluation shall be completed during initial ground and simulator training and subsequently during recurrent simulator training once every calendar year or, if applicable, in accordance with the initial and continuing qualification schedule specified in the Operator's AQP/ATQP as approved or accepted by the Authority. (GM)

Guidance

The intent of this provision is to ensure that any pilot designated to perform duties from either control seat, including takeoffs and landings, completes seat specific qualification.

The modification of qualification intervals in accordance with an advanced (or alternative) qualification program requires conformance with FLT 2.1.1B.

The specifications of this provision apply to pilot flight crew members, such as:

- Type Rating Instructors (TRIs)
- Type Rating Examiners (TREs)
- Pilots who are authorized to conduct takeoff and landings from either control seat.

Cruise relief pilots may meet the seat-specific requirements of this provision as part of a State-approved or State-accepted (cruise relief pilot) qualification program.

Cruise relief pilots are not required to receive recurrent training in both control seats once every calendar year unless required as part of a State approved or accepted (cruise relief pilot) qualification program.

FLT 2.2.38 If the Operator conducts training flights, the Operator shall specify those required maneuvers and procedures that cannot be safely accomplished in an aircraft, and ensure such maneuvers and procedures are trained and evaluated in a representative flight training device that has been approved and/or certified by the Authority. Maneuvers and procedures that cannot be safely accomplished in an aircraft shall include, as a minimum:

- i) Windshear avoidance and recovery;
- ii) Response to GPWS alerts and warnings and the avoidance of Controlled Flight Into Terrain (CFIT);
- iii) Response to TCAS/ACAS alerts. (GM)

Guidance

The intent of this provision is to ensure operators specify those maneuvers and procedures that cannot be safely accomplished in an aircraft, and that such maneuvers include, as a minimum, those specified in i), ii) and iii).

Refer to FLT 2.2.41 if no representative flight training device exists for the aircraft type.

Refer to FLT 2.2.32, FLT 2.2.33, FLT 2.2.35 and associated Guidance for additional specifications and information related to training and evaluation for the specified maneuvers.

FLT 2.2.39 If the Operator conducts training flights, the Operator shall ensure engine failures are simulated for the purpose of accomplishing maneuvers that involve a failed or inoperative engine. (GM)

Guidance

The intent of this provision is to ensure maneuvers that involve a failed or inoperative engine are safely accomplished when training in such maneuvers is performed in the aircraft (as required by the Authority or due to the unavailability of a representative flight simulator approved for the purpose by the State). In order to ensure maneuvers that involve a failed or inoperative engine are accomplished safely during training flights, engine failures are typically simulated in a manner that would not prevent the flight crew from recovering immediate and full control of an engine.

FLT 2.2.40 The Operator shall ensure flight crew members complete training and, when applicable, an evaluation that includes a demonstration of competence in duties and procedures related to flight crew incapacitation. Such training and, when applicable, evaluation shall be completed during initial ground training and subsequently during recurrent training once every three (3) calendar years or, if applicable, in accordance with the initial and continuing qualification schedule specified in the Operator's AQP/ATQP as approved or accepted by the Authority. (GM)

Guidance

The modification of qualification intervals in accordance with an advanced (or alternative) qualification program requires conformance with FLT 2.1.1B.

The specification of this provision is applicable to all flight crew members.

A demonstration of competence in the crew member duties and procedures related to flight crew incapacitation is applicable when such a demonstration is required by the operator and/or State in conjunction with State-approved or State-accepted training courses that require a method of evaluation. Such courses typically include:

- Type qualification;
- Transition (conversion);
- Upgrade to PIC;
- Re-qualification;
- Recurrent.

FLT 2.2.41 If the Operator conducts training flights and is not in conformity with FLT 2.2.38 due to the non-existence of a representative flight training device, the Operator shall utilize an alternative means for ensuring a demonstration of pilot competence in the applicable maneuvers and procedures. Any alternative means shall be approved or accepted by the State, and require a demonstration of competence through a combination of methods, to include:

- i) Generic flight training devices;
- ii) Additional ground and line training and evaluation;
- iii) As applicable, any other means that ensures a demonstration of pilot competence in the applicable maneuvers and procedures. (GM)

Guidance

The intent of this provision is for the operator to ensure, in the absence of a representative flight training device, that suitable and effective alternatives are utilized for the training and evaluation of maneuvers and procedures that cannot be safely conducted in an aircraft.

Windshear, GPWS, and TCAS training maneuvers and procedures typically cannot be safely accomplished in an aircraft during a training flight or line training, as specified in FLT 2.2.38.

Refer to FLT 2.2.32, FLT 2.2.33, FLT 2.2.35 and associated Guidance for additional specifications and information related to the required training and evaluation associated with:

- Windshear avoidance and recovery;
- Response to GPWS alerts and warnings and the avoidance of Controlled Flight Into Terrain (CFIT);
- Response to TCAS/ACAS alerts.

FLT 2.2.42 If the Operator transports passengers or supernumeraries, the Operator shall ensure flight crew members complete security training, which shall be in accordance with requirements of the civil aviation security program of the State and applicable requirements of other states where operations are conducted. Such security training shall:

- i) Have a balanced curriculum of theoretical and practical training to ensure flight crew members are able to act in the most appropriate manner to minimize the consequences of acts of unlawful interference and/or disruptive passenger behavior;
- ii) Be administered during initial ground training, and subsequently during recurrent training on a schedule in accordance with requirements of the security program of the State and, if applicable, other states where operations are conducted, but not less than a frequency specified by the Operator as necessary to maintain effectiveness in performing operational duties that involve aviation security responsibilities. (GM)

Guidance

Refer to the IRM for the definition of *Passenger*

Flight crew members are directly involved in the implementation of security measures and thereby require an awareness of obligations to the Security Program of the Operator.

In the past, the focus of crew security training in response to an unlawful seizure (hijacking) of an aircraft was passive resistance, delay and compliance with the demands of hijackers. Today, with the emergence of a "new breed" of suicide terrorists who intend to seize an aircraft and use it as a weapon of mass murder, crew security training focuses on the necessity for the flight crew to maintain control of the flight deck.

A Security training course for flight crew members would typically address:

- Appropriate responses to acts of unlawful interference;
- Security of the flight deck;
- Maintaining control of the flight deck;
- Appropriate self defense responses and use of non-lethal protective devices;
- Sabotage, hijacking;
- Unruly passengers.

FLT 2.2.43 If the Operator conducts passenger flights without cabin crew, the Operator shall ensure flight crew members, during initial training and subsequently during recurrent training every two (2) calendar years or, if applicable, in accordance with the initial and continuing qualification schedule specified in the Operator's AQP/ATQP as approved or accepted by the Authority, complete training to ensure competence in the performance of any assigned duties and functions related to passenger cabin safety and security. (GM)

Guidance

The training specified in the provision is to be accomplished as part of either the initial ground, simulator/aircraft or line training program.

The modification of qualification intervals in accordance with an advanced (or alternative) qualification program requires conformance with FLT 2.1.1B.

Cabin safety and security training would typically address:

- Aircraft systems and emergency equipment including:
 - Aircraft interior, passenger seats and restraints;
 - Aircraft-specific cabin duties and responsibilities;
 - Emergency exit locations and operation;
 - Emergency equipment locations and operation;
 - Slides, rafts, slide/rafts, ramp slide/rafts, life vests and other flotation devices as applicable.
- Cabin safety and security duties and responsibilities including:
 - Mandatory passenger briefings;
 - Passenger acceptance and handling;
 - The stowage of carry-on baggage;
 - The use of personal electronic devices;
 - Fueling with passengers on-board;
 - Cabin safety and security checks.
- Emergency procedures including:
 - Cabin duties assumed in the event of an emergency;
 - Cabin smoke, fumes and fires;
 - Emergency landing (land and water);
 - Planned and unplanned cabin emergency evacuations (land and water);
 - Oxygen administration;
 - Medical emergencies and first aid.
- Response to acts of unlawful interference including:
 - Flight deck access and security of the flight deck;
 - Aircraft search procedures;
 - Least risk bomb location.

Cabin safety and security training elements incorporated into other curricula of the flight crew member training program may satisfy the specifications of this provision.

FLT 2.2.44 If the Operator transports supernumeraries in the passenger cabin or supernumerary compartment of an aircraft that are required for the safety of operations, the operator *should* ensure supernumeraries receive aircraft type-specific training and an evaluation to ensure competence in the performance of any assigned duties or functions related to passenger cabin or cargo compartment safety. (GM)

Guidance

The intent of this provision is to ensure supernumeraries used in the passenger cabin or supernumerary compartment are competent to perform any assigned duties or functions related to passenger cabin or cargo compartment safety.

An aircraft type-specific training course would typically address any cabin or supernumerary compartment actions to be taken during normal, abnormal or emergency situations.

2.3 Line Qualification

FLT 2.3.1 The Operator shall have a line qualification program consisting of line training and, where applicable, evaluations, approved or accepted by the State, which ensures flight crew

members are qualified to operate in areas, on routes or route segments and into the airports to be used in operations for the Operator. Such program shall:

- i) Be published in the Training Manual or equivalent documents;
- ii) Ensure each pilot flight crew member has adequate knowledge of the elements specified in **Table 2.5**, as applicable to the areas, routes and route segments of intended operation;
- iii) Specify qualification requirements for operations in all areas, on all routes or route segments, and into all airports of use. (GM)

Guidance

Refer to FLT 2.4.1 and associated Guidance for additional specifications and information that addresses special areas, routes route segments and special airports.

FLT 2.3.2 The Operator shall ensure each pilot flight crew member, in order to maintain qualification, receives training, and when applicable, successfully completes a proficiency evaluation at or above the standards stipulated in the training syllabus and administered by an Evaluator of the Operator or a representative of the Authority, and demonstrates piloting technique and competence to execute emergency procedures and comply with instrument flight rules. Such training and, when applicable, evaluation shall be conducted in accordance with the requirements of the State and applicable authorities to ensure evaluations for all pilot flight crew members are conducted utilizing one or more of the following intervals, as applicable:

- i) For the PIC, twice within any period of one year plus or minus one calendar month from the original qualification anniversary date or base month, **and/or**
- ii) For pilot crew members other than the PIC, in accordance with i), or once within any period of one year plus or minus one calendar month from the original qualification anniversary date or base month, **and/or**
- iii) For any pilot crew member participating in an advanced (or alternative) training and qualification program, once within any period of one year, or other period approved or accepted by the State, provided such advanced training and qualification program incorporates all elements and specifications contained in **Table 2.6** and **Table 2.7**. (GM)

Guidance

Refer to the IRM for definitions of *Base Month*, *Calendar Month*, *LOE* and *Training to Proficiency*.

The modification of qualification intervals in accordance with an advanced (or alternative) qualification program requires conformance with FLT 2.1.1B.

The intent of this provision is to define the conditions necessary for a pilot crewmember to maintain qualification and to set a basic qualification interval, which may be slightly modified in accordance with the specifications of the provision or conditions stipulated in guidance material.

The specifications of this provision are minimum requirements and might be exceeded by requirements of the State or other applicable authorities. The applicable authorities specified in this provision refer to authorities that have jurisdiction over international operations conducted by an operator over the high seas or the territory of a state that is other than the State of the Operator.

An operator, in accordance with the requirements of the State and other applicable authorities, may adjust the frequency of evaluations specified in item i) of this provision to minimize overlap, preserve the original qualification date, and ensure evaluations are completed within the annual cycle set forth by the operator, State and/or applicable authorities.

Providing a minimum of two simulator training sessions within a thirteen month period typically satisfies the requirements of item i) if the interval between training sessions is not less restrictive than what is specified by the operator, State and/or applicable authorities.

The evaluation cycles specified in items i) and ii) of this provision may be completed in 13 months in accordance with State requirements that allow such cycle to be adjusted a maximum of plus or minus one calendar month from the original qualification anniversary date or base month. Such flexibility is normally incorporated in the training and evaluation program to allow for latitude in the trainee scheduling process.

The evaluation cycles specified in items i) and ii) of this provision may also be adjusted in accordance with State requirements that ensure each flight crew member undergoes training and, when applicable, an evaluation at least every 12 calendar months. If the training and evaluation, however, is conducted within 3 calendar months prior to the expiry of the 12 calendar months period, the next training and evaluation must be completed within 12 calendar months of the original expiry date of the previous training and evaluation.

Accommodations made to adjust evaluation cycles or frequency may not affect the original anniversary date or base month when flight crew member qualification was either:

- First established, or
- Re-established following a period of extended absence, and subject to the satisfactory completion of a training program designed specifically for the re-qualification of flight crew members following an extended absence.

One of the evaluations specified in item i), in a 12 calendar month period, may be administered by an instructor, trained and authorized by the operator and the Authority, during the conduct of a simulator or aircraft training course, approved or accepted by the Authority, for the purpose of maintaining piloting technique and competence.

One of the evaluations specified in item ii), in a 24 calendar month period, may be administered by an instructor, trained and authorized by the operator and the Authority, during the conduct of a simulator or aircraft training course, approved or accepted by the Authority, for the purpose of maintaining piloting technique and competence.

Simulator or aircraft training courses approved or accepted by the Authority for the purpose of maintaining piloting technique and competence typically include one or more of the following elements:

- Training-to-proficiency at the pilot controls of an aircraft or aircraft simulator;
- Appropriate briefings before and after the training;
- LOE utilizing a complete flight crew;
- Maneuvers and procedures (abnormal and emergency) that may occur in line operations.

FLT 2.3.3 The Operator shall ensure line training for the second-in-command (SIC) includes an amount of Pilot Not Flying (PNF) and Pilot Flying (PF) duties sufficient to develop and demonstrate proficiency in such duties. (GM)

Guidance

Refer to the IRM for the definitions of *Pilot Not Flying (PNF)* and *Pilot Flying (PF)*.

The term Pilot Monitoring (PM) may be substituted for the term Pilot Not Flying (PNF) for the purpose of applying the specifications of this provision.

FLT 2.3.4 The Operator shall ensure pilot flight crew members complete an evaluation that includes a demonstration of knowledge of the operations approved as part of the Air Operator Certificate (AOC) during initial training and subsequently during recurrent training once every calendar year or, if applicable, in accordance with the initial and continuing qualification schedule specified in the Operator's AQP/ATQP as approved or accepted by the Authority. Such evaluation shall include a demonstration of knowledge of:

- i) Approaches authorized by the Authority;

- ii) Ceiling and visibility requirements for takeoff, approach and landing;
- iii) Allowance for inoperative ground components;
- iv) Wind limitations (crosswind, headwind and tailwind). (GM)

Guidance

The modification of qualification intervals in accordance with an advanced (or alternative) qualification program requires conformance with FLT 2.1.1B.

The training and evaluation specified in this provision is accomplished by pilot flight crew members as part of either the ground training, simulator/aircraft training or line training program.

The specifications of this provision are normally satisfied during line training but can occur elsewhere in the training program.

FLT 2.3.5 The Operator shall ensure each pilot crew member completes line qualification, to include training and an evaluation, in accordance with FLT 2.3.1 to ensure an adequate knowledge of the areas, routes or route segments and airports of use, as specified in **Table 2.5**. Such training and evaluation shall be completed during initial training and qualification or, if applicable, in accordance with the initial and continuing qualification schedule specified in the Operator's AQP/ATQP as approved or accepted by the Authority, and prior to a pilot crew member being used as a PIC in operations. (GM)

Guidance

The modification of qualification intervals in accordance with an advanced (or alternative) qualification program requires conformance with FLT 2.1.1B.

This specification applies to all candidates for the position of PIC, to include SIC upgrade candidates and pilots hired directly into PIC positions in operations for the operator.

The training and evaluation specified in this provision is accomplished by pilot flight crew members as part of either the ground training, simulator/aircraft training or line training program.

FLT 2.3.6 The Operator shall ensure pilot flight crew members complete a Command Training and Evaluation program during initial training and qualification or, if applicable, in accordance with the initial and continuing qualification schedule specified in the Operator's AQP/ATQP as approved or accepted by the Authority, and prior to a pilot flight crew member being assigned as PIC in operations. (GM)

Guidance

The modification of qualification intervals in accordance with an advanced (or alternative) qualification program requires conformance with FLT 2.1.1B.

This specification applies to all candidates for the position of PIC, to include SIC upgrade candidates and pilots hired directly into PIC positions in operations for the operator.

Command training and evaluation is accomplished by pilot flight crew members as part of either the ground training, simulator/aircraft training or line training program.

Command training and evaluation programs may be conducted in addition to, and/or in conjunction with, one or more of the training programs specified in FLT 2.1.1.

Such programs address the technical and non-technical aspects of command relevant to the operations of the operator, to include:

- Technical seat-specific aircraft training for the aircraft type;
- Basic operator familiarization training in subjects relevant to the PIC;
- Human performance and CRM skill training relevant to command, the relationship with other crew members and the operation as a whole (e.g., leadership, team building, conflict resolution, etc.);

- Training in the sections of the OM relevant to command, to include:
 - Authority and responsibilities of the PIC in operations for the operator;
 - Adherence to the limitations of the AOC;
 - Responsibilities relevant to the OFP and ATL;
 - Responsibilities relevant to the reporting of accidents and incidents.

2.4 Special Qualification

FLT 2.4.1 The Operator shall ensure each pilot flight crew member completes training in the special skills and/or knowledge required to operate in areas and on routes or route segments over difficult terrain and/or into special airports, as designated by the State or by the operator. Such training shall be completed during initial training and prior to being used as a PIC, and subsequently during recurrent training once every calendar year. The content of training shall ensure the PIC has adequate knowledge of the elements specified in **Table 2.5** as applicable to the areas, routes, route segments and special airports of intended operation. (GM)

Guidance

Specifications in this provision apply to candidates for the position of PIC, to include SIC upgrade candidates and pilots hired directly into PIC positions in operations for the operator.

The training specified in this provision is accomplished by pilot flight crew members as part of either the ground, simulator/aircraft or line training program.

Requirements typically vary by state and class of special airport, but generally renewed once per calendar year.

Special airport and/or route qualification (if applicable) could include one or more of the following elements, as approved or accepted by the State:

- PIC review of an adequate pictorial representation (aerial photographic approach plate, video presentation, slideshows, etc.);
- Simulator training;
- Line check airmen briefing;
- PIC operation into the airport accompanied by a line check or other qualified airman;
- Exemptions for VFR operations.

The specifications of this provision address the training required to operate over difficult terrain and/or into special airports based on a determination, by the operator and/or State, that pilots require special skills or knowledge for such operations. Such training typically addresses routes and/or airports that are over or in areas:

- With mountainous terrain, including high terrain, rapidly rising terrain or terrain with steep gradients;
- With terrain that contributes to the existence of mountain waves, turbulence, high surface winds, sudden wind changes and/or other atmospheric phenomena that could affect the performance of the aircraft;
- Containing topographical variations such as ridgelines, valleys, ravines, fjords or other areas where downdrafts on the leeward or downwind side can make traversing the area or accomplishing a crosswind landing hazardous;
- Where the airport, runway and/or approach environment is difficult to identify at night due to surrounding lights;
- Where featureless or expansive terrain could contribute to optical illusions during the day or at night;

- That are devoid of lighting where airport, runway and/or approach area identification is difficult at night due to lack of visible landmarks;
- That are devoid of lighting and sole reference to external or visual cues is insufficient for the maintenance of proper aircraft attitude control;
- That require the application of any other specific skills or knowledge, as determined by the operator and/or State.

FLT 2.4.2 If the Operator engages in specialized navigation (MNPS, AMU), the Operator shall ensure flight crew members complete training or an evaluation in such operations during initial training and prior to being utilized in operations that require specialized navigation. (GM)

Guidance

Refer to the IRM for the definition of *Areas of Magnetic Unreliability (AMU)*.

The training or evaluation specified in this provision is accomplished by flight crew members as part of either the initial ground, simulator/aircraft or line training program.

The specifications of this provision apply to pilot flight crew members and, if utilized in conjunction with such operations, flight navigators.

FLT 2.4.3 If the Operator utilizes flight crew members to concurrently operate aircraft of different types, or operate variants within one type, the Operator shall have qualification processes that are approved or accepted by the State and ensure such flight crew members complete training and an evaluation that emphasizes the differences between aircraft types and variants. Such training and evaluation shall be completed during initial ground, simulator and line training, and subsequently during recurrent simulator training once every calendar year or, if applicable, in accordance with the initial and continuing qualification schedule specified in the Operator's AQP/ATQP as approved or accepted by the Authority. (GM)

Guidance

Refer to the IRM for the definitions of *Aircraft Type* and *Aircraft Variant (within Type)*.

The intent of this specification is to ensure flight crew members are familiarized with the significant differences in equipment and/or procedures between concurrently operated types or variants.

The determination of variant within type is within the domain of the State as part of flight crew licensing.

The modification of qualification intervals in accordance with an advanced (or alternative) qualification program requires conformance with FLT 2.1.1B.

Qualification processes are applicable to all flight crew members used in such operations and as defined in the IRM.

Aircraft differences that require emphasis typically include level of technology, ergonomics, operational differences and handling characteristics.

3 Line Operations

3.1 Common Language

FLT 3.1.1 The Operator shall ensure the designation of a common language(s) for use by all flight crew members for communication:

- i) On the flight deck during line operations;
- ii) If the Operator conducts passenger flights with cabin crew, between the flight crew and cabin crew during line operations;
- iii) During flight crew training and evaluation activities. (GM)

Guidance

More than one common reference language might be designated.

Communication in the designated common language is applicable to all flight crew members, including foreign nationals and expatriates utilized as flight crew members, instructors or evaluators by the operator.

The operator is expected to be in compliance with the common language requirements of the State (e.g., mandatory for operations, a condition for employment or a condition for airman certification), if such requirements exist. If no State requirements exist, the operator is expected to designate an appropriate common operational language for use by flight crew members, as specified in this provision.

The existence (and application) of a State common language requirement that satisfies the specifications of this provision relieves the operator of such a designation in operational documentation.

3.2 Flight Crew Responsibilities

FLT 3.2.1 The Operator shall ensure the PIC is assigned the responsibility for recording the following information for each flight:

- i) Aircraft registration
- ii) Date
- iii) Flight number
- iv) Flight crew names and duty assignment
- v) Departure and arrival airports
- vi) ATD, ATA, flight time. (GM)

Guidance

The specifications of this provision could be recorded by electronic means (e.g., ACARS) or manually by PIC or his/her designee.

The specification in item iv) refers to the designation of crew duty assignments as specified in the AFM or by the operator (e.g. Captain, First Officer, Flight Engineer, Navigator, Radio Operator, Load Master).

3.3 Flight Crew Qualifications

FLT 3.3.1 The Operator shall specify the composition and required number of flight crew members taking into account the type of aircraft, flight crew qualification requirements and flight/duty time limitations. (GM)

Guidance

The intent of this provision is to ensure flight crews are composed of the flight crew members appropriate for the aircraft type and planned operation.

As applicable to an operator, crew composition requirements would typically also address the use of relief pilots and/or augmented crews.

FLT 3.3.2 The Operator shall have guidance and criteria that address the pairing of inexperienced pilot crew members and ensure scheduling processes prevent inexperienced pilot flight crew members, as defined by the Operator or the State, from operating together. (GM)

Guidance

The definition of inexperienced pilot flight crew member typically varies depending on the operator or the State and generally refers to a minimum number of hours in aircraft type after the completion of initial training/qualification.

The specifications of this provision are intended to preclude two newly trained or inexperienced pilots from operating together in an aircraft type until they each achieve a level of experience defined by the operator or the State.

FLT 3.3.3 If the Operator conducts low visibility approaches, the Operator shall define a minimum level of command experience required for a pilot to be authorized to conduct such approaches as PIC to approved Operator minima. (GM)

Guidance

For those flight crew members qualified as PIC on aircraft types equipped for low visibility approaches, the specification for a minimum level of command experience may be replaced by a State-approved or State-accepted training program on low visibility operations conducted in a simulator suitable for the purpose.

FLT 3.3.4 The Operator shall ensure flight crew members will not operate an aircraft unless issued a medical assessment in accordance with requirements of the State; such assessment shall not be valid for a period greater than 12 months. (GM)

Guidance

Requirements of the State and/or an applicable authority that are associated with medical classifications, aircraft types, flight crew positions and/or licensing could require a more restrictive assessment interval than specified in this provision. An applicable authority is one that has jurisdiction over international operations conducted by an operator over the high seas or the territory of a state that is other than the State of the Operator.

FLT 3.3.5 If the Operator, in accordance with laws of the State, utilizes pilot flight crew members who have attained 60 years of age to operate aircraft in international operations, the Operator shall have a process to ensure such pilot flight crew members **either**:

- i) Are not permitted to act as PIC, **or**
- ii) In the case of operations in aircraft certificated with more than one pilot where the other required pilot is younger than 60 years of age, are not permitted to act as PIC after their 65th birthday. (GM)

Guidance

The intent of this provision is to preclude a pilot flight crew member that is engaged in international operations and has attained 60 years of age to operate as the PIC with an SIC that has also attained 60 years of age.

The specifications of this provision refer to the maximum age(s), as specified by an operator or the Authority, beyond which pilot privileges are curtailed or cancelled. Such curtailment or

cancellation of privileges is generally associated with flight crew member position and/or flight crew composition.

Operators that do not specify the maximum age limits for flight crew members would demonstrate the method used to determine when individual pilots can no longer exercise the full privileges of their pilot license in operations for the operator.

The specifications of this provision may be satisfied by an operator's process for tracking pilot flight crew member age, if age requirements or limits are specified by the operator or Authority. Such tracking might be necessary to conform to State requirements when a pilot crew member changes position or reaches a mandatory age limit.

FLT 3.3.6 The Operator shall have a requirement that prohibits flight crew members from operating an aircraft if not qualified for duty in accordance with requirements specified in **Table 2.3**.

FLT 3.3.7 The Operator shall have a process to ensure flight crew member recency-of-experience requirements are satisfied as follows:

- i) A pilot does not act as PIC or SIC of an aircraft unless **either**:
 - a) On the same type or variant of aircraft within the preceding 90 days (120 days if under the supervision of an instructor or evaluator), that pilot has operated the flight controls during at least three takeoffs and landings in the aircraft type or in a flight simulator approved for the purpose by the appropriate authority, **or**
 - b) On the same type or variant of aircraft within a time period acceptable to the State and applicable authorities, that pilot has operated the flight controls during the number of takeoffs and landings in the aircraft type or in a flight simulator approved for the purpose by the appropriate authority, necessary to conform to a defined recency of experience schedule approved or accepted by the State and applicable authorities.
- ii) A pilot does not act in the capacity of a cruise relief pilot unless, within the preceding 90 days, that pilot has **either**:
 - a) Operated as PIC, SIC or cruise relief pilot on the same type or variant of aircraft, **or**
 - b) Completed flying skill refresher training to include normal, abnormal and emergency procedures specific to cruise flight on the same type of aircraft or in a flight simulator approved for the purpose, and has practiced approach and landing procedures, where the approach and landing procedure practice may be performed as the PNF.
- iii) A flight engineer does not perform his/her duties in an aircraft unless **either**:
 - a) Within the preceding 6 calendar months, that individual has had at least 50 hours of flight time as a flight engineer on that aircraft type aircraft, **or**
 - b) Within the preceding 90 days, that individual has operated as a flight engineer onboard that aircraft type or in a simulator of the aircraft type.
- iv) If a flight crew member does not satisfy recency-of-experience requirements in accordance with i), ii), or iii), such flight crew member completes re-qualification in accordance with the Operator's training and evaluation program. (GM)

Guidance

Refer to the IRM for the definition of *Cruise Relief Pilot*.

The specification in item i) requires the pilots to operate the flight controls: PNF duties do not satisfy recency-of-experience requirements for this specification.

The specification in item i) b) may stipulate the number of takeoffs and landings to be performed according to a defined schedule in order to establish an equivalent level of recency experience. Such schedule would not have to adhere exactly to the specification in item i) a) of this provision if the level of recent experience is acceptable to the State and applicable authorities, and the PIC or SIC, as applicable, is required to operate the flight controls in order to satisfy recency-of-experience requirements.

Item iv) specifies that a flight crew member whose recency has lapsed for any reason becomes unqualified, and must be re-qualified by the operator. The requalification program for such a flight crewmember need not specify the same number of takeoffs and landings as the recency requirements.

Applicable authorities include those authorities that have jurisdiction over international operations conducted by an operator over the high seas or the territory of a state that is other than the State of the Operator.

FLT 3.3.8 If the Operator utilizes flight navigators or radio operators, the Operator shall have a process to ensure flight navigators and/or radio operators, as applicable, do not perform their duties in an aircraft unless they satisfy the recency-of-experience requirements of the Operator and the State.

FLT 3.3.9 The Operator shall have a process to ensure each pilot, prior to being used as a PIC in operations, is currently qualified for operations into airports of intended landing in areas, on routes or route segments to be used in operations for the Operator. If an instrument approach is required into an airport for which the PIC has not made an actual approach, the PIC shall be accompanied by a pilot flight crew member or pilot observer on the flight deck who is qualified for the airport unless **either**:

- i) The approach to the airport is *not* over difficult terrain and the instrument approach procedures and aids available are similar to those with which the pilot is familiar, and the normal operating minima are adjusted by a process that adds a margin of safety that is approved or accepted by the State, or there is reasonable certainty that the approach and landing can be made in visual meteorological conditions, **or**
- ii) Descent from the initial approach altitude to landing at the airport can be made by day in VMC, **or**
- iii) The operator qualifies the PIC to land at the airport by means of a pictorial representation approved or accepted the Authority, **or**
- iv) The airport is adjacent to another airport at which the PIC is currently qualified to land.
(GM)

Guidance

The specification in item i) may be satisfied by a process, approved or accepted by the State, that:

- Identifies instrument approach procedures that require the application of margins to operating minima;
- Specifies the operating margin to be applied.

The specification in item iv) may be satisfied by any pictorial representation approved or accepted for the purpose by the Authority, such as an instrument approach plate or chart.

Refer to FLT 2.4.1 and associated Guidance for additional specifications and information that addresses special areas, routes, route segments and special airports.

FLT 3.3.10 The Operator shall have a process to ensure a pilot is not utilized as a PIC in operations that require the application of special skills or knowledge within areas, on routes over

difficult terrain and/or into special airports, as designated by the State or by the Operator, unless, within the preceding 12 months, that pilot has **either**:

- i) Made at least one trip as a pilot flight crew member, line check airman or observer on the flight deck on a route in close proximity and over similar terrain within the specified area(s), on the specified route and/or into the special airport, as applicable, **or**
- ii) Fulfilled special line qualification requirements in accordance with FLT 2.4.1. (GM)

Guidance

Special airport and/or route/area re-qualification (if applicable) could take the form of pictorial review, simulator training, line check airmen briefing or operation into the airport accompanied by a line check airman.

For the purposes of route, area and airport qualification, the PIC has a level of knowledge of terrain, minimum safe altitudes, seasonal meteorological conditions, communication and air traffic facilities, services and procedures, search and rescue procedures and navigational facilities and procedures, including any Long-Range Navigation procedures, required for safe operations.

Refer to FLT 2.4.1 and associated Guidance for additional specifications and information that addresses special areas, routes route segments and special airports.

3.4 Flight Crew Scheduling

FLT 3.4.1 The Operator shall have a scheduling process that ensures flight crew members, prior to being assigned to duty, are qualified and current in accordance with:

- i) Applicable flight crew qualification requirements contained in **Table 2.3**;
- ii) If applicable, additional requirements of the State

FLT 3.4.2 The Operator shall have a scheduling policy that ensures flight crew members, prior to being assigned to duty, will not be affected by factors that could impair human performance, to include, as a minimum:

- i) Pregnancy;
- ii) Illness, surgery or use of medication(s);
- iii) Blood donation;
- iv) Deep underwater diving;
- v) Fatigue occurring in one flight, successive flights or accumulated over a period of time. (GM)

Guidance

The intent of this provision is to ensure an operator's policies address flight crew member "fitness for duty." Such policies typically assign the responsibility to the flight crew member to report or remain "fit for duty" in accordance with the list of specifications in this provision.

FLT 3.4.3 The Operator shall have flight time and duty period limitations as well as a rest period scheme for flight crew members that are published or referenced in the OM and ensure fatigue occurring either in one flight, successive flights or accumulated over a period of time does not endanger the safety of flight operations. Such limitations shall be in accordance with applicable regulations, or approved or accepted by the Authority. (GM)

Guidance

The intent of this provision is to ensure an operator establishes maximum duty period limitations and rest policies for the management of crew member fatigue in a manner that:

- Is consistent with requirements of the State;
- Precludes fatigue from endangering safety of the flight.

Variations from the operator's fatigue management policies are permissible if the means for establishing such variations provide an acceptable level of safety and are approved or accepted by the State. The intent of any such variations is to permit operators a degree of flexibility when making changes to fatigue management policies to account for changing circumstances in a dynamic operating environment.

FLT 3.4.4 The Operator shall consider the following as duty time for the purposes of determining required rest periods and calculating duty time limitations for operating flight crew members:

- i) Entire duration of the flight;
- ii) Pre-operating deadhead time;
- iii) Training periods prior to a flight;
- iv) Administrative or office time prior to a flight (for flight crew members that serve in a management function);
- v) If required by the State, flight time accrued by flight crew members in operations other than those of the Operator. (GM)

Guidance

The term *deadhead* in sub-specification i) refers to the transportation of non-operating crew members, typically for positioning purposes, before or after an operational duty assignment.

The intent of this provision is to ensure an operator considers non-flight duty time, or flight time accrued in operations other than those of the operator, that is likely to induce fatigue into the calculation of duty time limitations and the determination of required rest periods.

FLT 3.4.5 (Intentionally open)

FLT 3.4.6 If the Operator utilizes flight crew members that are concurrently qualified to operate aircraft of different types, or operate variants within one type, and the State specifies unique training and/or scheduling requirements for such flight crew members, the Operator shall have a scheduling process that addresses such unique requirements. (GM)

Guidance

The intent of this provision is to ensure scheduling processes address the unique State requirements (e.g. recency on each type or variant, or training on each type or variant) necessary for flight crew members to remain concurrently qualified to operate multiple types or variants within type.

The determination of variant within type is within the domain of the State as part of flight crew licensing

3.5 Flight Preparation

FLT 3.5.1 The Operator shall have procedures that describe flight crew member duties and responsibilities for flight preparation and ensure flight crew members, prior to the commencement of each flight, complete a review of:

- i) The Aircraft Technical Log (ATL) and the MEL/CDL to determine the airworthiness status of the aircraft;
- ii) The OFP;
- iii) Weather information to include en route and departure, destination and alternate airports;
- iv) NOTAMS;
- v) Aircraft performance;
- vi) Aircraft weight/mass and balance. (GM)

Guidance

Refer to the IRM for the definition of *Aircraft Technical Log (ATL)*.

FLT 3.5.2 If the Operator utilizes aircraft with electronic navigation data capabilities, the Operator shall have guidance and procedures for flight crew members to ensure the validity of any electronic navigation database installed into aircraft navigation equipment. (GM)

Guidance

Where more than one database is available for use in the aircraft navigation system, an operator can ensure database validity by providing guidance for the flight crew to select the new database for use prior to the first flight on the effective date for the new database.

The operator may provide relief in the MEL, permitting flight crew use of a non-current database for a specified period of time due to database errors or faults.

FLT 3.5.3 If the Operator utilizes electronic flight bag (EFB) devices or systems, the Operator *should* have guidance and procedures for flight crew members that address each EFB and the operations conducted. Such guidance and procedures *should* address as a minimum:

- i) EFB use during normal and abnormal operations;
- ii) Database currency;
- iii) Operating limitations;
- iv) The remediation of EFB defects and/or errors including MEL processing if applicable;
- v) EFB failures. (GM)

Guidance

Refer to the IRM for the definition of *Electronic Flight Bag (EFB)*.

An EFB may be used in conjunction with traditional hardcopy documents or to ultimately replace the paper material a pilot is required to carry.

The specification in item i) refers to normal and abnormal operating procedures for all applicable flight operations with EFBs. Such procedures are typically designed to control additional workloads created by using EFB devices or systems and also specify times at which the flight crew should not use them.

The specification in item ii) refers specifically to flight crew validation procedures for EFB databases (e.g., electronic charts, performance data, etc.). Such validation may also apply to the software required to display informative documents, such as pre-composed, fixed presentations of data currently in paper format, if such validation is not accomplished by other means or personnel. The management and control of such information by the organization, however, is in accordance with FLT 1.6.1 to 1.6.5 inclusive. Additionally, the oversight and control of third party software is in accordance with FLT 1.11.3.

The specification in item iii) refers to limitations regarding the use of an EFB. For example, where the EFB is used for aircraft performance calculations such limitations would typically require procedures for flight crew members to independently verify input data and crosscheck calculations in a manner that provides sufficient opportunities for errors to be detected.

The specification in item iv) refers to the procedures for identifying and correcting defects and/or errors in EFB software or hardware. Such procedures may or may not require processing in accordance with the MEL depending on the class of EFB in use by the operator and approved by the Authority.

The specifications in item v) refer to contingency procedures should an EFB or combination of EFBs lose specific functionality or become unusable.

3.6 Route and Airport Planning

FLT 3.6.1 The Operator shall ensure minimum flight altitude information applicable to all phases of a flight, as well as instructions for the use of such information, is available to the flight crew. (GM)

Guidance

Minimum flight altitude information may be provided in the OFP or obtained from airport and en route charts. Such flight altitude information typically includes:

- Minimum Safety Altitude (MSA);
- Minimum Descent Altitude/Height (MDA/H);
- Minimum En route Altitude (MEA);
- Minimum Obstruction Clearance Altitude (MOCA);
- Minimum Off-Route Altitude (MORA);
- Minimum Vectoring Altitude (MVA);
- Any other minimum altitudes prescribed by the Authority.

FLT 3.6.2 The Operator shall have guidance that enables the flight crew to determine airports of intended use are adequate to meet operational requirements, to include:

- i) Applicable performance requirements;
- ii) Runway characteristics;
- iii) Air Traffic Service and associated communications;
- iv) Navigation aids and lighting;
- v) Weather reporting;
- vi) Emergency services.

FLT 3.6.3 The Operator shall have guidance that enables the flight crew to determine operating minima for airports of intended use. (GM)

Guidance

Operating minima refer to the limits of usability of an airport for takeoff or landing expressed in terms of RVR, visibility, cloud condition or decision altitude/height. Operating minima could be affected by aircraft equipment, flight crew qualifications and airport facilities/environment.

The specification of this provision only refers to the determination of minima related to airport facilities/environment.

The specification of this provision also applies to the modification of takeoff and approach minima to allow for airport equipment outages. Examples of airport equipment outages include: runway edge lights inoperative, center line lights inoperative, etc.

Airports of intended use include: departure alternate, en route alternate, destination and destination alternate.

FLT 3.6.4 The Operator shall have guidance that enables the flight crew to determine Runway Visual Range (RVR) requirements for runways of intended use, to include, as a minimum:

- i) Requirement for the availability of RVR reporting in order for CAT II and CAT III approach and landing operations to be authorized;
- ii) Required minimum RVR values for takeoff and authorized approaches;
- iii) Required minimum RVR values that consider inoperative approach/runway lighting, inoperative transmissometers or inadequate visual reference. (GM)

Guidance

The means of RVR measurement typically varies depending on the State.

The specification in item iii) may be satisfied by a corrections table or manual corrections for inoperative equipment applied to published minimums.

FLT 3.6.5 The Operator *should* have guidance that ensures approach and landing operations are not authorized when the airport operating landing visibility minimum is below 800 meters unless RVR reporting is available for the runway of intended use. (GM)

Guidance

The intent of this provision is to ensure that a meteorological visibility to RVR conversion is not used for calculating any required approach and landing RVR minimum less than 800 meters, and that for approach and landing operations below 800 meters RVR reporting is required.

3.7 Fuel, Weight/Mass and Balance, Flight Plans

FLT 3.7.1 The Operator shall have a fuel policy and guidance that enables the flight crew to determine the minimum dispatch/departure fuel for each flight, to include, as applicable:

- i) Taxi fuel;
- ii) Trip fuel (takeoff, climb, en route, descent, approach and landing);
- iii) Holding fuel;
- iv) Alternate fuel (takeoff, en route, ETOPS, destination);
- v) Contingency fuel;
- vi) Reserve fuel;
- vii) Additional fuel (MEL-required, ballast, other);
- viii) Tanker fuel. (GM)

Guidance

Refer to the IRM for the definition of *Fuel (Flight Planning)*, which defines fuel categories that are typically used when defining regulatory and/or operational requirements during the flight planning process and in the OFP.

Individual aircraft fuel consumption, MEL/CDL adjustments, anticipated operational constraints (weather, de-icing, slots, etc.) are all factors to be considered in calculating minimum dispatch/departure fuel required.

Fuel calculations are typically made by a flight crew member, a Flight Operations Officer/Flight Dispatcher, or both.

FLT 3.7.2 The Operator shall delegate authority to the PIC for the final decision for the amount of fuel to be carried on each flight. (GM)

Guidance

The PIC has final authority in cases of disagreement with a Flight Dispatcher/Flight Operations Officer (FOO) in a shared system of responsibility for operational control.

FLT 3.7.3 The Operator shall have guidance that enables the flight crew to prepare and/or accept a loadsheet with accurate aircraft weight/mass and balance calculations for each flight. Such guidance shall:

- i) Assign responsibility to the PIC for ensuring the loadsheet content is satisfactory prior to each flight;

- ii) Incorporate flight crew procedures for preparing or accepting last minute changes (LMC) to the load sheet, to include guidance for the maximum allowable difference between planned and actual weights.

FLT 3.7.4 (Intentionally open)

FLT 3.7.5 The Operator shall have a description of the Air Traffic Services (ATS) Flight Plan, as well as guidance for its use, that is accessible to the flight crew during flight preparation.

FLT 3.7.6 The Operator shall ensure an Operational Flight Plan (OFP) or equivalent document is available for the flight crew during flight preparation and accessible to the flight crew during flight.

FLT 3.7.7 The Operator shall ensure the OFP or equivalent document is accepted and signed, using either manuscript or an approved electronic method, by the PIC during flight preparation.

FLT 3.7.8 The Operator shall have guidance that enables the flight crew to determine suitable en route alternate airports.

3.8 Aircraft Preflight and Airworthiness

FLT 3.8.1 The Operator shall have guidance that describes flight crew duties and responsibilities for the use and/or application of the ATL, MEL and CDL. Such guidance shall be included in the OM or in other documents that are available to the flight crew during flight preparation and accessible to the flight crew during flight. (GM)

Guidance

The specifications of this provision also apply to equivalents for the MEL and CDL.

FLT 3.8.2 The Operator shall have guidance that is published in the OM or other document(s) and is available to the flight crew to ensure information entered in the ATL:

- i) Is up to date;
- ii) Legible;
- iii) Cannot be erased;
- iv) Is correctable in the case of an error provided each correction is identifiable and errors remain legible.

FLT 3.8.3 The Operator shall assign the PIC the authority to reject an aircraft prior to departure of a flight if dissatisfied with any aspect of the airworthiness and/or maintenance status of the aircraft. (GM)

Guidance

PIC acceptance is based on a review of the MEL/CDL, ATL and/or any other operator or State-approved sources of technical information attesting to the mechanical state of the aircraft.

FLT 3.8.4 The Operator shall ensure an aircraft does not depart with any defect affecting airworthiness that has not been processed in accordance with the MEL/CDL.

FLT 3.8.5 The Operator shall have a procedure to ensure the PIC records in the ATL, for each flight, a description of known or suspected defects that affect operation of the aircraft.

FLT 3.8.6 The Operator shall ensure, prior to each flight, an exterior aircraft inspection (walk-around) is performed by a member of the flight crew or delegated to a licensed aircraft maintenance technician. If delegated, the Operator shall ensure the flight crew is notified prior to flight that the inspection has been completed.

FLT 3.8.7A The Operator shall have guidance, published in the OM or other document(s) available to the flight crew during flight preparation, that requires an exterior aircraft inspection (walk-around) that focuses on safety-critical areas of the aircraft and ensures, as a minimum:

- i) Pitot and static ports are not damaged or obstructed;
- ii) Flight controls are not locked or disabled (as applicable, depending on aircraft type);
- iii) Frost, snow or ice is not present on critical surfaces;
- iv) Aircraft structure or structural components are not damaged. (GM)

Guidance

This provision requires guidance also be present in documents accessible to licensed maintenance technicians, if the exterior aircraft inspection is delegated in accordance with FLT 3.8.6.

FLT 3.8.7B The Operator shall have a procedure to ensure the availability, accessibility and serviceability of aircraft flight deck emergency systems and equipment. Such procedure shall include a preflight inspection of systems and equipment, which, as a minimum, is conducted by the flight crew prior to the first flight:

- i) Of the flight crew on an aircraft during a duty period;
- ii) On an aircraft after it has been left unattended by a flight crew for any period of time.

FLT 3.8.8 If the Operator conducts passenger flights or transports supernumeraries in the passenger cabin with or without cabin crew, the Operator shall have a procedure to ensure the availability, accessibility and serviceability of aircraft cabin emergency systems and equipment. Such procedure shall include a preflight inspection of such systems and equipment, which, as a minimum, shall be conducted by the flight crew or, if applicable, delegated to the cabin crew prior to the first flight:

- i) Of the flight crew on an aircraft during a duty period;
- ii) After a new cabin crew has assumed control of the aircraft cabin;
- iii) After an aircraft has been left unattended by a flight crew or cabin crew for any period of time. (GM)

Guidance

The intent of this provision is for a preflight inspection of cabin emergency systems and equipment to be accomplished by either the flight crew or cabin crew, as applicable, under the circumstances specified.

FLT 3.8.9 <AC> If the flight crew is required to conduct a preflight interior inspection of the cargo compartment and/or supernumerary compartment, the Operator shall have guidance, published in the OM or other document available to the flight crew during the flight preparation, for the conduct of such inspection to ensure the availability, accessibility and serviceability of restraint systems and emergency equipment.

FLT 3.8.10 If the Operator transports passengers and/or supernumeraries, and does *not* use a cabin crew, the Operator shall have procedures to ensure, prior to departure of a flight, passengers and/or supernumeraries, as applicable, have been briefed and are familiar with the location and use of safety equipment, to include:

- i) Seat belts;
- ii) Emergency exits;
- iii) Life jackets (individual flotation devices), if required in accordance with CAB 4.2.7, 4.2.8, or 4.2.9;

- iv) Life rafts, if required in accordance with FLT 4.3.35 or CAB 4.2.10;
- v) Oxygen masks;
- vi) Emergency equipment for collective use. (GM)

Guidance

The briefing related to the specification in item ii) also typically addresses any applicable requirements and restrictions for personnel seated adjacent to cabin emergency exits.

Refer to CAB 4.2.7, 4.2.8, 4.2.9 or 4.2.10 in Section 5 (CAB) of this manual.

3.9 Ground Handling

FLT 3.9.1 (Intentionally open)

FLT 3.9.2 If the Operator conducts passenger flights, the Operator shall have procedures to ensure a coordinated and expeditious cabin evacuation during aircraft fueling operations with passengers embarking, onboard or disembarking. Such procedures shall require:

- i) Cabin exits are designated for rapid deplaning or emergency evacuation, and routes to such exits are unobstructed;
- ii) The area outside designated emergency evacuation exits is unobstructed;
- iii) Qualified persons trained in emergency procedures are positioned near aircraft boarding door(s) or are otherwise in a position to monitor passenger safety and, if required, execute a cabin evacuation;
- iv) A suitable method of communication is established between qualified persons in a position to monitor passenger safety and personnel that have responsibility for fueling operations. (GM)

Guidance

The specification in item i) refers to the designation of exits for rapid deplaning or emergency evacuation, which typically considers:

- Aircraft type (e.g.; some aircraft types might require the designation of over-wing exits for an emergency evacuation);
- The method being utilized for passenger boarding and/or deplaning (e.g. boarding bridge, air stairs);
- Exterior or interior obstructions that might render an exit unusable for an emergency evacuation.

The specifications in items i) and ii) refer to obstructions that would render an exit or area outside an exit unusable during an emergency evacuation.

The specification in item iii) refers to the positioning of cabin crew members, or if a cabin crew is not utilized, other persons trained and qualified to monitor passenger safety and execute a rapid deplaning or cabin evacuation. Such persons are typically positioned near the boarding door(s) when a passenger boarding bridge is being utilized or, when a boarding bridge is not in use, in the location(s) most suitable for monitoring the safety of passengers that are embarking, onboard or disembarking the aircraft. Certain aircraft might be small enough to permit a qualified person to monitor the safety of passengers embarking, onboard or disembarking from outside the aircraft.

The specification in item iv) refers to the procedures for establishing a suitable method of communication, which may be initiated by any applicable person. Acceptable procedural methods of initiating and maintaining communication may include one or more of the following:

- The use of the aircraft inter-communication system, or;
- Direct person-to-person contact; or;

- Any other method of communication that ensures the flight crew or other suitably qualified persons are able to expeditiously direct personnel to discontinue fueling operations for any reason.

The specification in item iv) may be fulfilled by a flight crew member or other suitably qualified person when aircraft refueling is conducted or supervised by the flight crew.

FLT 3.9.3 If the Operator conducts passenger flights, and transports passengers that require special attention, the Operator shall have a policy and associated procedures for the acceptance and onboard handling of such passengers. The policy and procedures shall be in accordance with applicable regulations and as a minimum address, as applicable:

- i) Intoxicated and/or abusive passengers;
- ii) Passengers with disabilities or reduced mobility;
- iii) Infants and unaccompanied children;
- iv) Inadmissible passengers;
- v) Deportees;
- vi) Passengers in custody. (GM)

Guidance

The intent of this provision is to ensure an operator provides guidance to the flight crew to address the acceptance or non-acceptance of passengers requiring special attention. Such guidance typically defines the conditions necessary to accept or deny boarding to a passenger.

The specifications in item i) and iv) might require guidance in the OM that addresses the proper use of restraint devices, unless such devices are prohibited by the Authority or their use is impractical due to lack of appropriate crew members.

FLT 3.9.4 If the carriage of weapons onboard an aircraft by law enforcement officers and other authorized persons acting in the performance of their duties is approved by the Operator, State and/or other applicable authorities, the Operator shall have a procedure to ensure the PIC is notified prior to the departure of a flight. Such notification shall include:

- i) The number of authorized armed persons onboard the aircraft;
- ii) The location(s) of such persons, if permitted by the state(s) involved. (GM)

Guidance

The term *applicable authorities* refers to authorities that have jurisdiction over international operations conducted by an operator over the high seas or the territory of a state that is other than the State of the Operator.

FLT 3.9.5 (Intentionally open)

FLT 3.9.6 If the Operator has a De-/Anti-icing Program in accordance with GRH 4.2.1, the Operator shall have De-/Anti-Icing policies and procedures published in the OM or other documents available to the flight crew during flight preparation and accessible to the flight crew during flight. Such policies and procedures shall include:

- i) Holdover Time tables;
- ii) A requirement for a member of the flight crew or qualified ground personnel to perform a visual check of the wings before takeoff, if any contamination is suspected;
- iii) A requirement that takeoff will not commence unless the critical surfaces are clear of any deposits that might adversely affect the performance and/or controllability of the aircraft;
- iv) A statement that delegates authority to the PIC to order De-/Anti-icing whenever deemed necessary. (GM)

Guidance

Refer to the IRM for the definition of *Holdover Time*.

Refer to Guidance associated with GRH 4.2.1 located in ISM Section 6.

Qualified ground personnel specified in item ii) are typically used to perform a visual wing check in instances when the wings are not visible to the flight crew from the interior of the aircraft (e.g., cargo aircraft operations).

The surfaces specified in item iii) include: wings, flight controls, engine inlets, fuselage surfaces in front of engines or other areas defined in the AOM.

FLT 3.9.7 If the Operator *does not* have a De-/Anti-icing Program in accordance with FLT 3.9.6, the Operator shall have guidance published in the OM or other documents available to the flight crew during flight preparation and accessible to the flight crew during flight. Such guidance shall include:

- i) A description of meteorological and other conditions that are conducive to ground aircraft icing and/or the formation of ice on aircraft critical surfaces;
- ii) A prohibition from operating an aircraft from any airport with conditions conducive to ground aircraft icing.

FLT 3.9.8 If the Operator transports dangerous goods, the Operator shall ensure information and guidance that enable the flight crew to carry out duties and responsibilities related to the transport of dangerous goods is published or referenced in the OM and included in the onboard library. Such guidance shall include, as a minimum:

- i) General policies and procedures;
- ii) Duties and responsibilities;
- iii) As applicable, preflight acceptance requirements;
- iv) Flight crew notification requirements;
- v) Dangerous goods incident and/or emergency response procedures. (GM)

Guidance

Refer to the IRM for the definitions of *Dangerous Goods Regulations (DGR)* and *NOTOC (Notification to Captain)*.

An operator, in accordance with requirements of the Authority, typically develops flight crew guidance related to the transport of dangerous goods based on technical information from one or more source reference documents, to include:

- IATA Dangerous Goods Regulations (DGR);
- ICAO Doc.9481 AN/928, Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods;
- An equivalent dangerous goods manual, dangerous goods emergency response guide or other reference document approved or accepted by the Authority for the development of flight crew guidance related to the transportation of dangerous goods by air.

The specification in item iii) refers to procedures and information formulated to assist each applicable flight crew member in performing or directly supervising the acceptance of dangerous goods for transport on an aircraft. This specification is only applicable to flight crew members assigned such responsibilities by the State or the operator.

The specification in item iv) refers to PIC and/or flight crew duties and responsibilities related to the acquisition and review of the NOTOC (Notification to Captain).

FLT 3.9.9 If the Operator *does not* transport dangerous goods, the Operator shall have guidance for the flight crew that includes procedures for response to dangerous goods incidents.

3.10 Airspace Rules

FLT 3.10.1 The Operator shall require all commercial flights to be conducted under an IFR Flight Plan and in accordance with an IFR clearance. (GM)

Guidance

Refer to the IRM for the definition of *Instrument Flight Rules (IFR)* and *Visual Flight Rules (VFR)*.

The intent of this provision is for an operator to file an IFR flight plan with the appropriate ATS unit and obtain an IFR clearance in order to ensure its flights are afforded all of the air traffic services applicable to aircraft operating under IFR within controlled airspace. Such services typically include:

- Maintenance of minimum separation standards;
- Traffic advisory information;
- Terrain or obstruction alerting;
- Low altitude alerting;
- Strategic route planning;
- Automatic flight plan closure at airports with functioning control towers.

The specifications of this provision do not preclude an operator from:

- Operating certain portions of a commercial flight under VFR (visual flight rules) as specified in FLT 3.10.2;
- Where possible, identifying portions of flights to be flown under VFR, as permissible in accordance with FLT 3.10.2, on the ATS flight plan (in lieu of filing a purely IFR Flight Plan);
- Operating non-commercial flights (e.g. maintenance, repositioning flights) under VFR.

FLT 3.10.2 If the Operator is authorized to conduct certain portions of a commercial flight under VFR, the Operator shall have a policy and procedures that:

- i) Specify the type of flight plan to be filed with the appropriate ATS unit;
- ii) Specify how an IFR Clearance is to be obtained (departures) and/or cancelled (arrivals);
- iii) Require current meteorological reports or a combination of current reports and forecasts to indicate that meteorological conditions along the portion of the flight to be flown under the visual flight rules will, at the appropriate time, be such as to render compliance with these rules possible. (GM)

Guidance

The intent of this provision is to ensure certain operations under VFR are practicable under anticipated meteorological conditions. It also affords the Operator some latitude in obtaining an IFR clearance or closing an IFR flight plan when originating or terminating a flight. Such latitude is typically required when flights that have filed an IFR Flight Plan depart from uncontrolled airports, transit uncontrolled airspace and/or arrive at uncontrolled airports or airports without an operating control tower.

The specification in item i) refers to the type of flight plan to be filed in instances where certain portions of a flight will be conducted under VFR. In some cases it may be possible to identify VFR portions in a predominantly IFR flight plan (e.g. X and Y designation on an ICAO flight plan). In other cases, an IFR Flight Plan must be filed for all flights and an instrument clearance obtained or cancelled en route.

FLT 3.10.3 The Operator shall have guidance that addresses the use of standard radio phraseology when communicating with ATC. Such guidance shall include, as a minimum, instructions for:

- i) Clearance acceptance and read-back;
- ii) Use of call sign.

FLT 3.10.4 The Operator shall have guidance that addresses the acceptance of ATC clearances and, when necessary, the clarification of such clearances to ensure understanding. Such guidance shall include, as a minimum:

- i) A requirement for at least two flight crew members to monitor and confirm clearances to ensure a mutual (flight crew) understanding of clearances accepted;
 - a) In areas of high terrain;
 - b) That include heading, altitude/flight level, frequency, route/waypoint changes;
 - c) That include instructions for holding short of a runway.
- ii) A requirement to clarify clearances with ATC whenever any flight crew member is in doubt regarding the clearance or instruction received. (GM)

Guidance

The intent of this provision is for an operator to have policies and procedures that ensure ATC clearances are clearly understood during times of increased operational risk.

FLT 3.10.5 The Operator shall have guidance that requires the flight crew to maintain a radio listening watch on the frequencies appropriate for the area of operation and as required by the applicable authorities. Such guidance shall include, as a minimum, an additional requirement for the flight crew to monitor:

- i) VHF emergency frequency (121.5MHz);
 - a) On long-range over-water flights or on flights that require the carriage of an emergency locator transmitter (ELT), except during those periods when aircraft are carrying out communications on other VHF channels, or when airborne equipment limitations or flight deck duties do not permit simultaneous guarding of two channels;
 - b) If required by the applicable authorities, in areas or over routes where the possibility of military intercept or other hazardous situations exist.
- ii) If required by the applicable authorities, the appropriate common frequency used for in-flight communication in designated airspace without ATC coverage. (GM)

Guidance

Refer to the IRM for definitions of *In Flight Broadcast Procedures (IFBP)*, *Selective Calling (SELCAL)* and *Satellite Communications (SATCOM)*.

The intent of this provision is to ensure flight crews maintain a radio listening watch on those VHF and/or HF frequencies that are appropriate for the area of operation and are in accordance with the requirements of the applicable authorities.

The specification in item ii) refers to the monitoring of the In Flight Broadcast Procedures (IFBP) frequency in areas of the world where such procedures are required.

The use of SELCAL or SATCOM could relieve the radio listening watch responsibility of this provision, but not the requirement for VHF emergency and/or IFBP frequency monitoring.

Applicable authorities include those authorities that have jurisdiction over international operations conducted by an operator over the high seas or the territory of a state that is other than the State of the Operator.

FLT 3.10.6 The Operator shall have procedures and limitations that address operations into and out of uncontrolled airspace and/or airports, to include, if applicable, a prohibition if such operations are not permitted in accordance with restrictions of the AOC or equivalent documents. (GM)

Guidance

The intent of this provision is to ensure procedures and limitations address operations in uncontrolled airspace or at uncontrolled airports, and include a prohibition for such operations if not authorized by either the Authority or the operator.

An uncontrolled airport is an airport without an operating control tower.

A controlled airport is an airport with a manned and operating control tower surrounded by controlled airspace.

Procedures and limitations typically include aircraft position radio broadcast procedures, VFR weather requirements and the ability to receive ATC clearance within a specified time/distance from the departure airport.

FLT 3.10.7 The Operator shall have guidance that enables the flight crew to determine differences in rules and procedures for any airspace of intended use, to include, as a minimum, an explanation of the differences between prevailing or local airspace rules and ICAO airspace rules, where applicable. (GM)

Guidance

The specification of this provision ensures flight crews that operate in airspace(s) with different rules have those differences explained in the OM.

Airspace(s) of intended use typically includes ICAO, FAA, State or any other local airspace subject to the operations of the operator.

3.11 In-flight Operations

Navigation

FLT 3.11.1 The Operator shall have guidance that includes a description of flight crew duties and responsibilities, and procedures for monitoring navigation performance and verifying present position. (GM)

Guidance

There are various means to verify navigation accuracy, including RNP/ANP, "High Accuracy" FMS alerts, navigation radio accuracy checks (radial/DME).

FLT 3.11.2 If applicable, the Operator shall have guidance that includes procedures to ensure navigation accuracy is checked prior to an approach and after prolonged in-flight operation. (GM)

Guidance

Prolonged operation may be defined by the operator or manufacturer and refers to navigation systems with accuracy that could degrade over time or are affected by the presence of external navigation aids.

The specifications of this provision may be satisfied by guidance that describes flight crew actions related to Flight Management Computer (FMC) automated navigational accuracy messages (e.g., UNABLE REQD NAV PERF or equivalent).

FLT 3.11.3 The Operator shall have a collision avoidance policy that encourages the flight crew to maintain vigilance for conflicting visual traffic ("see and avoid"). (GM)

Guidance

This policy complements TCAS avoidance procedures.

FLT 3.11.4 The Operator shall have guidance that specifies when descent below any applicable prescribed minimum altitude is permissible. (GM)

Guidance

Minimum prescribed safety altitudes typically include:

- Minimum Safety Altitude (MSA);
- Minimum Descent Altitude/Height (MDA/H);
- Minimum En route Altitude (MEA);
- Minimum Obstruction Clearance Altitude (MOCA);
- Minimum Off-Route Altitude (MORA);
- Minimum Vectoring Altitude (MVA);
- Any other minimum altitudes prescribed by the Authority.

FLT 3.11.5 The Operator shall have guidance that requires flight crews to monitor weather information during the en route phase of flight, to include current weather and forecasts, as applicable, for:

- i) Destination airport;
- ii) Destination alternate airport(s), if applicable;
- iii) If applicable, en route alternate airports(s).

FLT 3.11.6 The Operator shall have guidance and procedures to ensure flight crews monitor flight time and fuel burn for the purposes of identifying trends and for comparison to the OFP. (GM)

Guidance

The specifications of this provision ensure fuel and time trends are monitored and compared against the OFP.

Such guidance and procedures address or include:

- An interval, in accordance with operator and/or State requirements, for the flight crew to record on the OFP the fuel quantity and time over waypoints;
- A description of any equivalent means for monitoring flight progress and/or recording the fuel quantity over waypoints.

Equivalent means of recording fuel and time data include FMS, ACARS or other automated methods for recording data.

FLT 3.11.7 The Operator shall have guidance that requires the PIC to monitor fuel during flight to ensure a fuel quantity upon landing that is not less than the greater of:

- i) The minimum quantity prescribed by the Authority;
- ii) A quantity required to fly for 30 minutes under speed and altitude conditions specified by the Operator or the Authority. (GM)

Guidance

Approved minimum quantity is a quantity of fuel established by the operator or Authority.

Refer to FLT 3.14.15 for actions to be taken in the event in-flight fuel quantity falls below the minimum fuel specified in this provision.

FLT 3.11.8 If the Operator is certified to conduct RVSM and/or RNP operations, the Operator shall have guidance that includes procedures to ensure the proper conduct of such operations, to include, as a minimum:

- i) Required ground and airborne equipment;
- ii) Operating limitations and procedures;
- iii) Crew qualifications;
- iv) As applicable, operating minima. (GM)

Guidance

Refer to the IRM for the definitions of *Reduced Vertical Separation Minima (RVSM)* and *Required Navigation Performance (RNP)*.

FLT 3.11.9 If authorized to conduct low visibility operations, the Operator shall have guidance to ensure the proper conduct of such operations. Such guidance shall include, as a minimum:

- i) Required ground and airborne equipment;
- ii) Operating limitations and procedures;
- iii) Crew qualifications;
- iv) Operating minima (RVR). (GM)

Guidance

Refer to IRM for the definition of *Low Visibility Operations*.

Operating limitations typically include crosswinds, runway condition and aircraft equipment capability.

FLT 3.11.10 If the operator conducts ETOPS, the Operator shall have guidance that includes:

- i) Procedures to ensure proper conduct of such operations;
- ii) A requirement for flight crews to monitor weather information for ETOPS alternate(s) during the en route phase of a flight.

FLT 3.11.11 If the Operator engages in specialized navigation (MNPS, AMU), the Operator shall have guidance that includes procedures to ensure the proper conduct of such operations, to include, as a minimum:

- i) Required ground and airborne equipment;
- ii) Operating limitations and procedures;
- iii) Crew qualifications. (GM)

Guidance

Refer to the IRM for the definition of *Minimum Navigation Performance Specifications (MNPS)*.

FLT 3.11.12 – 3.11.15 (Intentionally Open)

Flight Management and General Procedures

FLT 3.11.16 The Operator shall publish Crew Resource Management (CRM) principles in the OM or in other documentation available to the flight crew and have a requirement in the OM for the application of such principles by the flight crew during line operations.

FLT 3.11.17 The Operator shall have a policy and procedures that define a sterile flight deck during critical phases of flight, to include:

- i) A protocol for intra-flight deck communication;
- ii) If the Operator conducts passenger flights with cabin crew, a protocol for communication between the flight crew and cabin crew;
- iii) The mandatory use of headsets and boom microphones for communication with ATC;
- iv) A restriction of flight crew activities to essential operational matters. (GM)

Guidance

Refer to the IRM for the definition of *Sterile Flight Deck and Critical Phase of Flight*.

The specifications of this provision require an operator to ensure the OM defines the specific phases of flight when the operational state of the flight deck is to be “sterile.”

FLT 3.11.18 The Operator shall have a task sharing policy and guidance that defines and addresses the division of duties related to flight crew member operational tasks, to include, as a minimum:

- i) The use of checklists;
- ii) PNF/PF duties for all phases of flight;
- iii) PNF/PF actions during manual and automatic flight. (GM)

Guidance

Refer to the IRM for the definitions of *Pilot Not Flying (PNF)* and *Pilot Flying (PF)*.

The term Pilot Monitoring (PM) may be substituted for the term Pilot Not Flying (PNF) for the purpose of applying the specifications of this provision.

Task sharing is observed during most phases of flight and address areas, such as:

- Philosophy for the use of checklists;
- Performance calculations;
- Automated flight procedures for flight crew;
- Manual flight procedures for flight crew;
- Flight crew briefings;
- Administrative duties at the appropriate times (such as top of descent and prior to commencing approach).

FLT 3.11.19 The Operator shall have procedures that require the use of checklists by the flight crew prior to, during and after all phases of flight operations, and in abnormal and emergency situations, to ensure compliance with:

- i) Procedures contained in the OM;
- ii) Provisions of the aircraft certificate of airworthiness. (GM)

Guidance

The intent of this provision is to ensure flight crew compliance with all applicable checklists contained in the AOM, MEL and CDL.

FLT 3.11.20 The Operator shall have a policy and procedures that require flight crew members to crosscheck and confirm critical actions, to include:

- i) Aircraft configuration changes (landing gear, wing flaps, speedbrakes);
- ii) Altimeter bug and airspeed bug settings, as applicable;
- iii) Altimeter subscale settings;
- iv) Altitude (window) selections;
- v) Transfer of control of the aircraft;
- vi) Changes to the Automated Flight System (AFS)/Flight Management System (FMS) and radio navigation aids during the departure and or approach phases of flight;
- vii) Weight/mass and balance calculations and associated AFS/FMS entries;
- viii) Performance calculations or inputs, including AFS/FMS entries. (GM)

Guidance

The specification in item iii) refers to the barometric pressure setting to which altitude is referenced.

FLT 3.11.21 The Operator shall have a policy and procedures that define and specify the requirements for standardized verbal callouts (standard callouts) by the flight crew during each phase of flight. (GM)

Guidance

Refer to the IRM for the definition of *Standard Callout*.

Standard callouts are used to improve crosscheck, coordination and mutual crew member awareness and are typically used to:

- Give commands, delegate a task;
- Acknowledge a command or confirm receipt of an information;
- Challenge and respond to checklist items;
- Call a change of an indication;
- Identify a specific event;
- Identify exceedences.

A silent flight deck philosophy typically limits verbal callouts to the identification of exceedences and other items as determined by the operator.

FLT 3.11.22 The Operator shall have an automation policy with associated guidance and procedures that address the use of aircraft automated flight and navigation systems, to include:

- i) Flight crew monitoring of the automated flight and navigation systems (AFS) to ensure appropriate aircraft response to inputs by:
 - a) Cross-checking mode control panel status;
 - b) Observing the results of any mode changes;
 - c) Supervising the resulting guidance and aircraft response.
- ii) The use of a level of automation appropriate for the task, to include manual flight when aircraft response is not appropriate or adequate.

FLT 3.11.23 The Operator shall have guidance that defines and specifies the requirements for the conduct and content of the briefing to be accomplished by the flight crew prior to any departure and approach. Such briefing shall address and include, as a minimum:

- i) The technical status of the aircraft unless reviewed in conjunction with another checklist or procedure;
- ii) Normal and non-normal departure and approach considerations;
- iii) A flight deck jump seat occupant briefing. (GM)

Guidance

Refer to the IRM for the definition of *Jump Seat*.

Normal and non-normal departure and approach considerations include, as appropriate for each phase and each flight:

- Fuel status;
- Airport/taxi diagrams;
- Weather;
- NOTAMS;

- Low visibility procedures;
- Departure/approach charts;
- Minimum safe altitudes and terrain;
- Use of automation;
- Takeoff/landing (flaps, autobrakes and stopping distances);
- Missed approach/go-around and alternates;
- Special conditions and operations (e.g., crew familiarization with the route or airport flow, hazardous materials, environmental, non-standard noise abatement, etc.).

Non-normal departure/approach considerations include items, such as: engine-out procedures, mountainous terrain or airspace constraints.

Briefings can be structured in order to encourage crew member feedback/participation.

FLT 3.11.24 – 3.11.27 (Intentionally open)

Altitude Awareness and Altimetry

FLT 3.11.28 The Operator shall have policies, procedures and guidance that address altitude awareness, to include:

- i) Instructions for the use of automated or verbal flight crew altitude callouts and any other actions to be taken by the flight crew to maintain altitude awareness;
- ii) Policies and/or procedures for the avoidance of altitude deviations;
- iii) Policies and/or procedures that address call sign confusion during altitude clearance acceptance and readback;
- iv) Instructions for the flight crew to report the cleared flight level on first contact with ATC, unless specifically requested not to do so by ATC. (GM)

Guidance

Refer to the IRM for the definition of *Altitude Deviation*.

The intent of this provision is for the operator to provide policies, procedures and guidance in the OM designed to manage or mitigate potential risks related to the acceptance and maintenance of assigned altitudes.

As an example, OM guidance to address altitude awareness can include instructions for:

- A crosscheck that the assigned altitude is above the minimum safe altitude;
- "1000 to go" standard callout;
- Dual pilot response for ATC altitude clearance;
- "Double point" to altitude window (both pilots physically point to and confirm the new altitude set).

FLT 3.11.29 The Operator shall have guidance and procedures that include instructions for the use of barometric altimeter reference settings appropriate for the area of operation (QNE, QFE, QNH). (GM)

Guidance

Refer to the IRM for the definition of *Altimeter Reference Setting*, which includes definitions for QNE, QFE and QNH.

FLT 3.11.30 The Operator *should* have guidance and procedures that include a requirement for barometric altimeters, referenced to QNH, to be used as the sole barometric altitude reference for the takeoff, approach and landing phases of flight.

FLT 3.11.31 If the Operator engages in operations that require metric/imperial (ft) conversions for barometric altimeter readings, the Operator shall have guidance and procedures that ensure the proper computation and application of such conversions. (GM)

Guidance

The operator may provide tables, charts or other means for completing the required conversion.

FLT 3.11.32 The Operator shall have guidance that enables the flight crew to correct for potential errors in altimetry and addresses:

- i) The effects of Outside Air Temperature (OAT) that is significantly lower than standard temperature;
- ii) Maximum allowable barometric altimeter errors:
 - a) Referenced to field elevation;
 - b) Compared to other altimeters;
 - c) Required to meet RVSM limitations. (GM)

Guidance

The intent of this provision is to ensure that potential errors in altimetry are identified and corrected when necessary.

The specification in item i) refers to temperature compensation corrections applied to ensure obstacle clearance in conditions of extreme cold (typically starting at -10 C). Such corrections may be applied manually by the flight crew (e.g. temperature correction charts) or automatically by onboard systems (e.g. Air Data Computer)

The operator may provide tables, charts or other means to address potential errors in altimetry.

FLT 3.11.33 – 3.11.37 (Intentionally open)

Weather and Environment

FLT 3.11.38 The Operator shall have policies and procedures for operations in the proximity of adverse weather and/or environmental conditions to include:

- i) Thunderstorms;
- ii) Turbulence;
- iii) Contaminated runways, including the effect of type and depth of contaminants on performance;
- iv) Cold weather;
- v) Volcanic ash, if the Operator conducts operations near volcanic ash. (GM)

Guidance

The intent of this provision is to ensure flight crew members have access to policies and procedures associated with the adverse weather or environmental conditions they might encounter in operations.

FLT 3.11.39 The Operator shall have guidance that includes policies and procedures for:

- i) Windshear avoidance;
- ii) Windshear encounter recovery;
- iii) As applicable, response to predictive and/or reactive alerts. (GM)

Guidance

Refer to the IRM for the definition of *Airborne Windshear Warning System*, which includes definitions for *Predictive Alert* and *Reactive Alert*.

FLT 3.11.40 The Operator shall have guidance that addresses wake turbulence, to include procedures for encounter avoidance. (GM)

Guidance

Refer to the IRM for the definition of *Wake Turbulence*.

FLT 3.11.41 – 3.11.45 (Intentionally open)

Limitations and Performance

FLT 3.11.46 The Operator shall provide, and require compliance with, operating limitations, as defined by the original equipment manufacturer (OEM) and established by the State of Registry for each aircraft type used in operations.

FLT 3.11.47 The Operator shall have wind component limitations for takeoff, approach and landing that do not exceed the values demonstrated or recommended by the OEM and also address operations when the:

- i) Runway is contaminated;
- ii) Visibility is degraded;
- iii) Aircraft stopping capability is degraded. (GM)

Guidance

The intent of this provision is to ensure the operator provides wind component limitations for the phases of flight specified in the body of the provision (e.g. maximum crosswind component for landing). Additionally, the provision ensures the operator provides wind component limitations under the conditions specified in the sub-specifications (e.g. maximum crosswind component for landing on a contaminated runway). In either case such values cannot exceed those demonstrated or recommended by the OEM.

Contaminated runways are typically defined by a specific contaminant type/depth or equivalent braking action report.

FLT 3.11.48 The Operator shall have guidance that specifies a minimum aircraft height above ground level (AGL) or above airport level (AAL) for commencing a turn after takeoff. (GM)

Guidance

Values typically vary depending on the operator, or could include exceptions covering special airport operations.

FLT 3.11.49 The Operator shall have guidance for the use of oxygen masks, to include a requirement for the flight crew to use supplemental oxygen whenever, **either**:

- i) The cabin altitude exceeds 10,000 feet or the cabin atmospheric pressure is less than 700 hPa, **or**
- ii) If permitted by the State and applicable authorities, the cabin altitude exceeds 10,000 ft or the cabin atmospheric pressure is less than 700 hPa for a period in excess of 30 minutes and for any period the cabin altitude exceeds 13, 000 ft. or the cabin atmospheric pressure is less than 620 hPa. (GM)

Guidance

Applicable authorities include those authorities that have jurisdiction over international operations conducted by an operator over the high seas or the territory of a state that is other than the State of the Operator.

FLT 3.11.50 The Operator shall have guidance that requires flight crews, when operating an aircraft at low heights AGL, to restrict rates of descent for the purposes of reducing terrain closure

rate and increasing recognition/response time in the event of an unintentional conflict with terrain. (GM)

Guidance

The intent of this provision is to preclude CFIT situations when a crew, operating an aircraft at high rates of descent and temporarily distracted from altitude monitoring by unexpected events, would not have:

- Sufficient recognition or alert time to realize that terrain is rapidly approaching or;
- Sufficient response time to accomplish an aircraft escape maneuver once potential terrain conflict is recognized.

The low heights AGL specified in this provision are those altitudes where high descent rates can result in excessive rates of terrain closure.

Stabilized approach criteria provide conformance with the specifications of this provision for the approach phase of flight only. The specifications of this provision also require descent rate guidance be provided for other descents where terrain closure rate could significantly reduce recognition and response time.

The description of GPWS sink rate mode does not address the specifications of this provision.

FLT 3.11.51 The Operator shall have guidance and applicable data to enable the flight crew to determine or compute aircraft performance for all phases of the flight. (GM)

Guidance

The specifications of this provision may be satisfied by an automated or electronic means described in the OM.

FLT 3.11.52 The Operator shall have guidance that addresses the use of flight data recorders (FDR) and cockpit voice recorders (CVR) to ensure the:

- i) FDR is never intentionally switched off by the flight crew;
- ii) CVR is not intentionally switched off, unless required to preserve CVR data after an accident or serious incident. (GM)

Guidance

Refer to the IRM for the definitions of *Flight Data Recorder (FDR)*, *Cockpit Voice Recorder (CVR)*, *Accident*, *Incident* and *Serious Incident*.

The definition of accident, incident or serious incident could vary according to the state.

FLT 3.11.53 – 3.11.57 (Intentionally open)

Approach and Landing

FLT 3.11.58 The Operator shall have guidance and procedures that enable the flight crew to determine the conditions required to commence or continue an approach to a landing, to include, as a minimum:

- i) Crew qualification requirements;
- ii) Onboard equipment requirements;
- iii) Ground based equipment requirements;
- iv) Operating minima.

FLT 3.11.59 The Operator shall have a stabilized approach policy with associated guidance, criteria and procedures to ensure the conduct of stabilized approaches. Such policy shall specify:

- i) A minimum height for stabilization not less than 1000 feet AAL for approaches in IMC or not less than 500 ft. AAL for approaches in IMC as designated by the operator and/or State where a lower stabilization height is operationally required;
- ii) A minimum height for stabilization not less than 500 feet AAL for approaches in VMC;
- iii) Aircraft configuration requirements specific to each aircraft type (landing gear, wing flaps, speedbrakes);
- iv) Speed and thrust limitations;
- v) Vertical speed limitations;
- vi) Acceptable vertical and lateral displacement from the normal approach path. (GM)

Guidance

Refer to the IRM for the definition of *Flight Data Analysis (FDA) Program*.

The intent of this provision is for the operator to develop stabilized approach policy, guidance, criteria and procedures that ensure the maintenance of the intended flight path during visual approaches and/or as depicted in published approach procedures without excessive maneuvering. The parameters to be considered in the definition of a stabilized approach are listed in the body of the provision.

The specifications in item i) permit an operator, in accordance with operational requirements approved or accepted by the Authority, to establish stabilization heights lower than 1000 ft. AAL, but no lower than 500 ft. AAL (IMC or VMC), for approaches designated by the operator and/or State where:

- Lower minimum approach stabilization heights are authorized for turbo-propeller aircraft operations (e.g., 500 feet AAL on VMC/IMC approaches), **and/or**
- Maneuvering at a lower height AAL is required to meet instrument or other charted approach constraints (e.g. RNAV/RNP approaches and charted visual approaches), **and/or**
- Aircraft are required to comply with ATC speed constraints on final approach, **and/or**
- Deviations from approach stabilization criteria at a height lower than 1000 feet AAL, but above 500 feet AAL, are operationally required, and the operator can demonstrate pilot adherence to its stabilized approach policy via a continually monitored, managed and active flight data analysis (FDA) program.

FLT 3.11.60 The Operator shall have a policy that requires the flight crew to execute a missed approach or go-around if the aircraft is not stabilized in accordance with criteria established by the Operator. (GM)

Guidance

The intent of this provision is for an operator to designate a minimum altitude(s) at which a go-around must be accomplished if the aircraft is not stabilized in accordance with the Operator's stabilization criteria.

FLT 3.11.61 The Operator shall have a policy and procedures to ensure the flight crew maneuvers the aircraft so as to touchdown within the touchdown zone or other defined portion of the runway, as specified by the Operator or the Authority. (GM)

Guidance

The definition of the touchdown zone could vary, depending on the operator.

FLT 3.11.62 The Operator shall have a policy and procedures to ensure the flight crew will not continue an instrument approach to land at any airport beyond a point at which the limits of the operating minima specified for the approach in use would be infringed.

FLT 3.11.63 The Operator shall have a policy and procedures to ensure the flight crew will not continue an instrument approach beyond a designated point in the approach unless reported visibility, weather conditions or controlling RVR are equal to or above those specified for the approach in use. (GM)

Guidance

Designated points in the approach can be defined by the operator or applicable authority (e.g. final approach fix, outer marker, established on final approach segment).

Applicable authorities include those authorities that have jurisdiction over international operations conducted by an operator over the high seas or the territory of a state that is other than the State of the Operator.

FLT 3.11.64 The Operator shall have guidance and procedures for the acceptance of a clearance for a visual approach and the conduct of a visual approach.

FLT 3.11.65 The Operator shall have guidance, criteria, and procedures for the acceptance of a clearance for a non-ILS (including non-precision) approach and the conduct of such approach, to include:

- i) Minimum weather conditions and visibility required to continue an approach;
- ii) Operating conditions that require a missed approach to be initiated;
- iii) Circling approach minima;
- iv) Approach-related duties of the PF and PNF. (GM)

Guidance

Refer to the IRM for the definitions of *Pilot Not Flying (PNF)* and *Pilot Flying (PF)*.

The term Pilot Monitoring (PM) may be substituted for the term Pilot Not Flying (PNF) for the purpose of applying the specifications of this provision.

FLT 3.11.66 The Operator shall have a policy and procedures that require and ensure the proper use of a stabilized constant descent profile during the final segment of a non-ILS (including non-precision) approach. (GM)

Guidance

Constant descent profiles during the final segment of an approach might be accomplished by various means to include:

- Vertical Navigation (V-NAV);
- Flight Path Angle (FPA);
- Constant Path Angle (CPA);
- Constant Angle Non-Precision Approaches (CANPA);
- Other methods that provide a stabilized constant path angle for the final segment of a non-ILS approach.

FLT 3.11.67 The Operator shall have guidance, criteria and procedures for the acceptance of a clearance for an ILS approach and the conduct of any authorized ILS approach, to include:

- i) Minimum weather conditions and visibility required to continue an approach;
- ii) Operating conditions that require a missed approach to be initiated. (GM)

Guidance

The specifications of the provision refer to ILS approaches authorized by the AOC (e.g., CAT I, II, III)

FLT 3.11.68 The Operator *should* have guidance that requires the flight crew to assess landing performance prior to arrival at the destination or alternate airport in order to determine that sufficient landing distance exists for a landing to be accomplished with an adequate safety margin:

- i) On the runway of intended use;
- ii) In the conditions existing at the estimated time of arrival (ETA);
- iii) In the aircraft configuration and with the means of deceleration that will be used for the landing. (GM)

Guidance

The intent of this provision is for an operator to require a landing performance assessment under conditions distinct from those presumed at time of dispatch. Such an assessment ensures adequate landing performance under the conditions existing at the ETA, and when necessary enables the flight crew to make the determination that a landing cannot be accomplished with an appropriate safety margin.

This provision is not intended to preclude the flight crew from determining the absolute landing capability of the aircraft during emergencies or abnormal configurations. In these circumstances, the pilot must calculate and know the actual landing performance capability of the aircraft (without an added safety margin).

An appropriate safety margin may be defined by the operator or the Authority, and can be expressed as a fixed distance increment or a percentage increase beyond the actual landing distance required.

Factors that may affect landing performance include, but are not limited to:

- Runway contaminants;
- Runway cutback or reduced runway available;
- Environmental conditions at the ETA (crosswind, wind gusts, rain, etc);
- Aircraft equipment outages;
- Flight control malfunctions, engine failures, or other non-normal/emergency events that may affect landing distance;
- Flap setting to be used;
- The use of manual vs. auto-brakes (if available);
- The use of manual vs. auto speed brakes (if available);
- The use/availability of reverse thrust;
- The use of automatic approach and landing (if available);
- Any other event or contingency that degrades stopping ability or increases landing distance under the conditions present at the ETA.

3.12 Flight Deck Policy and Procedures

FLT 3.12.1 The operator shall have a corrective lenses policy that is in accordance with the requirements of the State and addresses the need for flight crew members requiring the use of corrective lenses to have a spare set readily available. (GM)

Guidance

Corrective lens requirements are typically listed on a medical certificate or license issued by the State.

FLT 3.12.2 The Operator shall have a policy that requires flight crew members to keep their seat belts fastened when at their assigned stations and:

- i) Those flight crew members occupying a pilot's seat to keep their safety harnesses (shoulder straps and seat belts) fastened during the takeoff and landing phases of flight;
- ii) Other flight crew members to keep their safety harnesses fastened during the takeoff and landing phases of flight, unless the shoulder straps interfere with the performance of duties, in which case the shoulder straps may be unfastened but the seat belts shall remain fastened.

FLT 3.12.3 The Operator shall have a policy and procedures to ensure, during flight, when a pilot transfers control of the aircraft or leaves the flight deck, a minimum of one pilot continuously maintains:

- i) Unobstructed access to the flight controls;
- ii) Alertness and situational awareness. (GM)

Guidance

The specifications of this provision apply when transfer of control occurs during en route crew changes or in conjunction with a pilot leaving the flight deck in the performance of duties or to meet physiological needs.

FLT 3.12.4 The Operator shall have a policy and procedures to ensure flight crew members are only permitted to leave their duty stations during flight in the performance of duties or to meet physiological needs. (GM)

Guidance

The specifications of this provision do not apply to crew changes that occur in conjunction with relief and/or augmented crews.

FLT 3.12.5 The Operator shall have a policy and procedures to ensure pilot flight crew members do not vacate an aircraft control seat below 10,000 feet (AFE/AAL) for the purposes of transferring duties to another pilot flight crew member. (GM)

Guidance

The specifications of this provision refer to the transfer of duties associated with augmented crews or crews with multiple pilot flight crew members.

FLT 3.12.6 (Intentionally open)

FLT 3.12.7 The Operator *should* have guidance that addresses runway incursions, to include a description of the flight crew duties, responsibilities, procedures and any other flight crew actions necessary to prevent, or reduce the risk of, a runway incursion occurring during taxi, takeoff, and landing. Such guidance *should* include:

- i) Instructions for the maintenance of situational awareness by the flight crew while operating in the airport environment, on the ground and in the air, to ensure an awareness of the aircraft position relative to the airport surface;
- ii) Operating policies and procedures for use during periods when there is a high risk of an incursion;
- iii) Specific instructions for the use of onboard equipment and aircraft lighting as a means to mitigate the risk of an incursion;
- iv) The identification, in documentation available to the flight crew, of areas on the airport surface that could pose a higher risk of an incursion;
- v) Specific low visibility policies and procedures that minimize the risk of an incursion. (GM)

Guidance

The intent of this provision is for an operator to ensure the OM incorporates an error mitigation strategy for reducing the risk of a runway incursion occurring during taxi, takeoff, and landing. Such error mitigation strategy would address each of the elements specified in this provision.

The specification in item i) refers to instructions that typically address:

- The use of all available resources (heading indicators, airport diagrams, airport signs, markings lighting and air traffic control) to keep an aircraft on its assigned flight and/or taxi route;
- Reference to the airport diagram and airport signage;
- Taxi progress monitoring and/or verbal call-outs after taxiway passage;
- The development and/or discussion of a pre-taxi plan and taxi route briefing;
- The transcription of complex ATC taxi instructions;
- Methods for maintaining situational awareness at night and during times of reduced visibility;
- Not stopping on a runway and, if possible, taxiing off an active runway and then initiating communications with ATC to regain orientation;
- Visually clearing the final approach path prior to taxiing into the takeoff position on the runway.

The specification in item ii) refers to operating policies and procedures that typically address:

- Managing flight crew workload prior to takeoff and before landing;
- Procedures for deferring administrative tasks until non-critical phases of flight;
- Identifying checklist items that must be re-accomplished in the event of a runway change;
- Maintaining a “Sterile Flight Deck;”
- The use of standard R/T phraseology;
- Clearance read-back and confirmation of changes;
- Monitoring clearances given to other aircraft;
- Obtaining directions or progressive taxi instructions when taxi route in doubt;
- Takeoff and landing runway verification and crosscheck;
- Takeoff and landing clearance verification;
- Questioning clearances when holding or lined up in position for takeoff on the runway, and takeoff clearance has not been received within a specified period of time.

The specification in item iii) refers to instructions that typically address:

- Use of aircraft of lighting during taxi, runway crossing, takeoff, and landing;
- Appropriate transponder use at airports with ground surveillance radar;
- Appropriate use of TCAS when on the runway and holding in the takeoff position (e.g. center mode on Navigation Display to display traffic on final approach).

The specification in item iv) refers to areas on the airport that could be identified through:

- Delineation of potential incursion areas or points (i.e. hot spots) on airport diagrams;
- Use of operator data collection programs to identify potential incursion areas in other documentation available to the flight crew;
- The presence of Land and Hold Short Operations (LAHSO).

The specification in item v) refers to the provision of low visibility policies and procedures such as:

- A recommendation that checklists be suspended or delayed until the aircraft is stopped;
- CAT II/III Surface Movement Guidance System (SMGS) procedures.

An operator, in accordance with requirements of the Authority, typically develops flight crew guidance related to the prevention of runway incursions from one or more source reference documents, to include:

- UK Civil Aviation Authority, Safety Regulation Group, Flight Operations Department Communication 25/2004;
- FAA Advisory Circular AC No: 120-74A;
- Runway Safety; A Pilot's Guide to Safe Surface Operations, Second Edition published by FAA Air Traffic Organization (ATO), Office of Safety Services;
- Communications; A key Component of Safe Surface Operations, Second Edition published by FAA Air Traffic Organization (ATO), Office of Safety Services;
- Any equivalent reference document approved or accepted by the Authority for the development of flight crew guidance related to the prevention of runway incursions.

3.13 Flight Deck, Passenger Cabin, Supernumerary Compartment Coordination

FLT 3.13.1 (Intentionally open)

FLT 3.13.2 The Operator shall have guidance that defines persons authorized to use flight deck jump seat(s). Such guidance shall, if applicable, be in accordance with the requirements of the Authority.

FLT 3.13.3 <PA> If the Operator conducts passenger flights with cabin crew, the Operator shall have procedures for communication and coordination between the flight crew and the cabin crew to ensure a combined and coordinated process in addressing:

- i) Passenger safety information;
- ii) Cabin readiness prior to first aircraft movement, takeoff and landing;
- iii) If applicable, arming or disarming of cabin entry door slides;
- iv) Preparation for an encounter with turbulence;
- v) Flight or cabin crew member incapacitation;
- vi) Emergency evacuation;
- vii) Abnormal situations;
- viii) Emergency situations. (GM)

Guidance

Refer to the Guidance associated with CAB 3.3.3 located in ISM Section 5.

Communication and coordination may be verbal or accomplished by an alternative means (e.g., chimes, lights).

Cabin crew coordination briefings could include sterile flight deck, security issues, aircraft technical issues affecting cabin service, en route weather, use of seat-belt sign, meal service.

Procedures defining communication/coordination could be part of specific non-normal/emergency procedures.

First aircraft movement as specified in item ii) is defined as pushback, powerback and/or taxi.

The operator may specify non-communication phases during critical phases of flight (e.g., during the takeoff roll or landing).

Refer to FLT 3.13.4 for operations that do not utilize cabin crew members.

FLT 3.13.4 If the Operator transports passengers and/or supernumeraries, and does *not* use a cabin crew, the Operator shall have procedures for communication by the flight crew with, as applicable, passengers and/or supernumeraries to address:

- i) The dissemination of passenger safety information;
- ii) Cabin or supernumerary compartment readiness prior to first aircraft movement, takeoff and landing;
- iii) If applicable, the arming or disarming of door slides;
- iv) Preparation for and an encounter with turbulence;
- v) Medical situations;
- vi) Emergency evacuation;
- vii) Abnormal situations;
- viii) Verification that baggage is stowed;
- ix) If applicable, verification that the 9G rigid barrier or cargo net is secured. (GM)

Guidance

The intent of this provision is to ensure communication and coordination with passengers, and/or supernumeraries to address relevant safety subjects (e.g., sterile flight deck, security, aircraft technical issues, flight crew incapacitation, cabin depressurization, onboard fire, emergency evacuation, forced landing, ditching, etc.)

The specification in item iii) refers to appropriate communication from the flight crew to address the arming and disarming of cabin or cargo entry door slides, if installed.

FLT 3.13.5 <PA> If the Operator conducts passenger flights with cabin crew, the Operator *should* have a policy and procedures that define and specify the requirements for standard verbiage, terminology, signals and/or verbal commands used for communication between flight crew and cabin crew during normal, abnormal and emergency situations. (GM)

Guidance

The intent of this provision is to ensure communication between flight crew and cabin crew during abnormal and emergency situations is conducted using standardized methods of communication identified and defined in documentation available to applicable crew members.

Examples of such situations include:

- Cabin depressurization;
- Severe turbulence;
- Emergency evacuation;
- “Before impact” notification (forced/emergency landing or ditching);
- Crew member incapacitation;
- Unlawful interference.

FLT 3.13.6 If the Operator transports passengers and/or supernumeraries, the Operator shall have a policy that provides for announcements to, as applicable, passengers and/or supernumeraries by either the flight crew or cabin crew to address matters related to safety, including turbulence and abnormal and emergency situations.

FLT 3.13.7 (Intentionally Open)

FLT 3.13.8 If the Operator transports passengers and/or supernumeraries, the Operator shall have procedures that ensure the preparation of the cabin or supernumerary compartment prior to

takeoff and landing, and provide for notification to, as applicable, passengers and/or supernumeraries by either the flight crew or cabin crew:

- i) To prepare for takeoff;
- ii) When in the descent phase of flight;
- iii) To prepare for landing. (GM)

Guidance

The intent of this provision is to ensure cabin or supernumerary compartment readiness under the conditions specified. Additionally, the provision requires that all applicable personnel are notified when in the specified phases of flight.

If cabin crew members are not used, preparation of the cabin prior to takeoff and landing would require the flight crew to verify certain conditions are in effect. Items checked by the flight crew will vary according to aircraft type and equipment carried, but might typically include:

- Passenger seat belts fastened;
- Tray tables and seat backs in a stowed and upright position;
- Cabin baggage and other carry-on items secure in designated areas;
- As applicable, in-flight entertainment system viewing screens off and stowed;
- Galleys and associated equipment stowed or restrained.

FLT 3.13.9 <AC> If the Operator utilizes aircraft with a smoke barrier door, the Operator shall have procedures to ensure such door is closed for:

- i) Taxi operations;
- ii) Takeoff;
- iii) Landing.

FLT 3.13.10 <AC> If the Operator transports radioactive material as cargo and has received an exemption to increase the amount of such material in excess of limitations set by the Authority, the Operator *should* have a procedure to monitor the radiation to which flight crew members have been exposed.

FLT 3.13.11 If the Operator conducts cargo flights or passenger flights without cabin crew, and utilizes aircraft equipped with entry doors that have an automatic slide or slide/raft deployment system, the Operator shall have flight crew procedures for arming and disarming such door systems. (GM)

Guidance

This standard addresses door systems that are designed to deploy a slide or slide/raft for emergency evacuation if the door is opened with the system in the armed mode. Such door systems are typically armed once the door has been closed for flight, and disarmed at the end of a flight and prior to the door being opened for passenger and/or crew deplaning.

Depending on the type of aircraft and door system, the pack that contains the slide or slide/raft might be mounted in the door itself, or might be mounted in the fuselage, tail cone or other location.

FLT 3.13.12 If the Operator transports passengers and/or supernumeraries, and does *not* use a cabin crew, the Operator shall have flight crew procedures that ensure, as applicable, passengers and/or supernumeraries have ready access to emergency oxygen.

FLT 3.13.13 If the Operator transports passengers and/or supernumeraries, and does *not* use a cabin crew, the Operator shall have flight crew procedures that ensure, as applicable, passengers

and/or supernumeraries are seated with their seat belts (or, as available, harness or other restraint) fastened:

- i) During the taxi phases of a flight;
- ii) During the takeoff and landing phases of flight;
- iii) Prior to and/or during turbulence;
- iv) During an emergency situation, if considered necessary.

FLT 3.13.14 If the Operator transports supernumeraries in the passenger cabin or cargo compartment, the Operator shall have guidance and procedures to ensure:

- i) All seats in the cargo compartment are considered emergency exit row seats;
- ii) Supernumeraries meet applicable requirements and restrictions.

FLT 3.13.15 If the Operator transports passengers and supernumeraries in the passenger cabin or supernumerary compartment, and does *not* use a cabin crew, the Operator shall have guidance and procedures that require the flight crew to ensure, as applicable, passengers and/or supernumeraries:

- i) Are informed and receive instruction on all restrictions pertaining to onboard smoking;
- ii) Comply with the *Fasten Seat Belt* sign;
- iii) If applicable, comply with the *No Smoking* sign.

FLT 3.13.16 If the Operator utilizes aircraft equipped with a flight deck entry door in accordance with FLT 4.5.1, 4.5.2 or 4.5.3, the Operator shall have policies and/or procedures that are in accordance with the requirements of the Authority and, as a minimum, define:

- i) When the flight deck entry door must remain locked;
- ii) If the Operator conducts passenger flights with cabin crew;
 - a) The way the cabin crew notifies the flight crew in the event of suspicious activity or security breaches in the cabin;
 - b) The way cabin crew members gain entry to the flight deck. (GM)

Guidance

The intent of this provision is to ensure the security of the flight deck by providing the flight crew with appropriate policy and procedures for use when a flight deck door is installed.

Policies and procedures related to flight deck security may be considered sensitive information and provided to relevant personnel in a manner that protects the content from unnecessary disclosure.

FLT 3.13.17 If the Operator utilizes aircraft with a reinforced flight deck entry door in accordance with FLT 4.5.2 or FLT 4.5.3, the Operator shall provide guidance, procedures and instructions for the use of such door by the flight crew to ensure the security of the flight deck. Such guidance shall include, as a minimum, the procedural means by which the crew:

- i) Prevents access to the flight deck by unauthorized personnel;
- ii) Identifies authorized personnel requesting entry into the flight deck. (GM)

Guidance

The intent of this provision is to ensure the security of the flight deck by providing the flight crew with appropriate guidance, procedures and instructions for use when a reinforced flight deck door is installed, regardless of the aircraft configuration (passenger, cargo, combi).

Guidance, procedures and instructions related to flight deck security may be considered sensitive information and provided to relevant personnel in a manner that protects the content from unnecessary disclosure.

FLT 4.5.2 and FLT 4.5.3 contain specifications related to requirements and recommendations for the installation of reinforced flight deck entry doors. This provision, however, only specifies the procedures related to the use of such doors when installed.

FLT 3.13.18 If the Operator conducts international passenger flights utilizing aircraft equipped with a flight deck door in accordance with FLT 4.5.2 or FLT 4.5.3, the Operator shall have procedures:

- i) To ensure such door is closed and locked from the time all external aircraft doors are closed following embarkation until any external aircraft door is subsequently opened for disembarkation, except when necessary to permit access and egress by authorized persons;
- ii) For monitoring from either pilot station the entire area outside the flight deck entry door to identify persons requesting entry and to detect suspicious behavior or potential threat. (GM)

Guidance

The intent of this provision is to ensure the security of the flight deck by providing the flight crew with appropriate procedures for use when a reinforced flight deck door is installed.

Procedures related to flight deck security may be considered sensitive information and provided to relevant personnel in a manner that protects the content from unnecessary disclosure.

The specification in item i) refers to the period when the aircraft is being operated beginning when all exterior doors are closed for engine start or pushback and ending when the aircraft is parked and any exterior door is opened for disembarkation.

For monitoring the area outside the flight deck entry door, a closed circuit television (CCTV) system is an acceptable method of conformity. However, a CCTV system is not required in order to conform to this provision. Implementation of other procedural methods in accordance with applicable regulations is also considered acceptable.

Any means utilized by an operator for such monitoring ensures that the cabin area outside the flight deck entry door, and any persons that might be in that area, would be identifiable to the extent necessary to meet the requirements of this standard.

FLT 3.13.19 If the Operator conducts passenger operations and does not utilize a flight deck entry door in accordance with FLT 4.5.1, 4.5.2 or 4.5.3, the Operator shall have measures in place to ensure unauthorized persons are prevented from entering the flight deck. (GM)

Guidance

The intent of this provision is to ensure the security of the flight deck when there is no flight deck door installed.

3.14 Non-Normal/Abnormal and Emergency Operations

FLT 3.14.1 The Operator shall have guidance to enable flight crews to properly manage non-normal situations through the use of:

- i) Prioritization;
- ii) Task sharing;
- iii) Division of PNF/PF duties;
- iv) Crew coordination. (GM)

Guidance

The term Pilot Monitoring (PM) may be substituted for the term Pilot Not Flying (PNF) for the purpose of applying the specifications of this provision.

FLT 3.14.2 The Operator shall have a policy that prohibits the in-flight simulation of emergencies while passengers and/or cargo are being transported onboard the aircraft.

FLT 3.14.3 The Operator shall have a policy and guidance that defines the execution of abnormal/non-normal and emergency procedures and that ensures a crosscheck and verbal confirmation by two flight crew members (dual response) occurs before the actuation of any critical aircraft system controls. Such guidance shall identify critical systems, as defined by the OEM, and address, as a minimum:

- i) Engine thrust levers;
- ii) Fuel master or control switches;
- iii) Engine fire handles or switches
- iv) Engine fire extinguisher switches;
- v) IDG/CSD disconnect switch. (GM)

Guidance

The intent of this provision is to ensure the operator's policy and guidance defines how abnormal/non-normal and emergency procedures are executed, and additionally ensures that the critical actions taken during the execution of such procedures are crosschecked and verbally confirmed by at least two flight crew members. Such critical actions are defined by the OEM and typically addressed in operating policy and guidance associated with the use of abnormal/non-normal and emergency checklists. This does not preclude, however, an OEM or operator from procedurally addressing critical actions in the checklists themselves.

FLT 3.14.4 <PA> If the Operator conducts passenger flights with cabin crew, the Operator shall have procedures that are applicable to each aircraft type and are executed during a situation requiring an emergency evacuation. Such procedures shall:

- i) Specify flight and cabin crew member functions and actions;
- ii) Address flight and cabin crew member task sharing.

FLT 3.14.5 If the Operator transports passengers and/or supernumeraries, and does *not* use a cabin crew, the Operator shall have procedures that are applicable to each aircraft type and:

- i) Specify flight crew functions and actions to be executed during an emergency evacuation;
- ii) Address, as applicable, passengers and/or supernumeraries.

FLT 3.14.6 The Operator shall have policies and procedures that are applicable to each aircraft type and are applied during a situation requiring a rejected takeoff. Such guidance shall:

- i) Address operational considerations for low speed and high speed rejected takeoffs;
- ii) Specify flight crew member functions and actions;
- iii) Address flight crew member task sharing.

FLT 3.14.7 The Operator shall have policies and associated procedures that are applicable to each aircraft type and are applied when an engine failure or fire occurs after V1. Such guidance shall:

- i) Specify flight crew member functions and actions;
- ii) Address flight crew member task sharing.

FLT 3.14.8 If the Operator utilizes TCAS/ACAS equipped aircraft, the Operator shall have policies and procedures that are applicable to each aircraft type and are applied when a TCAS/ACAS resolution advisory (RA) is displayed by onboard equipment. Such guidance shall, as a minimum:

- i) Specify flight crew member functions and actions;
- ii) Address flight crew member task sharing;
- iii) Specify a TCAS escape maneuver;
- iv) Require flight crews to follow a TCAS RA guidance even if it conflicts with ATC instructions.

FLT 3.14.9 The Operator shall have policies and procedures that are applicable to each aircraft type and are applied during a GPWS or other terrain avoidance alert provided by onboard equipment. Such guidance shall define a CFIT escape maneuver as an aggressive pitch up maneuver that maximizes the performance of the aircraft and, as a minimum:

- i) Specifies flight crew member functions and actions;
- ii) Addresses flight crew member task sharing.

FLT 3.14.10 The Operator shall have procedures that are applicable to each aircraft type and are applied in the event of an emergency descent. Such procedures shall:

- i) Specify flight crew member functions and actions;
- ii) Address flight crew member task sharing.

FLT 3.14.11 The Operator shall have guidance and procedures that address abnormal and/or emergency communication, to include the:

- i) Appropriate use of PAN/PAN and/or MAYDAY;
- ii) Actions to be taken in the event of a complete radio failure (lost communication);
- iii) Interception protocol for civil aircraft intercepted by military aircraft, to include a description of visual signals used by intercepting and intercepted aircraft.

FLT 3.14.12 The Operator shall have procedures to be applied by the flight crew in the event of a medical emergency onboard the aircraft. Such procedures shall:

- i) Specify flight crew member functions and actions;
- ii) If a cabin crew is used:
 - a) Specify cabin crew member functions and actions;
 - b) Address flight and cabin crew member task sharing;
 - c) Ensure flight deck to cabin communication and coordination occurs in accordance with FLT 3.13.3.

FLT 3.14.13 The Operator shall have procedures that are applied by the flight crew in the event of flight crew member incapacitation onboard the aircraft. Such procedures shall:

- i) Specify flight crew member functions and actions;
- ii) If a cabin crew is used:
 - a) Specify cabin crew member functions and actions;
 - b) Address flight and cabin crew member task sharing;
 - c) Ensure flight deck and cabin communication and coordination occurs in accordance with FLT 3.13.3.

FLT 3.14.14 The Operator shall have guidance and procedures that ensure the proper reset of circuit breakers after a system malfunction or trip. Such guidance shall, as a minimum, specify when and how often tripped circuit breakers may be reset.

FLT 3.14.15 The Operator shall have a policy that requires the PIC to declare an emergency when the fuel onboard is less than the greater of the:

- i) Minimum quantity required by the Authority;
- ii) Quantity required to fly for 30 minutes under speed and altitude conditions specified by the Operator or the Authority. (GM)

Guidance

Approved minimum quantity is a quantity of fuel established by the operator or the Authority.

3.15 Flight Crew Reporting Requirements

FLT 3.15.1 The Operator shall have a policy that encourages flight crew members to submit a written report to the Operator when an occurrence that could potentially have an adverse effect on the safety of flight operations has been observed.

FLT 3.15.2 The Operator shall have a policy that requires the PIC to report any hazardous flight condition to the appropriate ATC facility without delay.

FLT 3.15.3 The Operator shall have a policy that assigns responsibility to the PIC for notifying the nearest authority, by the quickest available means, of any accident or serious incident resulting in injury, death, or substantial aircraft damage.

FLT 3.15.4 The Operator shall have a policy that assigns responsibility to the PIC for:

- i) Notifying the appropriate local authority without delay in the event of any emergency situation that necessitated action in violation of local regulations and/or procedures;
- ii) Submitting, if required by the state of occurrence, a report to the appropriate local authority and also to the Authority of the State of the Operator.

4 Operations Engineering Specifications

General Guidance

Refer to the IRM for the definition of *Operations Engineering*.

Refer to Section 5, Cabin Operations, Subsection 4, for additional passenger cabin systems and equipment specifications.

4.1 Aircraft Performance

FLT 4.1.1 The Operator shall have a process, performed by Operations Engineering, to determine and maintain guidance, procedures and performance data in the OM, applicable to each aircraft type, for applicable departure, destination and alternate airports. Such guidance and data shall enable the flight crew to determine or compute:

- i) Maximum structural weights (taxi, takeoff, landing);
- ii) Takeoff performance (accelerate - stop, close-in obstacles) that also ensures charting accuracy is accounted for, when necessary, in assessing takeoff performance in the event of a critical power unit failing at any point in the takeoff;
- iii) Maximum brake energy and minimum cooling time;
- iv) Climb performance (distant obstacles);
- v) Landing performance (minimum landing distance, go-around). (GM)

Guidance

The intent of this provision is to ensure the operator has a process or processes to obtain or determine the specified performance data for use by flight crew. Such process(s) also address the maintenance and publication of guidance, procedures, and performance data in the OM.

Data may be tailored for airports of intended use (e.g., runway analysis).

The specifications in items ii) and v) may necessitate the inclusion of guidance and/or patterns to be followed in case of engine failure during takeoff, approach and go-around.

Tailored data is not always available for emergency alternate airports.

FLT 4.1.2 The Operator shall have a process, performed by Operations Engineering, to determine and maintain guidance, data and procedures in the OM, applicable to each aircraft type, that enable the flight crew to determine and/or compute aircraft performance for all phases of flight. Such guidance and data shall ensure the flight crew considers all relevant factors affecting aircraft performance, to include:

- i) Aircraft weight (mass);
- ii) Operating procedures;
- iii) Pressure altitude;
- iv) Temperature;
- v) Wind;
- vi) Runway gradient;
- vii) Runway contaminant/braking action;
- viii) Obstacle data;
- ix) NOTAMs (including airport NOTAMs);
- x) As applicable, MEL/CDL information;
- xi) Aircraft configuration (wing flap setting);
- xii) Anti-ice usage and, when applicable, ice accretion;

- xiii) As applicable, runway length used for aircraft alignment prior to takeoff;
- xiv) As applicable, fuel freeze considerations during extended operations. (GM)

Guidance

The intent of this provision is to ensure the operator has a process or processes to obtain or determine the specified performance data for use by flight crew. Such process(es) also address the maintenance and publication of guidance, procedures, and performance data in the OM.

The specification in item vii) could be defined by a specific contaminant type/depth or equivalent braking action report.

The specifications in xiv) apply to considerations regarding the use of standard fuel freeze temperatures, fuel temperature analysis and en route fuel temperature monitoring for the specific fuels used in operations. Such considerations allow the flight crew to determine the actual fuel freeze temperature during extended operations (e.g. polar operations) in order to prevent in-flight freezing of fuel.

FLT 4.1.3 The Operator shall have a process, performed by Operations Engineering, to determine and maintain guidance, data and procedures in the OM, applicable to each aircraft type, that enable the flight crew to determine and/or compute en route aircraft engine out performance. Such guidance, data and procedures shall include, as a minimum, aircraft engine-out:

- i) Service ceiling;
- ii) Drift down altitudes, as well as specific guidance and procedures that assure terrain clearance. (GM)

Guidance

The intent of this provision is to ensure an operator has a process or processes to obtain or determine the specified performance data for use by flight crew. Such process(es) also address the maintenance and publication of guidance, procedures, and performance data in the OM.

The specification in item ii) refers to those areas where adequate terrain clearance cannot be assured at the engine-out service ceiling of the aircraft without following specific guidance and procedures for drift down.

FLT 4.1.4 The Operator *should* provide operating instructions that are applicable to each aircraft type and enable the PIC to determine the all-engine climb gradient that can be achieved during the departure phase of flight under the existing conditions. (GM)

Guidance

The intent of this provision is for the operator to provide instructions for the PIC to determine if all engine takeoff and departure climb performance is adequate for the planned operation under the existing conditions. Such instructions typically contain one or more of the following elements:

- Assurances that automated performance and flight planning systems account for minimum takeoff and departure path climb performance;
- Tailored (e.g. Jeppesen) takeoff performance charts that assure aircraft meet all-engine minimum climb performance requirements;
- Aircraft manufacturer climb performance charts and instructions for their use;
- A requirement for the PIC to monitor and adjust vertical speed to maintain minimum climb gradient);
- Specific thrust and/or flight control configuration settings to exceed the minimum climb gradient performance at airports requiring different climb performance due to terrain, traffic or other considerations.

In the absence of manufacturer climb performance data, the specifications of this provision may be satisfied if the operator provides:

- Guidance that enables the PIC to determine the aircraft climb performance necessary to meet ATC or obstacle clearance constraints (e.g. minimum vertical speed required to meet climb gradient specified in a SID), and/or
- Instructions for the PIC to monitor and adjust vertical speed as necessary to comply with the departure path.

If available from the manufacturer, the operator should include all-engine takeoff climb gradient information or guidance for calculations in the documentation carried onboard the aircraft for each flight.

4.2 Navigation and Facilities

FLT 4.2.1 The Operator shall have guidance and procedures to ensure a flight will not be commenced unless it has been ascertained, to the extent possible, that conditions and ground facilities required for the flight are adequate for the type of operation. (GM)

Guidance

A review of factors to determine if the conditions at the airport(s) of operation are adequate for operations includes, as applicable:

- Navigation aids;
- Runways, taxiways, ramp areas;
- Curfews;
- PPR (prior permission required);
- Field conditions;
- Lighting;
- ARFF;
- Applicable operating minima.

FLT 4.2.2 The Operator shall have a process, performed by Operations Engineering, to ensure completion of an analysis that addresses relevant operational factors prior to operating over any new route or into any new airport. Such analysis shall take into account:

- i) Obstacle clearance for all phases of flight (minimum safe altitudes);
- ii) Runway (width, length and pavement loading);
- iii) Navigation aids and lighting;
- iv) Weather considerations;
- v) Emergency services;
- vi) Fuel burn calculations;
- vii) As applicable, fuel freeze considerations during extended operations;
- viii) As applicable, ETOPS requirements;
- ix) Air Traffic Services;
- x) Critical engine inoperative operations;
- xi) Depressurization over critical areas;
- xii) (Special) airport classification. (GM)

Guidance

The specifications in:

- Item vii) refers to a determination if the occurrence of fuel freeze during extended operations is operationally relevant when planning a new route. If operationally relevant, the specification vii) of this provision requires the operator to determine and designate the methods used by the flight crew to determine fuel freeze points in accordance with the specifications of FLT 4.1.2.
- Item xi) applies to carriage of fuel to respect oxygen requirement after depressurization.
- Item xi) may be satisfied by depressurization routes, charts and/or tables that consider oxygen requirements over high terrain and fuel burn over remote areas.
- Item xii) may be satisfied by standardized criteria for the determination and classification of special airports (e.g., EU-OPS).

FLT 4.2.3 The Operator *should* provide information that identifies and describes en route emergency airports associated with operations over remote or sparsely populated areas. (GM)

Guidance

The specifications of this provision refer to emergency airports identified and described by the operator that are not subject to the adequacy specifications of FLT 4.2.1 or the new airport analysis specifications of FLT 4.2.2.

Such information is provided for consideration by the PIC in the event an emergency over such areas precludes continuation to an adequate en route alternate. Any deficiencies in airport adequacy with respect to the specifications of FLT 4.2.1 and FLT 4.2.2 are to be identified and described.

FLT 4.2.4 The Operator shall have guidance, data and procedures to enable operations engineering personnel to determine minimum safe altitudes for all phases of flight. (GM)

Guidance

Minimum safe altitudes (MSAs) are typically established by the states over which flights are conducted.

MSAs are typically established by the operator through specified methods approved by the State and included in the OM.

FLT 4.2.5 The Operator shall specify operating minima for each airport of intended use, which shall not be lower than those established by the state in which the airport is located.

4.3 Aircraft Systems and Equipment Specifications

FLT 4.3.1 The Operator shall ensure all aircraft in its fleet are equipped with:

- i) Instrumentation and/or avionics, readily visible to the intended pilot flight crew member, necessary to conduct operations and meet applicable flight parameters, maneuvers and limitations;
- ii) Equipment necessary to satisfy applicable operational communication requirements, including emergency communication;
- iii) Avionics, equipment and/or components necessary to satisfy applicable navigation requirements, provide necessary redundancy and, as applicable, authorized by the State for use in RNP, MNPS and/or RVSM operations;
- iv) Avionics, instrumentation and/or radio equipment necessary to satisfy applicable approach and landing requirements;
- v) Other components and/or equipment necessary to conduct operations under applicable flight conditions, including instrument meteorological conditions.

FLT 4.3.2 The Operator shall ensure all aircraft operated at flight altitudes above 25000 feet are equipped with a quick-donning oxygen mask for each flight crew member.

FLT 4.3.3 If the Operator utilizes pressurized aircraft intended to be operated at flight altitudes above 25000 feet for which the individual certificate of airworthiness is first issued on or after 1 July 1962, the Operator shall ensure such aircraft are equipped with a device that provides positive warning to the pilot of any dangerous loss of pressurization.

FLT 4.3.4 If the Operator utilizes unpressurized aircraft operated at flight altitudes where the cabin altitude will be greater than 10,000 feet (less than 700 hPa), the Operator shall ensure all such aircraft are equipped with oxygen storage and dispensing apparatus in accordance with requirements of the Authority and, as a minimum, also ensures;

- i) The aircraft can continue at a pressure altitude that will allow continued safe flight and landing;
- ii) An amount of stored supplemental oxygen, in accordance with the requirements of the Authority, and, as a minimum, to supply:
 - a) The flight crew for any period the cabin altitude would be above 10,000 feet;
 - b) All aircraft occupants for any period the cabin altitude would be above 15,000 feet;
 - c) The flight crew and all aircraft occupants in accordance with a) and b) as appropriate for the route to be flown. (GM)

Guidance

The operator, in accordance with the requirements of the Authority, typically uses technical guidance for the computation of sufficient stored breathing oxygen for unpressurized aircraft derived from any one of the following sources, as applicable:

- ICAO Annex 6, 4.3.8.1;
- EU-OPS 1.775 and Appendix 1 to EU-OPS 1.775;
- FAR 135.157 (a), FAR 121.327, FAR 121.329;
- Any equivalent reference document approved or accepted by the Authority for the computation of sufficient stored breathing oxygen for unpressurized aircraft that conforms to the specifications of this provision.

The specifications of this provision require a minimum amount of oxygen supply be determined and/or designated by the operator or the Authority.

Flight altitude is equivalent to cabin pressure altitude for the purposes of unpressurized aircraft oxygen supply calculations.

The specifications in item ii) may require the operator to define escape routes in the OM.

FLT 4.3.5 If the Operator utilizes aircraft operated at flight altitudes greater than 10,000 feet (less than 700 hPa), but pressurized to maintain a cabin altitude of less than 10,000 feet (greater than 700 hPa), the Operator shall ensure all such aircraft can descend to an altitude after a loss of pressurization that will allow continued safe flight and landing and are equipped with oxygen storage and dispensing apparatus in accordance with requirements of the Authority and, as a minimum, also ensures:

- i) The aircraft can continue at a pressure altitude that will allow continued safe flight and landing;
- ii) An amount of stored supplemental oxygen, in accordance with the requirements of the Authority, and, as a minimum, to supply:
 - a) The flight crew for any period the cabin altitude would be above 10,000 feet;

- b) All aircraft occupants for any period the cabin altitude would be above 15,000 feet;
 - c) The flight crew and all aircraft occupants in accordance with a) and b) as appropriate for the route to be flown.
- iii) For aircraft that do not operate above 25,000 feet, the amount of stored oxygen for aircraft occupants specified in ii) b) above may be reduced, in accordance with the requirements of the Authority, if at all points along the route to be flown, the aircraft is able to descend safely within 4 minutes to a cabin pressure altitude of 15,000 ft or less. (GM)

Guidance

The intent of this provision is to define a minimum amount of oxygen supply and should not be confused with requirements for the use of oxygen as specified in FLT 3.11.49.

The operator, in accordance with the requirements of the Authority, typically uses technical guidance for the computation of sufficient stored breathing oxygen for pressurized aircraft derived from any one of the following sources, as applicable:

- ICAO Annex 6, 4.3.8.2;
- EU-OPS 1.770 and Appendix 1 to EU-OPS 1.770;
- FAR 135.157 (b), FAR 121.329, 121.331, and 121.333;
- Any equivalent reference document approved or accepted by the Authority for the computation of sufficient stored breathing oxygen for pressurized aircraft that conforms to the specifications of this provision.

The specifications of this provision require a minimum amount of oxygen supply be determined and/or designated by the operator or the Authority.

The descent specified in item ii) is in accordance with emergency procedures specified in the AFM to a safe altitude for the route to be flown that will allow continued safe flight and landing.

FLT 4.3.6 The Operator shall ensure all aircraft in its fleet are equipped with flight Crew Protective Breathing Equipment (PBE) as follows:

- i) Equipment shall protect the eyes, nose and mouth of each flight crew member while on flight duty and provide oxygen for a period of not less than 15 minutes;
- ii) Equipment shall allow the flight crew to communicate using the aircraft radio equipment and to communicate by interphone with each other while at their assigned duty stations;
- iii) When the flight crew is more than one person and a cabin crew is *not* used, a portable unit of PBE shall be carried. (GM)

Guidance

The oxygen supply to satisfy the specifications in item i) may be portable or provided by the supplemental oxygen system present onboard the aircraft.

The specification in item i) can be satisfied by equipment that protect the eyes, nose and mouth such as a smoke hood, full face oxygen mask or combination of smoke goggles and oxygen mask.

The specification in item iii) can only be satisfied by a portable PBE intended to be carried to protect the eyes, nose and mouth of one member of the flight crew and to provide breathing gas for a period of not less than 15 minutes.

FLT 4.3.7 The Operator shall ensure Crew Protective Breathing Equipment (PBE) as specified in FLT 4.3.6 is located as follows:

- i) PBE intended for flight crew use shall be conveniently located on the flight deck and be easily accessible for immediate use by each required flight crew at their assigned duty station;
- ii) Applicable to cargo aircraft, an additional unit of portable PBE shall be provided at or adjacent to the flight deck hand fire extinguisher except that, where the fire extinguisher is located inside an accessible cargo or supernumerary compartment, the unit of portable PBE shall be stowed in the supernumerary compartment or outside but adjacent to the entrance of the accessible cargo compartment;
- iii) Applicable to passenger aircraft, additional portable units of PBE shall be located in accordance with CAB 4.2.6. (GM)

Guidance

Refer to the IRM for the definitions of *Cargo Aircraft* and *Passenger Aircraft*.

The oxygen supply to satisfy the specifications in item i) may be portable or provided by the supplemental oxygen system present onboard the aircraft.

The specifications in items ii) and iii) can only be satisfied by a portable unit of PBE intended to be carried to protect the eyes, nose and mouth of one member of the flight or cabin crew and to provide breathing gas for a period of not less than 15 minutes.

The specification in item i) can be satisfied by equipment that protect the eyes, nose and mouth such as a smoke hood, full face oxygen mask or combination of smoke goggles and oxygen mask.

FLT 4.3.8 The Operator shall ensure all aircraft in its fleet are equipped with hand-held fire extinguishers in accordance with CAB 4.2.5, which shall be of a type that will minimize the hazard of toxic gas concentration. A minimum of one hand-held fire extinguisher shall be located in the flight deck.

FLT 4.3.9 The Operator shall ensure all aircraft in its fleet are equipped with a minimum of one crash axe or crowbar located on the flight deck.

FLT 4.3.10 The Operator shall ensure all aircraft intended to be operated at night are equipped with a flashlight (torch) at each flight crew member station. (GM)

Guidance

This provision is normally satisfied by the installation of a fixed light or torch attached to the aircraft structure, such as a "Grimes Light."

Operators wishing to utilize flight crew member flashlights to conform to the specifications of this provision need to demonstrate the means of ensuring the carriage, accessibility and serviceability of such flashlights.

FLT 4.3.11 – 4.3.12 (Intentionally open)

FLT 4.3.13 If the Operator conducts international flights, the Operator shall ensure all aircraft utilized for such flights, except those aircraft specified in FLT 4.3.14, are equipped with emergency locator transmitters (ELTs) as follows:

- i) For aircraft with more than 19 passenger seats, a minimum of one automatic ELT or two ELTs of any type that operate on 121.5 MHz and 406 MHz simultaneously;
- ii) For aircraft with 19 passenger seats or less, a minimum of one ELT of any type that operates on 121.5 MHz and 406 MHz simultaneously. (GM)

Guidance

Refer to the IRM for the definition of *Emergency Locator Transmitter (ELT)*, which includes the definitions for the types of ELTs.

The intent of this provision is to ensure all aircraft, regardless of configuration (passenger, cargo, combi), used in international operations are equipped with ELTs in accordance with the specifications in items i) or ii), as applicable. In practical terms, this means that any passenger, cargo or combi aircraft equipped with more than 19 passenger seats is subject to the specifications in item i). Conversely, any passenger, cargo or combi aircraft equipped with less than 19 seats, including a cargo aircraft without provision for any passenger seating, is subject to the specifications in item ii). Technical guidance for the operational requirements applicable to ELTs is contained in ICAO Annex 10, Volume III.

FLT 4.3.14 If the Operator conducts international flights, the Operator shall ensure all aircraft utilized for such flights, for which the individual certificate of airworthiness is first issued after 1 July 2008, are equipped with ELTs as follows:

- i) For aircraft with more than 19 passenger seats, a minimum of two ELTs that operate on 121.5 MHz and 406 MHz simultaneously, one of which shall be automatic;
- ii) For aircraft with 19 passenger seats or less, a minimum of one automatic ELT that operates on 121.5 MHz and 406 MHz simultaneously. (GM)

Guidance

The intent of this provision is to ensure all aircraft, regardless of configuration (passenger, cargo, combi), used in international operations are equipped with ELTs in accordance with the specifications in items i) or ii), as applicable. In practical terms, this means that any passenger, cargo or combi aircraft equipped with more than 19 passenger seats is subject to the specifications in item i). Conversely, any passenger, cargo or combi aircraft equipped with less than 19 seats, including a cargo aircraft without provision for any passenger seating, is subject to the specifications in item ii).

Refer to ICAO Annex 10, Volume III, for technical guidance applicable to ELTs.

FLT 4.3.15 – 4.3.16 (Intentionally open)

FLT 4.3.17 The Operator *should* ensure all aircraft are equipped with a minimum of one automatic ELT that operates on 121.5 and 406 MHz simultaneously.

FLT 4.3.18 If the Operator conducts operations in defined portions of airspace where, based on a Regional Air Navigation Agreement, minimum navigation performance specifications (MNPS) are prescribed, the Operator shall ensure all aircraft utilized for such operations contain navigation equipment that:

- i) Is visible and usable by either pilot seated at his/her duty station;
- ii) Continuously provides indications to the flight crew of adherence to or departure from track to the required degree of accuracy at any point along that track.

FLT 4.3.19 If the operator conducts operations in defined RVSM airspace, the Operator shall ensure all aircraft authorized for such operations are equipped to:

- i) Indicate to the flight crew the flight level being flown;
- ii) Automatically maintain a selected flight level;
- iii) Provide an alert to the flight crew when a deviation occurs from the selected flight level, with the threshold for such alert not to exceed 90 m (300 feet);
- iv) Automatically report pressure altitude. (GM)

Guidance

Refer to the IRM for the definition of *Reduced Vertical Separation Minima (RVSM)*.

FLT 4.3.20 The Operator shall ensure all turbine-engine aircraft in its fleet with a maximum certificated takeoff mass in excess of 5,700 kg (12,566 lb), or authorized to carry more than 19 passengers, are equipped with an airborne collision avoidance system (ACAS II). (GM)

Guidance

Technical guidance for the operational requirements applicable to ACAS II is contained in ICAO Annex 10, Volume IV.

FLT 4.3.21 The Operator *should* ensure all turbine-engine aircraft in its fleet are equipped with an airborne collision avoidance system (ACAS II). (GM)

Guidance

Technical guidance for the operational requirements applicable to ACAS II is contained in ICAO Annex 10, Volume IV.

FLT 4.3.22 The Operator shall ensure all aircraft in its fleet are equipped with a pressure altitude reporting transponder. (GM)

Guidance

A Mode C or greater transponder satisfies the specifications of this provision.

FLT 4.3.23 The Operator shall ensure all pressurized aircraft in its fleet are equipped with an airborne weather radar system capable of detecting thunderstorms and other potentially hazardous weather conditions when operating in areas where such weather conditions could be expected to exist along the route either at night or under instrument meteorological conditions.

FLT 4.3.24 The Operator shall ensure all turbine engine aircraft in its fleet with a maximum certificated takeoff mass in excess of 5,700 kg (12,566 lb), or authorized to carry more than nine passengers, are equipped with a ground proximity warning system (GPWS) that automatically provides a warning to the flight crew when the aircraft is in close proximity to the earth's surface with:

- i) Excessive descent rate;
- ii) Excessive terrain closure rate;
- iii) Excessive altitude loss after takeoff or go-around;
- iv) Unsafe terrain clearance while not in the landing configuration;
- v) Excessive descent below the instrument glide path. (GM)

Guidance

Refer to the IRM for the definition of *Ground Proximity Warning System (GPWS)*.

A GPWS provides a warning when it senses the aircraft is in close proximity to the earth's surface and not in the landing configuration, which typically means the landing gear is not down and locked, and/or the flaps are not in a landing position.

FLT 4.3.25 The Operator shall ensure all turbine-engine aircraft in its fleet with a maximum certificated takeoff mass in excess of 5,700 kg (12,566 lb), or authorized to carry more than nine passengers, are equipped with a GPWS as specified in FLT 4.3.24 that has a forward-looking terrain avoidance function. (GM)

Guidance

Refer to the IRM for the definition of *GPWS with a Forward-Looking Terrain Avoidance (FLTA) Function*.

Different systems are available and acceptable as a GPWS with a forward-looking terrain avoidance (FLTA) function, as specified in this provision. The following guidance is an overview only; it is not to be construed as technical specifications for an acceptable system.

A GPWS with a FLTA function could also be known as a predictive terrain awareness and warning system (TAWS), and provides:

- A forward-looking capability and terrain clearance floor;
- The flight crew, by means of visual and aural signals, and a terrain awareness display, with an alerting time necessary to prevent controlled flight into terrain events.

An acceptable system provides a forward-looking capability and terrain clearance floor protection in areas of operations and surrounding airports of intended use. Such systems generally have:

- A navigation system that provides accurate aircraft position (e.g. GPS or equivalent);
- A means of displaying aircraft and terrain information;
- A means of providing visual and aural signals;
- A terrain database(s) for all areas of potential operations and surrounding airports of intended use;
- If an obstacle database is commercially available and obstacle detection/display functionality is installed, an obstacle database for all areas of potential operations.

FLT 4.3.26 The Operator shall ensure all piston-engine aircraft in its fleet with a maximum certificated takeoff mass in excess of 5,700 kg (12,566 lb), or authorized to carry more than nine passengers, are equipped with a GPWS that automatically provides a warning to the flight crew when the aircraft is in close proximity to the earth's surface with:

- i) Excessive descent rate;
- ii) Excessive terrain closure rate;
- iii) Excessive altitude loss after takeoff or go-around.

FLT 4.3.27 The Operator shall ensure all piston-engine aircraft in its fleet with a maximum certificated takeoff mass in excess of 5,700 kg (12,566 lb), or authorized to carry more than nine passengers, are equipped with a GPWS as specified in FLT 4.3.26 that has a forward-looking terrain avoidance function. (GM)

Guidance

A GPWS with a FLTA function could also be known as a predictive terrain awareness and warning system (TAWS), and provides:

- A forward-looking capability and terrain clearance floor;
- The flight crew, by means of visual and aural signals, and a terrain awareness display, with an alerting time necessary to prevent controlled flight into terrain events.

An acceptable system provides a forward-looking capability and terrain clearance floor protection in areas of operations and surrounding airports of intended use. Such systems generally have:

- A navigation system that provides accurate aircraft position (e.g. GPS or equivalent);
- A means of displaying aircraft and terrain information;
- A means of providing visual and aural signals;
- A terrain database(s) for all areas of potential operations and surrounding airports of intended use;
- If an obstacle database is commercially available and obstacle detection/display functionality is installed; an obstacle database for all areas of potential operations.

FLT 4.3.28 The Operator *should* ensure aircraft in its fleet with a maximum certificated takeoff mass in excess of 5700 kg, or authorized to carry more than nine passengers, are equipped with a forward-looking windshear warning system. (GM)

Guidance

Refer to the IRM for the definition of *Forward-Looking Windshear Warning System*

FLT 4.3.29 The Operator shall ensure all aircraft in its fleet with a maximum certificated takeoff mass in excess of 5,700 kg (12,566 lb) are equipped with an FDR that:

- i) Does not utilize photographic film or engraving metal foil;
- ii) After 1 January 2012, is not of the analog type utilizing frequency modulation (FM);
- iii) Is capable of recording, as a minimum, the last 25 hours of aircraft operation;
- iv) Records time, altitude, airspeed, normal acceleration and heading;
- v) Is of a type that is in accordance with requirements of the Authority. (GM)

Guidance

Engraving metal foil and photographic film are obsolete recording media and are no longer acceptable for use in FDRs. Therefore, aircraft equipped with this type of FDR do not conform to the specifications of this provision.

Technical guidance for the operational requirements applicable to each type of FDR is contained in ICAO Annex 6.

FLT 4.3.30 (Intentionally open)

FLT 4.3.31 The Operator shall ensure all aircraft in its fleet of a maximum certificated takeoff mass of over 5,700 kg (12,566 lb) are equipped with a CVR that records the aural environment on the flight deck during flight and is capable of retaining recorded information **either**:

- i) For the last 30 minutes of its operation, as a minimum, **or**
- ii) For a period of time in excess of 30 minutes in accordance with the requirements of the Authority. (GM)

Guidance

Technical guidance for CVR performance requirements are contained in the Minimum Operational Performance Specifications (MOPS) document for Flight Recorder Systems of the European Organization for Civil Aviation Equipment (EUROCAE) or equivalent documents.

FLT 4.3.32 <AC> The Operator shall ensure all cargo aircraft in its fleet are equipped with one or more first aid kits that are readily accessible to the flight crew and, if applicable, supernumeraries. (GM)

Guidance

Refer to the Guidance Material for CAB 4.2.1 for the typical contents of first aid kits.

FLT 4.3.33 The Operator shall ensure all aircraft are equipped with seats and associated restraint devices as follows:

- i) For flight crew, seats fitted with a safety harness for each flight crew member;
- ii) If the Operator transports supernumeraries, a seat fitted with a seat belt (or safety harness) for each supernumerary. (GM)

Guidance

Refer to the IRM for the definition of *Safety Harness*.

Refer to CAB 4.2.13 and 4.2.14 for the specifications applicable to restraint devices for passenger and cabin crew seats.

The safety harness specified in item i) or ii) typically incorporates a device that will automatically restrain the occupant's torso in the event of rapid deceleration.

FLT 4.3.34 <AC> The Operator shall ensure all cargo aircraft in its fleet utilized for over-water flights are equipped with a minimum of one life jacket or equivalent individual flotation device for each person onboard, with each life jacket or flotation device stowed for easy accessibility from individual seating positions. (GM)

Guidance

Refer to the IRM for the definition of *Over-water Flights*.

FLT 4.3.35 <AC> If the Operator conducts long-range over-water flights, the Operator shall ensure, unless a specific exemption has been granted by the Authority, all cargo aircraft in its fleet utilized for such flights are equipped with life saving rafts with sufficient capacity to accommodate all persons onboard, with each raft stowed in a manner to facilitate ready use during a ditching emergency. Life saving rafts shall contain:

- i) Life-sustaining equipment as appropriate to the flight to be undertaken;
- ii) Equipment for making pyrotechnical distress signals.

FLT 4.3.36 <AC> If the Operator conducts flights across land areas that have been designated by the state(s) concerned as areas in which search and rescue would be especially difficult, the Operator shall ensure all cargo aircraft in its fleet utilized for such flights are equipped with signaling devices and life-saving equipment (including, means of sustaining life) in accordance with requirements of the applicable state(s). (GM)

Guidance

An Emergency Locator Transmitter (ELT) is considered an appropriate signalling device.

4.4 Cargo Compartment Systems and Equipment Requirements

FLT 4.4.1 If the Operator utilizes passenger aircraft with a cargo compartment that is accessible to a crew member, the Operator shall ensure **either**:

- i) Such compartments are equipped with a built-in cargo compartment fire suppression system, **or**
- ii) A portable fire suppression system is available for use in such compartments by a crew member. (GM)

Guidance

Refer to the IRM for the definitions of *Cargo Compartment* and *Cargo Compartment Fire Suppression System*.

This provision is applicable to passenger aircraft only and is intended to ensure a means of fire suppression in cargo compartments accessible to crew members.

FLT 4.4.2 If the Operator utilizes aircraft that have a cargo compartment, the Operator shall ensure, on all aircraft over 5,700 kg (12,566 lb) for which the application for certification was submitted on or after 2 March 2004, each cargo compartment not accessible to a crew member is equipped with a built-in fire detection system and a built-in fire starvation or suppression system. Such suppression systems, including associated extinguishing agents, shall be designed to account for a sudden and extensive fire that could be caused by an explosive or incendiary device, or by dangerous goods.

FLT 4.4.3 <AC> The Operator shall ensure all cargo aircraft are equipped with a cargo restraint system, which may include barriers, ULDs, nets, straps, chains, tie-downs and/or floor locks that prevent cargo from shifting and:

- i) Blocking or reducing access to emergency exits;
- ii) Obstructing the flow of required fire retardants;

- iii) Interfering with design features of the aircraft critical to the safety of flight (e.g. flight controls). (GM)

Guidance

Refer to the IRM for the definition of a *Cargo Restraint System*.

FLT 4.4.4 <AC> If the Operator carries a humane killer device onboard the aircraft in association with the transport of livestock, the Operator shall ensure:

- i) The device is stowed in a secure manner;
- ii) Access to the device in flight is controlled. (GM)

Guidance

Refer to the IRM for the definition of *Humane Killer*.

4.5 Flight Deck Security Equipment Requirements

FLT 4.5.1 If the Operator conducts passenger flights utilizing aircraft with a flight deck door, the Operator shall:

- i) Ensure such door is capable of being locked;
- ii) Provide a means by which cabin crew members or other authorized persons can notify the flight crew in the event of suspicious activity or a security breach. (GM)

Guidance

The specification in item ii) requires a system or device(s) for use by the cabin crew or other authorized persons to notify the flight crew of any security compromise without arousing the suspicion of the perpetrators.

FLT 4.5.2 If the Operator conducts international passenger flights utilizing aircraft with a maximum certificated takeoff mass in excess of 45,500 kg (100,310 lb) or with a seating capacity greater than 60 passengers, the Operator shall ensure such aircraft used for international flights are equipped with an approved flight deck door that is:

- i) Capable of being locked and unlocked from either pilot station;
- ii) Designed to resist penetration by small arms fire, grenade shrapnel or forcible intrusions by unauthorized persons. (GM)

Guidance

The design of the reinforced flight deck door takes into account safety requirements, such as decompression panels, emergency exit capability for the flight crew and emergency access for rescuers. Also, a secondary locking device, such as a deadbolt or cross bar, is installed in case the automated locking device is defective.

The aircraft MEL would contain any restrictions pertinent to use of the door in line operations, including, if applicable, a secondary locking system.

FLT 4.5.3 If the Operator conducts passenger flights, the Operator *should* ensure all aircraft utilized for such flights are equipped, where practicable, with an approved flight deck door that is:

- i) Capable of being locked and unlocked from either pilot station;
- ii) Designed to resist penetration by small arms fire, grenade shrapnel or forcible intrusions by unauthorized persons. (GM)

Guidance

The specifications in this standard are applicable to passenger aircraft not included in FLT 4.5.2 with the capability of being equipped with the specified flight deck door.

Table 2.1 – Onboard Library Specifications

The following documents shall be included in the Onboard Library:	
General Operating Information	
i)	General Operations Manual (GOM).
Aircraft Operating Information	
ii)	Applicable Aircraft Operating Manual (AOM) and, as a minimum: <ul style="list-style-type: none"> a) Normal and Emergency Checklists for each operating flight crew member as required by the AFM; b) Performance tables or access to performance calculations via telecom systems (e.g. ACARS) is acceptable, if completed with appropriate back-up procedures; c) Takeoff performance deviations (e.g. due to inoperative equipment or abnormal situations).
iii)	Minimum Equipment List (MEL) and Configuration Deviation List (CDL);
iv)	Aircraft-specific weight/mass and balance instructions/data (including loadsheet).
Areas, Routes and Airport Information	
v)	Flight Plans (OFP and ATS) for each flight;
vi)	The applicable departure, navigation and approach charts for use by each operating flight crew member as required by the AFM;
vii)	Route and airport instructions and information (flight crew member route guide) for each flight to include, as a minimum: <ul style="list-style-type: none"> a) Departure airport; b) Destination airport; c) En route alternate airports; d) Emergency airports.
viii)	If applicable, the escape routes used in case of decompression in an area of high terrain.
Other Information	
ix)	Cabin safety and emergency procedures relevant to the flight crew;
x)	Dangerous Goods manual or parts relevant to the flight crew, to include information and instructions on the carriage of dangerous goods and action to be taken in the event of an emergency;
xi)	Security Manual or parts relevant to the flight crew, including bomb search procedures;
xii)	Ground Handling Manual or parts relevant to the flight crew, if required for flight crew to accomplish assigned duties (recommendation only and only applicable to cargo aircraft operations).

Table 2.2 – Operations Manual (OM) Content Specifications

This table contains the fundamental OM content specifications required to achieve conformance with FLT 1.7.1 and FLT 2.1.10. The table also specifies Section 3 (DSP) provisions that must be addressed in the sections of the OM relevant to flight crew.

Note: Specific flight crew policies, guidance, data and/or procedures that must also be addressed in the sections of the OM relevant to flight crew can be found in individual Section 2 provisions and are not duplicated in the table.

General Information		ISARP
i)	General Operations Manual (GOM), to include:	FLT 1.7.1
a)	Non-aircraft type related and/or standard operating procedures for each phase of flight, policies, procedures, checklists, descriptions, guidelines, emergency procedures and other relevant information;	FLT 1.7.1
b)	Authorities, duties and responsibilities associated with the operational control of flights;	DSP 1.3.1, 1.3.4, 1.3.5
c)	If applicable, guidance that identifies and defines the common flight documents used by the flight crew, the FOO, FOA and/or other personnel responsible for operational control.	DSP 3.2.2
Aircraft Operating Information		ISARP
ii)	Aircraft Operating Manual (AOM), to include:	FLT 1.7.1
a)	Normal, abnormal/non normal and emergency procedures, instructions, and checklists;	FLT 1.7.1
b)	Aircraft systems descriptions, limitations and performance data.	FLT 1.7.1
iii)	Minimum Equipment List (MEL) and Configuration Deviation List (CDL);	FLT 1.7.1
iv)	Aircraft specific weight/mass and balance instructions/data (including loadsheet);	FLT 1.7.1
v)	Instructions for the computation of the quantities of fuel and oil (if required) to be carried.	DSP 3.2.10, 4.3.1, 4.3.2, 4.3.3, 4.3.4
Areas, Routes and Airport Information		ISARP
vi)	Route and airport instructions and information (departure, destination, en route and destination alternates, to include:	FLT 1.7.1
a)	Airway manuals and charts, including information regarding communication facilities and navigation aids;	FLT 1.7.1
b)	Airport charts, including the method for determining airport operating minima;	FLT 1.7.1
c)	FMS databases;	FLT 1.7.1
d)	Airport and runway analysis manual or documents;	FLT 1.7.1
e)	If applicable, supplemental oxygen requirements and escape routes used in the event of decompression in an area of high terrain;	FLT 1.7.1
f)	If applicable, procedures for loss of communication between the aircraft and the FOO;	DSP 3.6.2
g)	Instructions for the selection, designation (on the OFP) and protection of departure, en route and destination alternate airports;	DSP 3.5.1, 3.5.2, 3.5.3, 3.5.4, 4.1.1, 4.1.2, 4.1.3

Table 2.2 – Operations Manual (OM) Content Specifications (cont.)	
Areas, Routes and Airport Information	ISARP
h) Instructions to address departure if current meteorological reports and forecasts indicate that the destination airport or destination alternate will not be at or above operating minima;	DSP 3.2.9
i) Instructions to address the continuation of a flight towards an airport of intended landing if the latest available information indicates a landing cannot be accomplished at that airport or at least one destination alternate;	DSP 3.5.5
j) If applicable, flight following requirements and instructions to ensure the PIC notifies the operator of en route flight movement or deviations from the OFP;	DSP 3.6.2, 3.6.3
k) If applicable, flight planning considerations that address the continuation of a flight after the failure of the critical engine on a two engine aircraft and/or the second engine on a three or four engine aircraft;	DSP 4.1.4, 4.1.6
l) The essential information concerning the search and rescue services in the area over which the aircraft will be flown.	FLT 1.7.1
Training Information	ISARP
vii) Training Manual, to include:	FLT 1.7.1, 2.1.10
a) Details of all relevant training programs, policies, directives and requirements, including curricula and syllabi, as applicable, for basic operator familiarization, initial qualification, continuing qualification (including recency-of-experience), re-qualification, aircraft transition or conversion, upgrade to PIC and other specialized training requirements, as applicable;	FLT 1.7.1, 2.1.10
b) Curricula to include: ground training, simulator training, aircraft training, evaluation and certification, line flying under supervision, and any specialized training;	FLT 1.7.1, 2.1.10
c) Comprehensive syllabi to include lesson plans, procedures for training and the conduct of evaluations;	FLT 1.7.1, 2.1.10
d) The training program for the development of knowledge and skills related to human performance (Crew Resource Management/Dispatch Resource Management, CRM/DRM).	FLT 1.7.1, 2.1.10
Other Information	ISARP
viii) Cabin safety and emergency procedures relevant to the flight crew.	FLT 1.7.1
ix) Dangerous Goods manual or parts relevant to the flight crew, to include information and instructions on the carriage of dangerous goods and action to be taken in the event of an emergency.	FLT 1.7.1
x) Security Manual or parts relevant to the flight crew, including bomb search procedures.	FLT 1.7.1
xi) Ground Handling Manual or parts relevant to the flight crew, if required for flight crew to accomplish assigned duties (recommendation only and only applicable to all cargo operations)	FLT 1.6.8

Table 2.3 – Flight Crew Qualification Requirements

Fulfillment of the following flight crew certifications, qualifications, training and currency requirements shall be recorded and retained in accordance with FLT 1.8.2, and monitored and considered when assigning flight crew members to duty in accordance with FLT 3.4.1.

- i) Licenses/certification;
- ii) Specific qualifications (LVP, RVSM);
- iii) Equipment qualifications (TCAS/ACAS, GPWS/EGPWS, HGS);
- iv) Recency-of-experience;
- v) Medical status, including Medical Certificate;
- vi) Initial training and checking/line check/proficiency check/recurrent training and checking results;
- vii) Right seat qualification;
- viii) Type(s) qualification;
- ix) Airport and route competence (including special airports);
- x) Instructor/evaluator/line check airman qualification;
- xi) CRM/Human Factors training;
- xii) Dangerous goods training;
- xiii) Security training;
- xiv) Accrued flight time, duty time, duty periods and completed rest periods for the purposes of fatigue management and compliance with operator or State flight and/or duty time limitations

Table 2.4 – (Intentionally open)

Table 2.5 – Route and Airport Knowledge Requirements

Each pilot crew member, in order to conform to the specifications of FLT 2.3.1 and/or FLT 2.4.1, shall have adequate knowledge of the following elements related to areas, routes or route segments, and airports to be used in operations:

- i) Terrain and minimum safe altitudes;
- ii) Seasonal meteorological conditions;
- iii) Meteorological, communication and air traffic facilities, services and procedures;
- iv) Search and rescue procedures;
- v) Navigational facilities and procedures, including any long-range navigation procedures associated with the route along which the flight is to take place;
- vi) Procedures applicable to flight paths over heavily populated areas and areas of high air traffic density;
- vii) Airport obstructions, physical layout, lighting, approach aids and arrival, departure, holding and instrument approach procedures and applicable operating minima.

Note: That portion of an evaluation relating to arrival, departure, holding and instrument approach procedures may be accomplished in an appropriate training device that is adequate for this purpose.

Table 2.6 – Elements of an Advanced Qualification Program (AQP) or Alternative Training and Qualification Program (ATQP)

The following elements shall be included as part of an AQP/ATQP as specified in FLT 2.1.1B.

- i) Training program and curricula approved or accepted by the State.
- ii) Training and evaluation which is conducted to the maximum extent possible in a full flight deck crew environment (e.g. Captain and First Officer). Qualification and continuing qualification curricula must include a line operational evaluation (LOE), which consists of a full flight scenario systematically designed to target specific technical and crew resource management (CRM) skills.
- iii) Mandatory evaluation of CRM proficiency and substandard performance on CRM factors shall be corrected by additional training. A demonstration of proficiency in maneuver oriented technical skills is a necessary but insufficient condition for pilot qualification. For pass/fail purposes, pilots must also demonstrate proficiency in LOE's, which test both technical and CRM skills together.
- iv) Specific training for instructors and evaluators, together with explicit training and evaluation strategies to verify the proficiency and standardization of such personnel for crew oriented, scenario-based training and evaluation tasks.
- v) Integrated use of advanced flight training equipment, including full flight simulators. Operators are encouraged to utilize a suite of equipment matched on the basis of analysis to the training requirements at any given stage of a curriculum.
- vi) Curriculum elements that are:
 - a) Defined;
 - b) Crew member-specific or personnel-specific;
 - c) Aircraft-specific. (See Note 1)

Note 1: Each curriculum must specify the make, model and series aircraft (or variant) and each crew member position or other positions to be covered by that curriculum. Positions to be covered by the program must include all flight crew member positions, instructors and evaluators and could include other positions, such as flight attendants, aircraft dispatchers and other operations personnel.

- vii) Separate curricula for indoctrination, qualification and continuing qualification.
- viii) CRM Training/Evaluation and Data Collection (feedback) to determine program effectiveness to include:
 - a) State-approved or -accepted Crew Resource Management (CRM) Training applicable to each position for which training is provided under the program;
 - b) State-approved or -accepted training on and evaluation of skills and proficiency of each person being trained under the program to use their crew resource management (CRM) skills and their technical (piloting or other) skills in an actual or simulated operations scenario. For flight crew members, this training and evaluation must be conducted in an approved flight training device or flight simulator;
 - c) Data collection procedures that will ensure the certificate holder provides information from its crew members, instructors and evaluators that will enable the State to determine whether the training and evaluations are working to accomplish the overall objectives of the curriculum;
 - d) Performance proficiency data collection on students, instructors, and evaluators and the conduct of airline internal analyzes of such information for the purpose of curriculum refinement and validation.

Table 2.6 – Elements of an Advanced Qualification Program (AQP) or Alternative Training and Qualification Program (ATQP) (cont.)

- ix) Defined airman certification and licensing requirements.
- x) Training devices and simulators used under the program evaluated against published standards and be approved or accepted by the State to ensure adequacy for training/qualification performed.
- xi) Program approval to include:
 - a) A demonstration to the Authority of how the program will provide an equivalent or superior level of safety for each curriculum item that differs from traditional training programs approved or accepted by the State.
 - b) A demonstration to the Authority for every requirement that is replaced by the program curriculum, of how the new curriculum provides an equivalent or superior level of safety for each requirement that is replaced. Each traditional training program requirement that is not specifically addressed in the program curriculum continues to apply to the Operator.
 - c) A requirement that training, qualification, or evaluation by a person who provides training by arrangement: “Training Centers” must be approved or accepted by the State.
- xii) Records in sufficient detail to establish the training, qualification and certification of each person qualified under the program in accordance with the approved training, qualification and certification requirements.”

Table 2.7 – Requirements of an Advanced Qualification Program (AQP) or Alternative Training and Qualification Program (ATQP)

The specifications in this table apply to an AQP/ATQP as specified in FLT 2.1.1B, and are in addition to those delineated in **Table 2.6**:

i) **Proficiency objectives**

The Operator shall conduct an aircraft-specific job task analysis beginning with the development of a comprehensive task listing for each duty position. The task listing covers the full range of conditions and contingencies - internal to the aircraft, external to the aircraft, normal, abnormal, and emergency - to which the pilot could be exposed within the Operator's sphere of operations. Proficiency objectives are then extracted from the task and subtask analysis, respectively, for each duty position, and include identification of applicable performance, standards, and conditions. The documentation of proficiency objectives also identify the references used, respectively, in defining performance, standards, and conditions for each.

An operator may elect to categorize certain proficiency objectives as currency items. Currency items refer to flight activities on which proficiency is maintained by virtue of frequent exercise during routine operations. Such items do not need to be addressed for training or proficiency evaluation purposes in periodic training sessions. However, verification is required that proficiency on such items is being maintained. Such verification might be obtained during line checks.

An operator could also elect to categorize proficiency objectives, including currency items, as critical or non-critical, based on operational significance and the consequences of error. This categorization is employed to determine the time interval within which training and evaluation on such items must occur for continuing qualification curricula. Critical proficiency objectives are trained and evaluated during an evaluation period the initial duration of which cannot exceed thirteen months. Each such evaluation period includes at least one training session. Non-critical terminal proficiency objectives may be distributed over a continuing qualification cycle the initial duration of which cannot exceed twenty-six months.

ii) **First Look Evaluations**

Performance on selected proficiency items will be evaluated prior to each formal training session and prior to any pre-briefing or practice. Such pre-evaluation data is used to determine the extent to which safety-critical skills might have decayed since previous training and/or checking, and provides a baseline for assessing degree of improvement attributable to subsequent training. Consistently poor pre-evaluation results occurring within the pilot group might indicate that curriculum modifications, including potentially the frequency and content of training, are warranted.

iii) **Continuing Qualification Cycles and Evaluation Periods**

After initial qualification, which incorporates training and evaluation on all proficiency objectives, follow-on training will occur within a scheduling interval called a continuing qualification cycle. This is the time period during which all proficiency objectives are trained, validated, or evaluated for all crewmembers. The initial approval for a continuing qualification cycle is no more than 26 months in duration, divided into two 13-month evaluation periods. All critical proficiency objectives are accomplished during each evaluation period, and all currency proficiency objectives are accomplished during each continuing qualification cycle.

The initial duration of a continuing qualification cycle is 26 months but it may be subsequently and incrementally extended by the Authority to a maximum of 39 months, contingent upon the results of performance proficiency data from each such cycle.

Table 2.7 – Requirements of an Advanced Qualification Program (AQP) or Alternative Training and Qualification Program (ATQP) (cont.)

Training Sessions

iv) Each evaluation period shall include a minimum of one training session, but may include more. Initially, training sessions cannot be more than 13 months apart.

v) **Proficiency Evaluations**

For PICs, SICs, flight engineers, and other persons covered by an AQP/ATQP, a proficiency evaluation shall be completed during each evaluation period. Typically, the proficiency evaluation will occur during a required training session; however, if more than one training session is completed during an evaluation period, the proficiency evaluation may be divided among training sessions or otherwise allocated to one or more such sessions.



SECTION 3 – OPERATIONAL CONTROL AND FLIGHT DISPATCH (DSP)

Applicability

Section 3 addresses the requirements for operational control of multi-engine; turbine, turbo-propeller or piston-propeller powered flights, and is applicable to an operator that conducts such flights whether operational control functions are conducted by the operator or conducted for the operator by an external organization (outsourced). Specific provisions of this section are applicable to an operator based on the system of operational control utilized by that operator, and the functions, duties or tasks of the personnel involved.

Table 3.1 categorizes personnel that are either delegated the authority to exercise operational control, assigned the overall responsibility for operational control, or assigned the individual responsibility to carry out specific functions, duties or tasks related to the operational control of each flight. All personnel utilized in operational control functions as specified in **Table 3.1**, *or that act in a manner consistent with the functional categories specified Table 3.1*, irrespective of management or post holder title, are subject to specified training and qualification provisions in this section relevant to the operational control function performed.

Where operational control functions, duties or tasks are outsourced to external service providers, an operator retains overall responsibility for operational control and will have processes to monitor applicable external service providers in accordance with DSP 1.11.2 to ensure requirements that affect operational control are being fulfilled.

Individual provisions or sub-specifications within a provision that:

- Begin with a conditional phrase (“If the Operator...”) are applicable if the operator meets the condition(s) stated in the phrase. The conditional phrase serves to define or limit the applicability of the provision (e.g., “If the operator utilizes...” or “If an FOO or FOA is utilized...”).
- Do not begin with a conditional phrase are applicable to all operators unless determined otherwise by the Auditor.

Individual provisions:

- That are applicable to all systems of operational control, but with differences in application to each system, will have those differences explained in the associated Guidance Material (GM).
- Containing the phrase “personnel responsible for operational control” or “personnel with responsibility for operational control” refer to any suitably qualified personnel with responsibility for operational control as designated by the operator, to include the pilot-in-command (PIC) unless otherwise annotated.
- Containing training and qualification requirements are applicable to personnel, other than the PIC, with responsibility for the operational control of flights. PIC training and qualification requirements for all systems of operational control are specified in ISM Section 2 (FLT).

General Guidance

Authority and Responsibility

For the purposes of this section *authority* is defined as the delegated power or right to command or direct, to make specific decisions, to grant permission and/or provide approval, and to control or modify a process.

For the purposes of this section *responsibility* is defined as the duty or obligation to perform an assigned function, duty, task or action. An assignment of responsibility typically also requires the delegation of an appropriate level of authority.

Operational Control

Operational control is defined as the exercise of authority to initiate, continue, divert or terminate a flight in the interest of the safety and security of the aircraft and its occupants. An operator may delegate the authority for a specific flight to qualified individual(s), but always retains overall responsibility for operational control. An operator may also assign the responsibility to carry out functions, duties, or tasks related to the operational control of each flight to identifiable, qualified and knowledgeable individual(s).

Individuals delegated the authority to make decisions regarding operational control would also be responsible (and accountable) for those decisions. Individuals assigned the responsibility to carry out specific functions, duties, or tasks related to the operational control of each flight are responsible (and accountable) for the proper execution of those functions, duties, or tasks as assigned by the operator.

Authority for Operational Control

In order to practically exercise operational control of flight operations an operator delegates the authority for the initiation, continuation, diversion or termination of each flight in the interest of the safety of the aircraft to competent individual(s). Such authority is typically delegated to individuals in conjunction with an operator's system of operational control, to include, as applicable:

- Shared systems, wherein operational control authority is shared between the pilot-in-command (PIC) **and** a flight operations officer/flight dispatcher (FOO) **or** designated member of management, such as the Director of Flight Operations (or other designated post holder);

***For example:** The FOO (or designated member of management, as applicable) has the authority to divert, delay or terminate a flight if in the judgment of the FOO, a designated member of management or the PIC, the flight cannot operate or continue to operate safely as planned or released.*

- Non-shared systems, wherein operational control authority is assigned **only** to the PIC.

***For example:** Only the PIC has the authority to terminate, delay, or divert a flight if in the judgment of the PIC the flight cannot operate or continue to operate safely as planned.*

Overall Responsibility for Operational Control

An operator always retains full responsibility (and accountability) for the overall operational control of each flight. As such, an operator may assign or outsource the responsibility to accomplish functions, duties or tasks related to the operational control of each flight, but never the operator's responsibility to exercise operational control over flight operations.

***For example:** When an operator assigns functions, duties or tasks related to the initiation, continuation, diversion and termination of a flight to employees or external service provider, such operator retains full responsibility and accountability for the proper execution of those functions, duties or tasks by ensuring:*

- *The training and qualification of such personnel meets any regulatory or operator requirements;*
- *Personnel are performing their duties diligently;*
- *The provisions of the Operations Manual are being complied with;*
- *An effective means of oversight is maintained to monitor the actions and/or inactions of such personnel for the purpose of ensuring operator guidance and policy is complied with.*

Responsibility for Operational Control of Each Flight

In order to practically exercise operational control of flight operations, an operator also assigns the responsibility for the initiation, continuation, diversion or termination of each flight (in the interest of the safety of the aircraft) to competent individuals. Such responsibility related to the operational control of each flight is assigned in conjunction with a system of operational control, to include, as applicable:

- Shared systems, wherein operational control responsibility for each flight **is shared** between the PIC **and** an FOO **or** designated member of management, such as the Director of Flight Operations (or other designated post holder);

For example: The FOO (or designated member of management) and the PIC are jointly responsible (and accountable) for the decisions, functions, duties or tasks associated with the operational control of a flight, such as pre-flight planning, load planning, weight and balance, delay, dispatch release, diversion, termination, etc.

- Non-shared systems, wherein the PIC is **solely** responsible for all decisions, functions, duties or tasks regarding operational control of each flight. The PIC, however, may act unassisted to carry out such functions, duties or tasks **or** be assisted by others, such as an FOO, flight operations assistant (FOA) or a member of management assigned the individual responsibility (by the Operator) to carry out specific functions, duties or tasks.

For example: The PIC is solely responsible (and accountable) for the decisions, functions, duties or tasks associated with the operational control of a flight, and the PIC:

- Acts unassisted to carry out functions, duties or tasks such as preflight planning, load planning, weight and balance, delay, dispatch release, diversion, termination, etc., **or**
- Is assisted by qualified personnel assigned the individual responsibility (by the operator) to carry out specific operational control functions, duties or tasks.

Individual Responsibility for Operational Control Functions, Duties, or Tasks

An operator typically assigns the individual responsibility to carry out specific functions, duties or tasks related to the operational control of each flight to identifiable, qualified and knowledgeable individuals. This responsibility is typically assigned to, in addition to the PIC (and FOO in a shared system), FOA personnel who support, brief and/or assist the PIC (and/or FOO in a shared system) in the safe conduct of each flight. Examples of operational control functions relevant to the safe conduct of a flight include Weather Analysts, Navigation Analysts/Flight Planning Specialists, Load Agents/Planners, Operations Coordinators/Planners, Maintenance controllers and Air Traffic Specialists.

FOA personnel are not to be confused with administrative personnel that lack operational control authority, have very limited responsibility, and who simply provide, collect or assemble operational documents or data on behalf of the PIC or the operator (e.g. gate agent).

Administrative personnel may be present in any system of operational control, are excluded from the initial and recurrent training and qualification provisions of this section, and may be qualified as competent through on-the-job training (OJT), meeting criteria as specified in a job description, or through the mandatory use of written instruments such as task cards, guidelines, or checklists.

Table 3.1 categorizes operational control personnel, defines their authority, identifies their responsibilities and illustrates the relationship of such responsibilities to the operation as a whole.

Table 3.5 defines the competencies of individuals assigned the responsibility for operational control and/or the responsibility to carry out individual operational control functions, duties or tasks.

Definitions, Abbreviations, Acronyms

Definitions of technical terms used in this ISM Section 3, as well as the meaning of abbreviations and acronyms, are found in the IATA Reference Manual for Audit Programs (IRM).

1 Management and Control

1.1 Management System

DSP 1.1.1 The Operator shall have a management system that ensures:

- i) Management of safety and security in flight operations;
- ii) Supervision and control of all flights, operational control functions and other associated activities;
- iii) Compliance with standards of the Operator and requirements of the State and other applicable authorities. (GM) →

Guidance

Refer to the IRM for the definitions of *Operational Control*, *Operator* and *State*.

Refer to Guidance associated with ORG 1.1.1 located in ISM Section 1.

The specification in item i) ensures the management system addresses the elements of operational safety and security specifically related to the operational control of flights. Safety and security management at this operational level typically occurs within the greater context of the operator's overall or corporate safety and/or security management plan. For example, the overall requirements for the dissemination of security information would typically be specified in an operator's security plan, but the actual dissemination of such information to operational control personnel would occur under the supervision of those individuals with assigned responsibilities related to the operational control of flights (e.g., the transmission of security alerts to aircraft).

Applicable authorities as specified in item iii) refer to authorities that have jurisdiction over international operations conducted by an operator over the high seas or the territory of a state that is other than the State of the Operator.

1.2 State Requirements

DSP 1.2.1 If required by the Authority, the Operator shall have a procedure to ensure the Operations Manual (OM), to include amendments and/or revisions, is submitted to the Authority for acceptance or approval. (GM)

Guidance

Refer to the IRM for the definitions of *Operations Manual*, *State Acceptance* and *State Approval*.

1.3 Authorities and Responsibilities

DSP 1.3.1 The Operator shall ensure authorities and responsibilities for the operational control of flights are defined and communicated throughout the organization, to include the authorities and responsibilities of:

- i) The pilot-in-command (PIC);
- ii) If applicable, the flight operations officer (FOO), designated member of management and/or flight operations assistant (FOA) who supports, briefs and/or assists the PIC or FOO in the safe conduct of each flight. (GM) →

Guidance

Refer to the IRM for definitions of *Flight Operations Officer (FOO)*, *Flight Operations Assistant (FOA)* and *Post Holder*.

The specification in item ii) refers to a designated member of management in a shared system of operational control (e.g. director of flight operations or other designated post holder) that shares authority and responsibility for the operational control of a flight with the PIC.

Refer to Guidance associated with ORG 1.3.1 located in ISM Section 1.

The authorities and responsibilities for operational control are communicated throughout the organization(s), as are responsibilities related to the operational control of flights. The entities that receive such information are dependent upon the system of operational control but always include the flight operations organization.

Refer to **Table 3.1** for the definitions, duties and responsibilities of operational control personnel.

PIC roles and responsibilities are specified in ISM Section 2 (FLT).

Duties and responsibilities of FOO and/or FOA personnel, and a designated member of management, include a definition of the working relationship with the PIC (e.g., the joint responsibility of the PIC, FOO and, if applicable, designated member of management in a shared system of operational control).

Refer to Guidance associated with ORG 1.4.1 located in ISM Section 1 regarding the need for internal communication.

Refer to the legend of **Table 3.1** for examples of operational control personnel who support or assist the FOO and/or PIC.

DSP 1.3.2 The Operator shall have a process and/or procedure for the delegation of duties within the management system for operational control that ensures managerial continuity is maintained when managers responsible for operational control are absent from the workplace. (GM) →

Guidance

Refer to Guidance associated with ORG 1.3.2 located in ISM Section 1.

The operational managers subject to the specifications of this provision include, as a minimum:

- Managerial personnel, as defined by the operator, required to ensure the operational control of each flight;
- If applicable, nominated post holders as required by the Authority.

DSP 1.3.3 The Operator shall ensure a delegation of authority and assignment of responsibility within the management system for liaison with regulatory authorities, original equipment manufacturers and other external entities relevant to operational control. →

DSP 1.3.4 The Operator shall delegate the authority for operational control of each flight only to suitably qualified individuals, to include **either**:

- i) The PIC and FOO in a shared system of operational control that requires the use of FOO personnel, **or**
- ii) The PIC and a designated member of management in a shared system of operational control that requires the use such management personnel, **or**
- iii) The PIC in a non-shared system of operational control. (GM)

Guidance

Refer to General Guidance in the beginning this section for the definition of *Authority*, as well as the explanation of *Authority for Operational Control*.

The intent of this provision is to ensure an operator delegates the authority to initiate, continue, divert or terminate a flight in the interest of the safety and security of the aircraft and its occupants (operational control) only to appropriately qualified individuals.

The following examples of operational control systems are provided as a means to identify how authority is typically delegated by an operator in conjunction with a system of operational control:

- Shared system in which operational control **authority** is shared between the PIC and a flight operations officer/flight dispatcher (FOO) or designated member of management, for example:
 - **PIC-FOO Full Shared System:** The PIC and FOO have **joint authority** over the decisions functions, duties or tasks associated with the operational control of a flight. Such systems employ flight monitoring and a dedicated communications system (voice or electronic) separate from the ATC system in order to maintain shared authority;
 - **PIC-FOO Partial Shared System:** the PIC and FOO have **joint authority** over all preflight decisions functions, duties or tasks associated with the operational control of a flight, but during flight the PIC has sole authority. Such systems employ flight monitoring if required by the Authority or desired by the Operator;
 - **PIC-Management Shared System:** The PIC and a designated member of management, often the Director of Flight Operations or any suitably qualified and

knowledgeable member of management designated by the operator have **Joint authority** over the decisions functions, duties or tasks associated with the operational control of a flight.

- Non-shared systems in which operational control **authority** is delegated only to the PIC who may or may not be assisted by other support personnel, for example;
 - **PIC-only System:** The PIC has **sole authority** over any and all decisions and completes all tasks (unassisted) related to the operational control of each flight. This does not preclude administrative personnel from providing, collecting or assembling operational documents or data related to each flight on behalf of the PIC and as defined in **Table 3.1**. Such systems may employ flight monitoring if required by the Authority or desired by the Operator;
 - **PIC-assisted System:** The PIC has **sole authority** over any and all decisions regarding operational control. However, the PIC is assisted by others, such as an FOO, FOA or a member of management assigned the responsibility to carry out specific functions, duties or tasks, such as flight planning, flight support, briefing and in-flight monitoring. Such systems employ flight monitoring if required by the Authority or desired by the Operator.

The system of operational control is approved or accepted by the State.

Table 3.1 categorizes operational control personnel, defines their authority, identifies their responsibilities and illustrates the relationship of such responsibilities to the operation as a whole.

DSP 1.3.5 The Operator shall retain the overall responsibility for operational control of each flight and assign the responsibility to carry out functions, duties or tasks related to the operational control of each flight only to suitably qualified personnel as defined in **Table 3.1**, to include:

- i) If the Operator has a shared system of operational control responsibility, **either**:
 - a) The PIC and an FOO, who share overall operational control responsibility with the PIC and/or supports, briefs and/or assists the PIC in the safe conduct of each flight, **or**
 - b) The PIC and a designated member of management who shares overall operational control responsibility with the PIC and/or supports, briefs and/or assists the PIC or FOO in the safe conduct of each flight.
- ii) If the Operator has a non-shared system of operational control responsibility, **either**:
 - a) The PIC and an FOO who supports, briefs and/or assists the PIC in the safe conduct of each flight, **or**
 - b) The PIC and a designated member of management who briefs and/or assists the PIC or FOO in the safe conduct of each flight, **or**;
 - c) The PIC and FOA personnel who support, brief and/or assist the PIC or FOO in the safe conduct of each flight, **or**;
 - d) The PIC and administrative personnel who do not support, brief and/or assist the PIC or FOO, but provide, collect or assemble operational documents or data relevant to the conduct of each flight, **or**
 - e) The PIC alone, who has sole responsibility over all functions, duties or tasks regarding the operational control of each flight. (GM)

Guidance

Refer to General Guidance in the beginning this section for the definition of *Responsibility*, as well as the explanations of *Overall Responsibility for Operational Control*, *Responsibility for Operational Control of Each Flight*, and *Individual Responsibility for Operational Control Functions, Duties or Tasks*.

The intent of this provision is to illustrate the various ways operational control responsibilities can be assigned by an operator and to ensure only suitably trained and qualified individuals, in addition to the PIC, are assigned overall responsibility for operational control or the responsibility to carry out functions, duties or tasks related to the operational control of each flight.

The specifications of this provision apply irrespective of post holder titles or whether personnel positions are described in the OM. If personnel are assigned the responsibility to carry out operational control functions, duties or tasks, and act in a manner consistent with the specifications of this provision or the descriptions found in **Table 3.1**, the specifications of this provision are applicable, as well as the specifications of ensuing provisions that require such personnel to be trained and qualified for the operational control responsibilities, functions, duties or tasks that they are performing.

Examples of operational control systems are provided as a means to identify how responsibility is typically assigned by an operator.

- Shared system in which operational control **responsibility** is shared between the PIC and an FOO or designated member of management, for example:
 - **PIC-FOO Full Shared System:** The PIC and FOO are **jointly responsible** for the decisions, functions, duties or tasks associated with the operational control of a flight. Such systems employ flight monitoring and a dedicated communications system (voice or electronic) separate from the ATC system in order to maintain joint responsibility.
 - **PIC-FOO Partial Shared System:** the PIC and FOO are **jointly responsible** for all preflight decisions, functions, duties or tasks associated with the operational control of a flight, but during flight the PIC has sole responsibility. Such systems employ flight monitoring if required by the Authority or desired by the Operator.
 - **PIC-Management Shared System:** The PIC and a designated member of management, often the Director of Flight Operations or any suitably qualified and knowledgeable member of management designated by the operator are **jointly responsible** for the functions, duties or tasks associated with the operational control of a flight. The responsibility to carry out actual functions, duties or tasks such as flight planning, supporting/briefing the crew or flight monitoring is typically assigned to other non-management personnel such as FOOs or FOAs. Such systems employ flight monitoring if required by the Authority or desired by the Operator.
- Non-shared systems in which operational control **responsibility** is assigned only to the PIC who may or may not be assisted by other support personnel, for example;
 - **PIC-only System:** The PIC is **solely responsible** for completing all tasks (unassisted) related to the operational control of each flight. This does not preclude administrative personnel from providing, collecting or assembling operational documents or data related to each flight on behalf of the PIC as defined in **Table 3.1**. Such systems employ flight monitoring if required by the Authority or desired by the Operator.
 - **PIC-assisted System:** The PIC is **solely responsible** for all decisions regarding operational control. However, the PIC may be assisted by others, such as an FOO, FOA or a member of management assigned the responsibility to carry out specific functions, duties or tasks, such as flight planning, support, briefing and in-flight monitoring. Such systems employ flight monitoring if required by the Authority or desired by the Operator.

When operational control functions are outsourced to external service providers, an operator retains overall responsibility for operational control and would ensure such service providers are subjected to contractual and monitoring processes as specified in DSP 1.11.1 and 1.11.2.

Table 3.1 categorizes operational control personnel, defines their authority, identifies their responsibilities and illustrates the relationship of such responsibilities to the operation as a whole.

Table 3.5 defines the competencies of individuals assigned the responsibility for operational control and/or the responsibility to carry out individual operational control functions, duties or tasks.

FOO and/or FOA responsibilities for operational control typically begin when assigned a flight during flight preparation and end after flight termination.

FOA personnel may be assigned specific flight responsibilities depending on area of expertise or general (non-flight specific) responsibilities in support of other operational control personnel or functions.

The responsibilities of administrative personnel utilized in operational control functions are limited to the provision or collection of operational data.

DSP 1.3.6 If an FOO is utilized in the system of operational control, the Operator shall assign responsibility to such personnel for:

- i) Assisting the PIC in flight preparation and providing required information;
- ii) Assisting the PIC in preparing the operational and ATS flight plans;
- iii) When applicable, signing the operational and ATS flight plans;
- iv) Filing the ATS flight plan with the appropriate ATS unit;
- v) Furnishing the PIC, while in flight, with appropriate information that may be necessary for the safe conduct of the flight;
- vi) In the event of an emergency, initiating relevant procedures as specified in the OM. (GM)

Guidance

The specifications of this provision apply to FOO personnel employed in operational control functions.

The authority and responsibilities of an FOO are defined in **Table 3.1**.

One or more of these responsibilities may be delegated to an FOA.

The specification in item iv) may be satisfied by the PIC.

The specification in item v) may be satisfied by the PIC, if access to such information is available from other sources.

DSP 1.3.7 The Operator shall ensure, in the event of an emergency situation that endangers the safety of the aircraft or persons, and which becomes known first to the Operator, the FOO, FOA or other delegated person is assigned responsibility for implementation of action in accordance with DSP 1.3.8, to include, where necessary:

- i) Initiation of emergency procedures, as outlined in the OM;
- ii) Notification to the appropriate authorities, without delay, of the nature of the situation;
- iii) A request for assistance, if required. (GM)

Guidance

The specification in item i) refers to notification to the appropriate authorities without delay and/or within a period(s) specified by each applicable authority.

Applicable authorities include those authorities that have jurisdiction over international operations conducted by an operator over the high seas or the territory of a state that is other than the State of the Operator.

DSP 1.3.8 The Operator shall have a process to ensure, in the event of an emergency, the FOO, FOA or other delegated person:

- i) Initiates procedures as outlined in the OM, while avoiding taking any action that would conflict with ATC procedures;
- ii) Conveys, by any available means, safety-related information to the PIC that may be necessary for the safe conduct of the flight, including information related to any amendments to the flight plan that become necessary in the course of the flight. (GM)

Guidance

Processes used for operational control of flights in the event of an emergency would be compatible with any operating procedures that have been established by the agencies providing system services for air traffic control. Such compatibility is necessary to avoid conflict and ensure an effective exchange of information between the operator and any of the service agencies.

During an operational emergency, the procedures specified in item i) would be designed to not conflict with ATC procedures, such as separation standards, controller instructions, minimum flight altitude assignments or any other restrictions imposed by ATC. During an emergency, however, the PIC may exercise emergency authority and take any action necessary in the interest of the safety of the passengers and aircraft. This would not preclude the PIC, in accordance with requirements of the applicable authorities, from taking any action necessary during an emergency in the interest of the safety of the passengers and aircraft.

It is important for the PIC to convey relevant information to the FOO, FOA or other delegated person during the course of the flight, particularly in the context of emergency situations.

1.4 Communication and Coordination

DSP 1.4.1 The Operator shall have a communication system that enables an exchange of information relevant to operational control throughout the management system and in areas where operations are conducted. (GM) →

Guidance

Refer to Guidance associated with ORG 1.4.1 located in ISM Section 1.

The specifications of this provision may be satisfied by the flight operations organization and/or other organization(s) with responsibilities related to the operational control of flights.

This specification also applies to coordination among appropriate managerial personnel associated with supervision of operational control.

DSP 1.4.2 The Operator shall have a system that ensures operational control personnel have access to information relevant to the safe conduct of each flight, to include information associated with:

- i) The aircraft (MEL, maintenance);
- ii) Meteorology;
- iii) Safety (current accident and incident notification procedures);
- iv) Routes, including over water and critical terrain (NOTAMs, facilities, outages);
- v) Air Traffic Services (ATS). (GM)

Guidance

The specifications of this provision apply to the PIC, FOO and FOA, whose job functions require access to information in one or more of the areas specified.

DSP 1.4.3 The Operator shall have a communication system that ensures the FOO, FOA and/or other person delegated responsibilities in accordance with DSP 1.3.7 and 1.3.8 are provided with current accident and incident notification procedures.

1.5 Provision of Resources

DSP 1.5.1 The Operator shall have the necessary facilities, workspace, equipment and supporting services, as well as work environment, to satisfy operational control safety and security requirements. (GM) →

Guidance

Refer to Guidance associated with ORG 1.6.1 located in ISM Section 1.

The specifications of this provision refer only to the infrastructure and resource requirements that would be necessary to deliver safe and secure flight operations, to include operational control and support facilities, services and equipment.

The specifications of this provision may be satisfied by the flight operations organization and/or other organization(s) with responsibilities related to the operational control of flights.

DSP 1.5.2 The Operator shall ensure management and non-management operational control positions within the organization that require the performance of functions relevant to the safety of flights are filled by personnel on the basis of knowledge, skills, training and experience appropriate for the position. (GM) →

Guidance

Refer to Guidance associated with ORG 1.6.2 located in ISM Section 1.

The operational control positions subject to the specifications of this provision include, as a minimum:

- Managerial personnel, as defined by the operator, required to ensure control and supervision of flight operations in accordance with DSP 1.1.1;
- Nominated post holders as required by the Authority if applicable;

FOO knowledge, skill and experience requirements are in accordance with DSP 1.5.5, 1.5.6 and, 1.5.8.

FOA knowledge, skill and experience requirements are in accordance with DSP 1.5.7 and 1.5.8.

FOO and FOA training requirements are in accordance with the applicable provisions of Subsection 2, Training and Qualification.

PIC knowledge, skill, experience and training requirements are in accordance with the applicable provisions of ISM Section 2 (FLT), Subsection 2, Training and Qualification.

DSP 1.5.3 The Operator shall have a process to ensure applicants hired in operational control functions are required to demonstrate the capability of speaking and reading in a language that will permit communication with other areas within the organization relevant to operational control.

DSP 1.5.4 If a licensed FOO is utilized in the system of operational control, the Operator shall ensure each FOO, prior to being assigned to operational control duties, holds a valid Flight Operations Officer or Flight Dispatcher license issued or recognized by the State. (GM)

Guidance

The specifications of this provision apply only to FOO personnel who require licensing or certification by the State in order to participate in an approved or accepted system of operational control.

DSP 1.5.5 If an FOO is utilized in the system of operational control, the Operator shall ensure such personnel, prior to being assigned to operational control duties:

- i) As applicable, meet minimum age, knowledge, experience and skill requirements of the State;
- ii) Have demonstrated knowledge and/or proficiency in *all* competencies of operational control, as specified in **Table 3.5**;
- iii) Have demonstrated the ability to analyze weather, create accurate flight plans and provide assistance to flights;
- iv) Complete an observation flight or simulator observation in accordance with DSP **2.3.4**. (GM)

Guidance

The specifications of this provision apply to each FOO, whether licensed or not, that participates in an approved or accepted system of operational control.

DSP 1.5.6 If an FOO is utilized in the system of operational control, the Operator *should* ensure personnel hired to perform the FOO functions are not less than 21 years of age and **either**:

- i) Have, as a minimum, one year of experience as an assistant in the operational control of air transport flights, **or**
- ii) Have satisfactorily completed a formal training course as a flight operations officer or flight dispatcher, **or**
- iii) Have, as a minimum, a total of two years service in any one or combination of the following:
 - a) Flight crew member in air transport operations;
 - b) Meteorologist in an organization dispatching aircraft;
 - c) Air traffic controller;
 - d) Technical supervisor of FOO personnel;
 - e) Technical supervisor of air transportation systems. (GM)

Guidance

The specifications of this provision apply to each FOO, whether licensed or not, who participates in an approved or accepted system of operational control.

DSP 1.5.7 If an FOA is utilized in the system of operational control to support or assist the PIC or FOO in specific areas of competency, the Operator shall ensure such personnel, prior to being assigned duties in an operational control function, have received training for their specific area of competency and:

- i) As applicable, meet minimum age, knowledge, experience and skill requirements of the Authority;
- ii) Have demonstrated knowledge and/or proficiency in the competencies of operational control appropriate to any assignment of duties, as specified in **Table 3.5**;
- iii) Have demonstrated the ability to provide assistance, in their specific area of competency, to the PIC and/or FOO, as applicable. (GM)

Guidance

The specifications of this provision apply only to FOA personnel who support or assist the PIC or FOO.

FOA personnel need only demonstrate knowledge and ability to assist flights in their area(s) of competence.

DSP 1.5.8 If an FOO or FOA is utilized in the system of operational control, the Operator shall have a process to ensure such personnel, as applicable, prior to being assigned duties in an operational control function;

- i) Are trained to a minimum experience level acceptable to the Operator and/or State;
- ii) Have demonstrated proficiency in the performance of the applicable operational control function(s) under the supervision of qualified operational control personnel. (GM)

Guidance

Newly hired operational control personnel may include individuals who already work for the operator in another area, that have worked in an operational control position or function for another operator, or that are newly trained and newly hired, having never worked in an operational control function.

The minimum amount of time needed to demonstrate proficiency under the supervision of qualified operational control personnel will depend on the operational control function being provided and the requirements of the operator and/or State.

The operator may use an evaluation or check to determine that knowledge competencies of applicable areas are attained by each individual assigned to an operational control function.

Results of any evaluations are documented and retained in accordance with DSP 1.8.1.

DSP 1.5.9 If an FOO, FOA, or other personnel that support or assist in the operational control of flights are utilized in the system of operational control, the Operator shall have a policy regarding the use of psychoactive substances by such personnel, as applicable, which, as a minimum:

- i) Prohibits the exercise of duties while under the influence of psychoactive substances;
- ii) Prohibits the problematic use psychoactive substances;
- iii) Requires that all personnel who are identified as engaging in any kind of problematic use of psychoactive substances are removed from safety-critical functions;
- iv) Conforms to the requirements of the Authority. (GM)

Guidance

Refer to the IRM for the definitions of *Biochemical Testing*, *Psychoactive Substance* and *Problematic Use of Substances*.

Operators subject to laws or regulations of the State that preclude the publication of a psychoactive substance prohibition policy as specified in this provision may demonstrate an equivalent method of ensuring that personnel engaging in any kind of problematic use of psychoactive substance abuse do not exercise their duties and are removed from safety-critical functions.

Re-instatement to safety-critical duties is possible after cessation of the problematic use and upon determination continued performance is unlikely to jeopardize safety.

Examples of other subjects that might be addressed in a comprehensive and proactive policy include:

- Education regarding the use of psychoactive substances;
- Identification, treatment and rehabilitation;
- Employment consequences of problematic use of psychoactive substances;

- Biochemical testing;
- Requirements of ICAO and the Authority. (GM)

Additional guidance may be found in the *ICAO Manual on Prevention of Problematic use of Substances in the Aviation Workplace* (Doc 9654-AN/945).

1.6 Documentation System

DSP 1.6.1 The Operator shall have a system for the management and control of documentation and/or data used directly in the conduct or support of operational control, to include processes for:

- i) Identifying the version of operational documents;
- ii) Distribution that ensures the availability of the current version of the OM:
 - a) To appropriate operational control personnel.
 - b) If the operator outsources operational control functions, to external service providers.
- iii) Review and revision as necessary, to maintain the currency of information contained in documents;
- iv) Document retention that permits easy reference and accessibility;
- v) Identification and control of obsolete and/or reproduced documents;
- vi) Retention and dissemination of documentation received from external sources, to include manuals and documents from regulatory authorities and original equipment manufacturers. (GM) →

Guidance

Refer to Guidance associated with ORG 2.1.1 located in ISM Section 1.

The specifications of this provision may be satisfied by the flight operations organization documentation management and control system, if such system is used in conjunction with the operator's system of operational control.

Internal documents are subject to management and control.

Refer to DSP 1.6.2 and DSP 1.6.3 for a description of the documents subject to management and/or control.

The specifications in item vi):

- Are managed by the operator and controlled by the issuing entity.
- Include applicable regulations and associated documents, original manufacturer's manuals and documents and/or data produced externally for the operator.
- Typically include dangerous goods documents, route and airports charts, FMS databases, airport analysis data, weight/mass and balance data and performance data.

This provision refers to the library, which may be any organized system for documentation retention, and which contains current manuals, regulatory publications and other essential documents associated with operational control.

DSP 1.6.2 The Operator shall ensure the management and control system for operational control documentation specified in DSP 1.6.1 addresses, as a minimum:

- i) The OM;
- ii) Other documents that are referenced in the OM and contain information and/or guidance relevant to operational control personnel. (GM)

Guidance

The specifications of this provision may be satisfied by the flight operations organization documentation management and control system, if used in conjunction with an operator's system of operational control.

Internal documents are subject to management and control.

DSP 1.6.3 The Operator shall ensure the management and control system for operational control documentation specified in DSP 1.6.1 addresses, as a minimum, the following documents from external sources:

- i) As applicable, regulations of the State of the Operator and of other states or authorities relevant to operations;
- ii) As applicable, ICAO International Standards and Recommended Practices;
- iii) Airworthiness Directives;
- iv) Aeronautical Information Publications, including NOTAMS;
- v) State-approved or -accepted Aircraft Flight Manuals (AFM);
- vi) Manufacturer's aircraft operating manuals, including performance data, weight and balance data/manuals, checklists and MEL/CDL;
- vii) As applicable, other manufacturer's operational communications. (GM)

Guidance

Refer to the IRM for the definitions of *Aeronautical Information Publication (AIP)*, *Approved Flight Manual*, *Airworthiness Directive (AD)*, *Configuration Deviation List (CDL)*, *Minimum Equipment List (MEL)*, *State Acceptance* and *State Approval*.

The specifications in item i) and ii) refer to applicable regulations imposed on the operator by other states or authorities (e.g., FAR 129). Applicable authorities include those authorities that have jurisdiction over international operations conducted by an operator over the high seas or the territory of a state that is other than the State of the Operator.

The specifications of this provision may be satisfied by the flight operations organization documentation management and control system, if used in conjunction with the operator's system of operational control.

External documents are managed by the operator in accordance with specifications vi) and vii) of DSP 1.6.1 and controlled by the issuing entity.

The specification in item vii) refers to bulletins or directives distributed by the manufacturer for the purposes of amending aircraft technical specifications and/or operating procedures.

DSP 1.6.4 The Operator shall ensure documentation used in the conduct or support of operational control:

- i) Is identifiable and accessible to operational control personnel;
- ii) Contains legible and accurate information;
- iii) Is written in language(s) understood by operational personnel;
- iv) Is presented in a format that meets the needs of operational control personnel;
- v) Is accepted or approved by the Authority. (GM) →

Guidance

The intent of this provision is for an operator to provide operational documentation in a form that is acceptable to the Authority and useable by all relevant personnel.

Documentation used in the support of operations control may:

- Exist in electronic form;

- Be issued in more than one language.

DSP 1.6.5 If the Operator utilizes an electronic system for the management and control of any documentation and/or data used directly in the operational control of flights, the Operator shall ensure the system provides for a scheduled generation of back-up files for such documentation or data. (GM) →

Guidance

Refer to Guidance associated with ORG 2.1.2 located in ISM Section 1.

1.7 Operations Manual

DSP 1.7.1 The Operator shall have an Operations Manual (OM) for the use of operational control personnel, which may be issued in separate parts, and which contains the policies, procedures and other guidance or information necessary for compliance with applicable regulations, laws, rules and Operator standards. As a minimum, the content of the OM shall be in accordance with the specifications in DSP 1.6.4 and **Table 3.2**. (GM)

Guidance

Refer to the FLT 1.7.3 and associated guidance for human factors principles observed in the design of the OM.

DSP 1.7.2 The Operator shall have a description of the Operational Flight Plan (OFP) or equivalent document that is published in the OM and includes:

- i) Guidance for use by operational control personnel;
- ii) An outline of the content in accordance with specifications in **Table 3.3**. (GM)

Guidance

Items readily available in other documentation, obtained from another acceptable source or irrelevant to the type of operation may be omitted from the OFP.

DSP 1.7.3 The Operator shall ensure those parts of the OM relevant to operational control personnel are clearly identified and defined.

DSP 1.7.4 If an FOO or FOA is utilized in the system of operational control, the Operator shall have guidance and procedures to enable such personnel, as applicable, to comply with the conditions and limitations specified in the AOC. (GM)

Guidance

Refer to Guidance associated with FLT 1.2.1 for information on the content of the AOC, to include conditions and limitations.

The conditions and limitations of the AOC are to be available in documentation available to flight operations officers/flight dispatchers (FOO) and/or flight operations assistant (FOA) if the operator's system of operational control requires their use.

1.8 Records System

DSP 1.8.1 The Operator shall have a system for the management and control of operational control records to ensure the content and retention of such records is in accordance with requirements of the Authority, as applicable, and to ensure operational records are subjected to standardized processes for:

- i) Identification;
- ii) Legibility;
- iii) Maintenance;
- iv) Retention and retrieval;

- v) Protection and security;
- vi) Disposal, deletion (electronic records) and archiving. (GM) →

Guidance

Refer to guidance associated with ORG 2.2.1 located in ISM Section 1.

DSP 1.8.2 The Operator shall ensure the system for the management and control of operational control records as specified in DSP 1.8.1 addresses, as a minimum, records that document or include:

- i) Operational information and data for each flight specified in DSP 1.8.4 and Table 3.4;
- ii) Operational control communication records specified in DSP 1.8.5;
- iii) The fulfillment of FOO and/or FOA qualification requirements specified in DSP 1.8.6, 1.8.7, 1.8.8 and 1.8.9, as applicable;
- iv) A signed copy of the OFP, as specified in DSP 3.2.5.

Guidance

The specifications in items i), iv) and v) may be satisfied by the flight operations organization records system, if used in conjunction with the operator's system of operational control.

DSP 1.8.3 If the Operator utilizes an electronic system for the management and control of operational control records, the Operator shall ensure the system provides for a scheduled generation of back-up record files. (GM) →

Guidance

Refer to Guidance associated with ORG 2.2.2 located in ISM Section 1.

DSP 1.8.4 The Operator shall have a process or procedures to record and retain, for a period of time determined by the Operator or the Authority, operational information and data for each flight, and, as a minimum, such retained flight information and data shall be in accordance with the specifications in **Table 3.4**. (GM)

Guidance

Operational information and data may be retained by different means (e.g. ACARS logs, paper logs, manually, computer systems).

DSP 1.8.5 The Operator shall have a process or procedures to ensure copies of communications records associated with operational control are retained for a period of time determined by the Operator or the Authority. (GM)

Guidance

The communications typically subject to the record keeping specifications of this provision include operational voice, text, or data communications to/from:

- Flights from the period beginning at the originating station when flight crew begins their duties on the flight deck until the flight crew finishes their duties on the flight deck at the terminating station;
- If applicable, the operations control center.

DSP 1.8.6 If an FOO or FOA is utilized in the system of operational control, the Operator shall ensure training records for such personnel, as applicable, are managed in accordance with DSP 1.8.1, to include records that document completion of:

- i) Initial qualification;
- ii) Continuing qualification. (GM)

Guidance

Initial qualification training records are retained permanently while an individual is employed by an operator, unless required otherwise by the Authority.

Continuing qualification (recurrent) training records are retained for three years to ensure that the subjects required in DSP 2.2.2 have been covered during that time period.

PIC training records are addressed in ISM Section 2 (FLT).

DSP 1.8.7 If an FOO or FOA is utilized in the system of operational control, the Operator shall have a process to maintain records that document completion of an annual competency evaluation by such personnel, as applicable, for a period in accordance with requirements of the Authority, but not less than one year.

DSP 1.8.8 If the Operator has a flight deck familiarization program for FOO personnel in accordance with DSP 2.3.4, the Operator *should* have a procedure to retain a record of the operational flight deck familiarization activities completed by each FOO for a period of time in accordance with requirements of the Operator and/or Authority.

DSP 1.8.9 If a licensed FOO is utilized in the system of operational control, the Operator shall have a procedure to retain a copy of the license of each FOO for a period of time, in accordance with the requirements of the Operator and/or Authority. (GM)

Guidance

This provision is only applicable to operators that have a state requirement for licensing of FOO personnel in conjunction with an approved system of operational control.

1.9 (Intentionally open)

1.10 Quality Assurance Program

DSP 1.10.1 The Operator shall have a quality assurance program that provides for the auditing and evaluation of the management system and operational control functions at planned intervals to ensure the organization(s) with responsibility for operational control is(are):

- i) Complying with applicable regulations and standards of the Operator;
- ii) Satisfying stated operational control needs;
- iii) Identifying areas requiring improvement;
- iv) Identifying hazards to operations. [SMS] (GM) →

Guidance

Refer to the IRM for the definition of *Quality Assurance*.

Refer to Guidance associated with ORG 3.4.1 located in ISM Section 1 for typical audit program requirements.

Refer to Table 3.1 for examples of operational control functions that could be subjected to audit and evaluation as part of an operator's quality assurance program.

Previous audit results could be made available by the operator as evidence of program implementation.

Audit records generated by the quality assurance program would be managed and controlled in accordance with DSP 1.8.1

The management systems responsible for operational control might vary according to the operator and/or State.

If operational control is under the flight operations management system, refer to ISM Section 2 (FLT), Subsection 1.10.

DSP 1.10.2 The Operator shall have an audit planning process and sufficient resources to ensure audits of operational control functions are:

- i) Scheduled at intervals that meet management system requirements;
- ii) Completed within a specified time period. (GM) →

Guidance

Refer to Guidance associated with ORG 3.4.10 located in ISM Section 1.

Intervals of surveillance activities might vary depending on the operator.

Previous outcomes would typically be considered in determining audit intervals.

DSP 1.10.3 The Operator shall have a process to ensure significant issues arising from quality assurance audits of operational control functions are subject to management review in accordance with ORG 1.5.1 and, as applicable, ORG 1.5.2. [SMS] (GM) →

Guidance

Refer to ORG 1.5.1, 1.5.2, 3.4.4 and associated Guidance located in ISM Section 1.

Significant issues would be defined by the operator, but are typically regarded as those issues that could affect the safety and/or or quality of operations.

DSP 1.10.4 The Operator shall have a process for addressing findings that result from audits of operational control functions, which ensures:

- i) Identification of root cause(s);
- ii) Development of corrective action as appropriate to address the finding(s);
- iii) Implementation of corrective action in appropriate operational areas;
- iv) Evaluation of corrective action to determine effectiveness. →

1.11 Outsourcing and Product Quality Control

DSP 1.11.1 If the Operator has external service providers conduct outsourced functions associated with the operational control of flights, the Operator shall have a process to ensure a contract or agreement is executed with such external service providers. Such contract(s) or agreement(s) shall identify measurable specifications that can be monitored by the Operator, to ensure requirements that affect the safety of flight operations are being fulfilled by the service provider. (GM) →

Guidance

Refer to Guidance associated with ORG 3.5.1 located in ISM Section 1.

Examples of functions that might be outsourced typically include flight planning, flight monitoring, weather provider and/or weight and balance provider.

DSP 1.11.2 If the Operator has external service providers conduct operational functions associated with the operational control of flights, the Operator shall have a process to monitor such external service providers, to ensure requirements that affect the safety of flight operations are being fulfilled. (GM) →

Guidance

Refer to Guidance associated with ORG 3.5.2 located in ISM Section 1.

An operator would typically use external auditing as the preferred process for the monitoring and control of external organizations.

DSP 1.11.3 The Operator *should* have a process to ensure data or products relevant to the safety of aircraft operations that are purchased or otherwise acquired from an external vendor or supplier (other than electronic navigation data products as specified in DSP 1.11.4) meet the

product technical requirements specified by the Operator prior to being used in the operational control of flights. (GM) →

Guidance

Refer to guidance associated with ORG 3.6.1 located in ISM Section 1.

Conformity with this provision ensures databases and other internal and external sources of operational data provided for operational control are current, accurate and complete.

Examples of acquired operational control products typically include performance data, weight and balance data and NOTAMs.

DSP 1.11.4 If the Operator utilizes electronic navigation data products for application in operational control, the Operator shall have processes, approved or accepted by the State, if required, which ensure such electronic navigation data products acquired from suppliers, prior to being used in operations:

- i) Are assessed for a level of data integrity commensurate with the intended application;
- ii) Are compatible with the intended function of equipment in which it is installed. (GM)

Guidance

Refer to the IRM for the definition of *Navigation Data Integrity*.

The responsibility of ensuring electronic navigation data is assessed for integrity and is compatible with the intended application rests with the operator.

Navigation database integrity can be assured by obtaining data from a supplier accredited in accordance with approved or accepted standards of data integrity and quality. Such standards include but are not limited to:

- RTCA/DO-200A, Standards for Processing Aeronautical Data;
- RTCA/DO-201A, Standards for Aeronautical Information (area navigation and RNP Operations);
- Advisory Circular (AC) 20-153, Acceptance of Data Processes and Associated Navigation Databases in the United States;

The specifications in items i) and ii) may be satisfied by an operator, in accordance with State-approved or -accepted methods for assuring data integrity and compatibility, such as:

- Obtaining a letter of acceptance from an applicable authority stating the data supplier conforms to a recognized standard for data integrity and compatibility that provides an assurance level of navigation data integrity and quality sufficient to support the intended application **or**
- The existence of operator validation processes to determine navigation data compatibility and accuracy that provide an assurance level of navigation data integrity and quality sufficient to support the intended application.

Monitoring and control of electronic navigation data products acquired from suppliers are also in accordance with DSP 1.11.3.

DSP 1.11.5 If the Operator has external service providers conduct operational functions associated with the operational control of flights, the Operator *should* include auditing as a process for the monitoring of external service providers in accordance with DSP 1.11.2. (GM) →

Guidance

Monitoring and control of external organizations by an operator might include random samplings, product audits, supplier audits, or other similar methods.

1.12 Safety Management

Risk Management

DSP 1.12.1 The Operator *should* have processes implemented in the organization responsible for the operational control of flights that include a combination of reactive and proactive methods for safety data collection and analysis to identify hazards that present existing or potential risks to aircraft operations. [SMS] (GM) ◀

Guidance

Refer to the IRM for the definitions of *Hazard (Aircraft Operations)* and *Safety Risk*.

Hazard identification is an element of the Safety Risk Management component of the SMS framework.

Refer to Guidance associated with ORG 3.1.1 located in ISM Section 1.

DSP 1.12.2 The Operator *should* have a safety risk assessment and mitigation program implemented in the organization responsible for the operational control of flights that specifies processes to ensure:

- i) Hazards are analyzed to determine the existing and potential safety risks to aircraft operations;
- ii) Safety risks are assessed to determine the requirement for risk control action(s);
- iii) When required, risk mitigation actions are developed and implemented in operational control. [SMS] (GM) ◀

Guidance

Risk assessment and mitigation is an element of the Safety Risk Management component of the SMS framework.

Refer to Guidance associated with ORG 3.1.2 located in ISM Section 1.

Operational Reporting

DSP 1.12.3 The Operator shall have an operational reporting system implemented in the organization responsible for the operational control of flights that:

- i) Encourages and facilitates operational control personnel to submit reports that identify safety hazards, expose safety deficiencies and raise safety concerns;
- ii) Ensures mandatory reporting in accordance with applicable regulations;
- iii) Includes analysis and operational control management action as necessary to address safety issues identified through the reporting system. [SMS] (GM) ◀

Guidance

Operational reporting is considered a *proactive* hazard identification activity in an SMS.

Refer to Guidance associated with ORG 3.1.3 located in ISM Section 1.

DSP 1.12.4 The Operator *should* have a confidential safety reporting system implemented within the organization responsible for the operational control of flights in a manner that encourages and facilitates the reporting of events, hazards and/or concerns resulting from or associated with human performance in operations. [SMS] (GM) ◀

Guidance

A confidential safety reporting system is considered a *proactive* hazard identification activity in an SMS.

Refer to Guidance associated with ORG 3.1.4 located in ISM Section 1.

Safety Performance Monitoring and Management

DSP 1.12.5 The Operator *should* have processes implemented in the organization responsible for the operational control of flights for setting performance measures as a means to monitor the safety performance of the organization and to validate the effectiveness of risk controls. [SMS] (GM) ◀

Guidance

Refer to the IRM for the definition of *Safety Assurance*.

Setting measurable safety objectives is included in the safety performance monitoring and measurement element of the Safety Assurance component of the SMS framework.

By setting performance measures, an operator is able to track and compare its operational performance against a target (i.e. the performance objective, typically expressed as a rate or number reduction) over a period of time (e.g. one year). Achievement of the target (or objective) would represent an improvement in the operational performance. The use of performance measures is an effective method to determine if desired safety outcomes are being achieved, and to focus attention on the performance of the organization in managing operational risks and maintaining compliance with relevant regulatory requirements.

Refer to Guidance associated with ORG 3.2.1 located in ISM Section 1.

2 Training and Qualification

2.1 Training and Evaluation Program

General

DSP 2.1.1 The Operator shall have a training program, approved or accepted by the Authority, to ensure the operational control personnel specified in **Table 3.1**, as applicable, are competent to perform any assigned duties relevant to operational control. Such program shall, as a minimum, address:

- i) Initial qualification;
- ii) Continuing qualification. (GM)

Guidance

Refer to the IRM for the definition of *State Acceptance*.

Not all states require the approval or acceptance of a training program for operational control personnel. In such cases, state acceptance is considered implicit.

A training program for operational control personnel includes, as a minimum:

- Initial and recurrent training in accordance with the specifications of **Table 3.1** and **Table 3.5**;
- Recurrent human factors training for FOO personnel on an annual basis;
- A method of qualification through written, oral and/or practical evaluation.

DSP 2.1.2 If an FOO or FOA is utilized in the system of operational control, the Operator shall ensure the training program specifies minimum training hours for such personnel, as applicable, in accordance with requirements of the Operator and/or State. (GM)

Guidance

The training curriculum specifies minimum training hours for each subject area and also indicates whether it has been mandated by the Authority or operator.

DSP 2.1.3 The Operator shall have a process to ensure course materials used in training programs for personnel responsible for operational control are periodically evaluated to ensure compliance with the qualification and performance standards of the Operator and/or Authority. (GM)

Guidance

Such process provides for:

- Continual improvement and effectiveness;
- Incorporation of the latest regulatory and operational changes in a timely manner.

DSP 2.1.4 – 2.1.6 (Intentionally Open)

Instructors and Evaluators

DSP 2.1.7 If an FOO or FOA is utilized in the system of operational control, the Operator shall have a process to ensure those individuals designated to evaluate the competency of such personnel, as applicable, are current and qualified to conduct such evaluations. (GM)

Guidance

Personnel delegated to evaluate FOO personnel are current and qualified as a FOO in accordance with requirements of the State and/or operator.

Personnel delegated to evaluate FOA personnel are current and qualified in the applicable competencies of operational control in accordance with requirements of the State and/or operator.

The specifications of this provision refer to personnel delegated to evaluate the competency of operational control personnel only. The qualifications for individuals delegated to train operational control personnel are in accordance with requirements of the State and/or operator.

2.2 Training Elements

DSP 2.2.1 If an FOO or FOA is utilized in the system of operational control, the Operator shall ensure such personnel, prior to being assigned to operational control duties, receive initial training and demonstrate appropriate knowledge and/or proficiency in the applicable competencies of operational control as specified in **Table 3.5**. (GM)

Guidance

FOO personnel who have completed training programs conducted in accordance with ICAO 7192 D-3 meet the specifications of this provision.

FOO initial training programs contain all of the competencies in **Table 3.5** that are relevant to the operations of the operator.

FOA initial training programs contain the competencies in **Table 3.5** that are relevant to their job function as determined by the operator.

DSP 2.2.2 If an FOO or FOA is utilized in the system of operational control, the Operator shall ensure such personnel receive recurrent training in the applicable competencies of operational control, as specified in **Table 3.5**. Recurrent training shall be completed on a frequency in accordance with requirements of the Authority, if applicable, but not less than *once during every 36-month period plus or minus one calendar month from the original qualification anniversary date or base month*. (GM)

Guidance

Human factors training is accomplished in accordance with DSP 2.2.3.

Dangerous goods training is accomplished in accordance with DSP 2.2.4.

The recurrent training program for FOO personnel addresses all of the competencies that are relevant to the operations of the operator as specified in **Table 3.5**.

The recurrent training program for FOA personnel addresses each of the competencies relevant to their specific job function and to the operations of the operator as specified in **Table 3.5**.

Different methods of conducting recurrent training are acceptable, including formal classroom study, home study, computer-based training, seminars and meetings. All recurrent training, regardless of method, is documented and retained in accordance with DSP 1.8.1.

DSP 2.2.3 If an FOO is utilized in the system of operational control, the Operator shall ensure such personnel receive training in human factors on a frequency in accordance with requirements of the Authority, if applicable, but not less than *once during every 12-month period plus or minus one calendar month from the original qualification anniversary date or base month*. (GM)

Guidance

Refer to the IRM for the definition of *Human Factors*.

DSP 2.2.4 If an FOO or FOA is utilized in the system of operational control and has duties or responsibilities related to the carriage of dangerous goods, the Operator shall ensure such personnel receive training in the operational procedures for the carriage of dangerous goods on a frequency in accordance with requirements of the Authority, if applicable, but not less than *once during every 24-month period plus or minus one calendar month from the original qualification anniversary date or base month*.

2.3 Line Qualification

DSP 2.3.1 If an FOO or FOA is utilized in the system of operational control, the Operator shall have a line qualification program to ensure such personnel, prior to being assigned to operational control duties, have demonstrated proficiency in the applicable competencies of operational control, as specified in **Table 3.5**. (GM)

Guidance

Proficiency is demonstrated annually and recorded in accordance with DSP 1.8.1.

Competencies of operational control are contained in **Table 3.5** and addressed based on the assigned area(s) of responsibility, to include:

- A proficiency review of an FOO that addresses all competencies relevant to the operations of the operator;
- A proficiency review of an FOA that is customized and addresses competencies specific to the assigned area(s) of responsibility and the operations of the operator.

DSP 2.3.2 If an FOO, FOA or designated member of management is utilized in the system of operational control, the Operator shall have a line qualification program to ensure such personnel, prior to being assigned to operational control duties, have demonstrated the ability, as applicable, to:

- i) Assist the PIC in flight preparation and provide the relevant information required;
- ii) File a flight plan with the appropriate ATS unit;
- iii) Furnish the PIC in flight, by appropriate means, with information that may be necessary for the safe conduct of the flight;
- iv) Initiate, in the event of an emergency, applicable procedures as outlined in the OM. (GM)

Guidance

FOO personnel are to demonstrate the ability to perform all duty functions.

FOA personnel are to demonstrate the ability to perform specific duty functions associated with assigned area(s) of responsibility.

A designated member of management that is directly involved with or performs the functions specified in this provision would have to meet the same demonstrated functional ability as specified for an FOO or FOA. Where the performance of the functions specified in this provision are delegated to others (i.e. to FOOs or FOAs), a designated member of management would have to demonstrate the knowledge necessary to accept the responsibilities and to understand the functions associated with the operational control of flights.

Item ii) refers to planning activities that involve ATS (e.g. flight plan filing, re-routes during flight, traffic flow management and/or slot controls).

DSP 2.3.3 If an FOO is utilized in the system of operational control, the Operator shall ensure such personnel who have not performed duties as an FOO for a period of 12 consecutive months are not assigned to perform FOO duties until re-qualified, by demonstrating knowledge and/or proficiency in accordance with DSP 2.2.1.

DSP 2.3.4 If an FOO is utilized in the system of operational control, the Operator shall ensure such personnel are not assigned to FOO duties unless, within the preceding 12 months *plus or minus one calendar month from the original qualification anniversary date or base month*, they have **either**:

- i) Observed one familiarization flight from the flight deck of an aircraft over any area or route segment where responsibility for operational control will be exercised, **or**
- ii) If approved by the State and/or if access to the aircraft flight deck is restricted by the Authority, observed a Line Operational Simulation (LOS) profile accomplished in a

representative flight simulator approved for the purpose by the State, and such profile addresses the areas or route segments where responsibility for operational control will be exercised. (GM)

Guidance

Operators subject to laws or regulations of the State that prohibit the application of specification i) of this provision, and that cannot comply with specification ii) of this provision due to the non-existence of an representative flight training device, may demonstrate an equivalent method of ensuring the specifications of this provision are satisfied.

The familiarization flight or LOS is typically representative of the operational environment within which the FOO will be working. Examples of a representative environment include ultra long haul, long haul, short haul, over water, mountainous terrain, ETOPS, areas of special navigational requirements, or passenger versus cargo flights.

Familiarization flights typically include at least one takeoff and landing as well as a minimum of 2.5 to 5 hours on the flight deck. If a flight is operating a long-haul segment of more than 5 hours, the FOO is typically permitted to take a break during the cruise portion of the flight.

An operator, in accordance with the requirements of the State and other applicable authorities, may adjust the frequency of evaluations specified in this provision to minimize overlap, preserve the original qualification date and to ensure evaluations are completed within the annual cycle and any constraints set forth by the operator, State and/or applicable authorities.

2.4 Special Qualification

DSP 2.4.1 If the Operator utilizes FOO personnel and the Operator's method of Operational Control requires shared responsibility between an FOO and the PIC, the Operator *should* ensure FOO personnel participate in joint resource management training activities with flight crew members for the purpose of enhancing coordination and a mutual understanding of the human factors involved in joint operational control.

3 Line Operations

3.1 General

DSP 3.1.1 If an FOO or FOA is utilized in the system of operational control, the Operator shall have a system that ensures MEL information is accessible to such personnel that have a need for such information. (GM)

Guidance

An effective system ensures operational control personnel are in receipt of relevant and current MEL information, as necessary, to complete operational control functions, duties or tasks.

DSP 3.1.2 The Operator shall have a process or procedures to ensure the PIC is provided with all documents, information and data necessary for the safe conduct of the flight.

DSP 3.1.3 If an FOO or FOA is utilized in the system of operational control, the Operator shall have procedures for succession to ensure, if necessary in the case of absence of such personnel, the responsibility for operational control functions is assumed by qualified personnel. (GM)

Guidance

Succession of responsibility refers to FOO personnel, if applicable, or other personnel with assigned responsibilities for operational control that support or assist the PIC during flight.

3.2 Flight Preparation and Planning

DSP 3.2.1 If an FOO or FOA is utilized in the system of operational control, the Operator shall have guidance and procedures to ensure such personnel, as applicable, assist the PIC in flight preparation and, as necessary, furnish required operational information.

DSP 3.2.2 If an FOO or FOA is utilized in the system of operational control, the Operator shall have a process or procedures to ensure such personnel, as applicable, and the PIC utilize a common set of flight documents for each planned flight. (GM)

Guidance

Refer to **Table 2.2** found in ISM Section 2 (FLT) for OM documentation requirements.

DSP 3.2.3 The Operator shall have a procedure to ensure an Operational Flight Plan (OFP) and Air Traffic Services (ATS) Flight Plan is generated for every intended flight.

DSP 3.2.4 If an FOO or FOA is utilized in the system of operational control, the Operator shall have guidance and procedures to ensure such personnel, as applicable, **either**:

- i) Prepare the OFP and ATS flight plan, **or**
- ii) Assist the PIC in the preparation of the OFP and ATS flight plan. (GM)

Guidance

In a non-shared system of operational control, the ATS flight plan may be prepared by the PIC.

DSP 3.2.5 The Operator shall have guidance and procedures that ensure the original OFP or equivalent document is accepted and signed by the following personnel, using either manuscript or an approved electronic method:

- i) The PIC for all systems of operational control;
- ii) The FOO for a shared system of operational control. (GM)

Guidance

In a shared system of operational control, the signatures of both the PIC and the FOO are required on the OFP.

DSP 3.2.6 If an FOO is utilized in a shared system of operational control, the Operator shall have guidance and procedures to ensure en route amendments to the OFP are coordinated and verified through:

- i) A signature (manuscript or approved electronic method) by the FOO or other person responsible for operational control;
- ii) A recorded agreement of the PIC.

DSP 3.2.7 If an FOO or FOA is utilized in the system of operational control, the Operator shall have a process or procedures to ensure Operator changes in an ATS flight plan that occur prior to departure are coordinated with the appropriate ATS unit before transmission to the aircraft by the FOO, FOA or other delegated person.

DSP 3.2.8 The Operator shall have guidance and procedures to ensure a flight will not be commenced unless it has been ascertained, by every reasonable means available, that conditions and ground facilities required for the flight are adequate for the type of operation. (GM)

Guidance

Areas of operations to be reviewed for adequacy include, as applicable:

- Navigation aids;
- Runways, taxiways, ramp areas;
- Curfews;
- PPR (prior permission required);
- Field conditions;
- Lighting;
- ARFF (airport rescue and fire fighting);
- Applicable operating minima.

DSP 3.2.9 The Operator shall have guidance and procedures to ensure a flight is planned to depart only when current meteorological reports or a combination of reports and forecasts indicate that conditions at the airport of intended landing, or where a destination alternate is required, at least one destination alternate airport will, at the estimated arrival time, be at or above operating minima.

DSP 3.2.10 The Operator shall have guidance and procedures to ensure, before a flight is commenced, meteorological conditions and expected delays are taken into account, and:

- i) The aircraft carries sufficient required fuel and oil to ensure it can safely complete the flight;
- ii) Reserve fuel is carried to provide for contingencies. (GM)

Guidance

The designation of a minimum oil quantity is typically provided by the manufacturer while the determination, monitoring and replenishment of oil supply are the responsibilities of engineering and maintenance and/or the flight crew.

DSP 3.2.11 The Operator shall have guidance and procedures to ensure the following factors are considered when computing the fuel and oil required for a flight:

- i) Meteorological conditions;
- ii) Expected air traffic control routing and delays;
- iii) For IFR flights, one instrument approach at destination including a missed approach;
- iv) Procedures prescribed for en route loss of pressurization or failure of one or more engines, as applicable;

- v) Any other conditions that might cause increased fuel and/or oil consumption. (GM)

Guidance

The designation of a minimum oil quantity is typically provided by the manufacturer while the determination, monitoring and replenishment of oil supply are the responsibilities of engineering and maintenance and/or the flight crew.

3.3 Aircraft Performance and Load Planning

DSP 3.3.1 The Operator shall have guidance and procedures to ensure a planned flight does not exceed:

- i) The maximum performance takeoff and landing weight limits, based upon environmental conditions expected at the times of departure and arrival;
- ii) The aircraft structural takeoff, en route and landing weight limits.

DSP 3.3.2 (Intentionally open)

DSP 3.3.3 The Operator shall ensure qualified personnel perform weight and balance calculations. (GM)

Guidance

Weight and balance calculations may be delegated to a FOO or an appropriately qualified FOA.

The PIC may complete weight and balance calculations, if qualified in accordance with ISM Section 2 (FLT), Subsection 2.1, Training and Evaluation Program.

3.4 Icing Conditions

DSP 3.4.1 The Operator shall have guidance and procedures to ensure a flight to be operated in known or expected icing conditions shall not be commenced unless the aircraft is certificated and equipped to be operated in such conditions.

DSP 3.4.2 (Intentionally open)

DSP 3.4.3 If the Operator has a De-/Anti-icing Program in accordance with GRH 4.2.1, the Operator shall have guidance and procedures to ensure a flight planned to operate in known or suspected ground icing conditions is subjected to the following:

- i) The aircraft has been inspected for ice accretion;
- ii) If necessary, the aircraft has been given appropriate de/anti-icing treatment. (GM)

Guidance

Refer to Guidance associated with GRH 4.2.1 located in Section 6.

3.5 Alternate and Diversion Planning

DSP 3.5.1 The Operator shall have guidance and procedures to ensure a suitable takeoff alternate airport is selected and specified in the OFP whenever **either**:

- i) The weather conditions at the airport of departure are at or below the applicable airport operating landing minima, **or**
- ii) Other operational conditions exist that would preclude a return to the departure airport. (GM)

Guidance

Takeoff alternates may also be designated via radio, ACARS, or other means to/by the FOO.

Airport suitability includes acceptable weather and operational conditions (i.e., approaches, runway configuration, terrain, distance, etc.).

DSP 3.5.2 The Operator shall have guidance and procedures to ensure conditions at the specified alternate airport for takeoff are at or above operating minima for the intended operation.

DSP 3.5.3 If the Operator is required to identify en route alternate airports due to driftdown terrain clearance or operations under ETOPS, the Operator shall have guidance and procedures to ensure such en route alternate airports are:

- i) Selected and specified on the operational flight plan;
- ii) Specified on the ATS flight plan (ETOPS) where required by the State or the ATS system in use. (GM)

Guidance

The intent of the specification in item i) is to ensure en route alternates, when required, are selected and subsequently specified on the OFP or other operational document available to the PIC in flight.

The intent of the specification in item ii) is to ensure en route alternates, when required for ETOPS, are specified on the ATS flight when required by the State or other applicable authority.

DSP 3.5.4 If the Operator selects and specifies en route alternate airports on the OFP, the Operator shall have guidance and procedures to ensure en route alternate airports selected and specified on the OFP are available for approach and landing and the forecast at those airports is for conditions to be at or above the operating minima approved for the operation.

DSP 3.5.5 The Operator shall have guidance and procedures to ensure a flight is not continued towards the airport of intended landing unless the latest available information indicates, at the expected time of arrival, a landing can be made at that airport or at least one destination alternate airport. (GM)

Guidance

Personnel with responsibilities for operational control need to have current and accurate information available, to allow informed decision-making on completing the mission.

Items that are monitored would include at least:

- Weather information, both en route and at the airport of intended landing, to include hazardous phenomena such as thunderstorms, turbulence, icing and restrictions to visibility.
- Field conditions, such as runway condition and availability and status of navigation aids.
- En route navigation systems and facilities where possible failures might occur that could affect the safe continuation or completion of the flight.
- Fuel supply, including actual en route consumption compared to planned consumption, as well as the impact of any changes of alternate airport or additional en route delays.
- Aircraft equipment that becomes inoperative, which results in an increased fuel consumption or a performance or operational decrement, is to be considered and planned for, to ensure the aircraft makes a safe landing at an approved airport.
- Air traffic management issues, such as re-routes, altitude or speed restrictions and facilities or system failures or delays.
- Security issues that could affect the routing of the flight or its airport of intended landing.

Refer to **Table 2.2** found in ISM Section 2 (FLT) for OM documentation requirements.

3.6 Flight Monitoring Procedures

DSP 3.6.1 If an FOO or FOA is utilized in a shared system of operational control, the Operator shall have procedures and equipment that ensure effective communication between the:

- i) FOO and the PIC;
- ii) If applicable, FOA and the PIC;
- iii) FOO, PIC and maintenance. (GM)

Guidance

Refer to the IRM for the definition of *Operational Control – Shared Responsibility*.

The communications system can be direct voice or electronic, but would be reliable, clear and understandable over the entire route of the flight. An effective system would perform adequately and appropriate personnel would be knowledgeable in its use.

DSP 3.6.2 If required by the State, the Operator shall have a system of operational control that includes flight monitoring for the duration of a flight and ensures timely notification to the Operator by the PIC of en route flight movement and/or significant deviation from the operational flight plan.

DSP 3.6.3 The Operator *should* have a system of operational control that includes flight monitoring for the duration of a flight and ensures timely notification to the Operator by the PIC of en route flight movement and/or significant deviation from the operational flight plan.

DSP 3.6.4 If the Operator has a system of operational control that includes an automated flight monitoring system, the Operator *should* have an adequate back-up method of flight monitoring in case of failure of the automated system.

DSP 3.6.5 The Operator shall have procedures to ensure that the inadequacy of any facilities observed during the course of flight operations is reported to the responsible authority without undue delay, and to further ensure that information relevant to any such inadequacy is immediately disseminated to applicable operating areas within the Operator's organization. (GM)

Guidance

The specifications of this provision address situations when operational control personnel learn of the inadequacy of facilities (e.g. navigation aid outages, runway closures) from flight crew reports, ATS, airport authorities or other credible sources. Operational control personnel would be expected to convey any safety-critical outages to applicable authorities and relevant operational areas within the organization.

Applicable authorities include those authorities that have jurisdiction over international operations conducted by an operator over the high seas or the territory of a state that is other than the State of the Operator.

DSP 3.6.6 The Operator shall have guidance and procedures to ensure notification to the Operator when a flight has been completed. (GM)

Guidance

Refer to the IRM for the definitions associated with *Flight Time (Aircraft)*.

3.7 Emergency Response

DSP 3.7.1 If the Operator conducts international flights with aircraft that have emergency and survival equipment on board, the Operator shall ensure the availability of information for immediate communication to rescue coordination centers that describes such equipment, to include, as applicable:

- i) The number, color and type of life rafts and pyrotechnics;
- ii) Details of emergency medical and water supplies;
- iii) Type and frequencies of the emergency portable radio equipment. (GM)

Guidance

The intent of this provision is for an operator to have published information that describes the emergency and survival equipment carried onboard aircraft engaged in international operations, and such information is readily available when necessary for immediate communication to search and rescue facilities.

DSP 3.7.2 If an FOO and/or FOA is utilized in the system of operational control, the Operator shall have guidance and procedures to ensure an FOO, FOA or other delegated person notifies the appropriate authority in the quickest manner of any accident involving an aircraft that results in a fatal or serious injury to any person or substantial damage to the aircraft or property.

4 Operational Control Requirements and Specifications

4.1 Alternate Airports

DSP 4.1.1 The Operator shall have guidance and procedures to ensure a takeoff alternate airport, as required in accordance with DSP 3.5.1, is specified on the OFP and is located within the following distance from the airport of departure:

- i) Aircraft with two engines: not more than one hour flying time at single engine cruise speed;
- ii) Aircraft with three or more engines: not more than two hours flying time at one engine inoperative cruise speed, **or**
- iii) If approved or accepted by the State, for aircraft with two engines operated in accordance with ETOPS and in remote areas of the world without takeoff alternates available for use within one hour flying time at single engine cruise speed, a flight may be planned to the closest takeoff alternate that is within the ETOPS threshold flying time limit in still air. (GM)

(Note: Item iii) is a Parallel Conformity Option in effect until 31 December 2013.)

Guidance

Refer to the IRM for the definition of *ETOPS*.

DSP 4.1.2 The Operator shall have guidance and procedures that ensure a minimum of one destination alternate is specified on the OFP unless **either**:

- i) The duration of the flight and the meteorological conditions prevailing are such that there is reasonable certainty that, at the estimated time of arrival at the airport of intended landing, and for a reasonable period not less than specified by the State before and after such time, the approach and landing may be made under visual meteorological conditions, **or**
- ii) The airport of intended landing is isolated and there is no suitable destination alternate airport, **or**
- iii) The State-approved fuel policy requires a designated (critical or decision) point in flight where the meteorological conditions at the estimated time of arrival at the airport of intended landing and, for a reasonable period before and after the ETA, shall be above the conditions specified for a destination alternate. (GM)

Guidance

The critical or decision point is defined as the point in the flight beyond where the only remaining suitable airport for landing is the destination.

DSP 4.1.3 If the Operator conducts planned flight re-dispatch operations, the Operator shall have guidance and procedures to ensure, when planning a flight with a re-dispatch point, conditions at the re-dispatch airport and alternate, if required, as well as conditions at the destination airport and alternate, if required, will be at or above operating minima.

DSP 4.1.4 The Operator shall have guidance and procedures to ensure provision of an OFP such that, if the most critical engine on an aircraft with two engines become inoperative at any point along the planned route of flight, the aircraft can continue to an airport and land safely without flying below the minimum flight altitude(s) at any points along the route. (GM)

Guidance

Operational flight planning includes a review of the route of the flight in conjunction with published aeronautical and terrain data to ensure compliance with the minimum flight altitudes defined by the operator and/or applicable authorities. The specifications of this provision typically require a

minimum amount of terrain clearance, specified by the operator and/or applicable authorities along the route of flight to assure continued safe flight and landing.

Applicable authorities include those authorities that have jurisdiction over international operations conducted by an operator over the high seas or the territory of a state that is other than the State of the Operator.

DSP 4.1.5 If the Operator conducts operations in accordance with ETOPS, the Operator shall have guidance and procedures to ensure, when planning such operations, the route is planned to remain within the threshold flying time limit, in still air, with respect to all specified suitable en route alternates.

DSP 4.1.6 If the Operator utilizes aircraft with three or more engines, the Operator shall have guidance and procedures to ensure provision of an OFP such that aircraft having three or more engines can **either**:

- i) If a second engine becomes inoperative on any portion of a route, continue from the point where two engines are assumed to fail simultaneously to an en route alternate airport at which the landing distance specification for alternate airports is complied with and where it is expected that a safe landing can be made, **or**
- ii) If a single engine becomes inoperative **and** for operations conducted in areas of the world with limited diversion options, a flight may be planned with a more distant alternate than specified in item i) in order to provide for a diversion for any en route contingency that may limit the planned operation. Such diversion planning shall be conducted in accordance with the specifications of a program approved or accepted by the State that requires the Operator to actively manage the risk of subsequent engine failures or other flight limiting occurrences **and**:
 - a) Contains special considerations for extended range flights conducted over remote areas designed to prevent the need for a diversion and protect the diversion to an alternate airport when it cannot be prevented;
 - b) Utilizes aircraft designed and manufactured for the intended operation and maintained to ensure original reliability;
 - c) Requires the Operator to implement and maintain a problem reporting, tracking and resolution system that contains a means for the prompt reporting, tracking and resolution of those problems, as designated by the Operator or State, that could affect the safety of the operation;
 - d) Requires a prescribed level of engine reliability, as measured by an inflight shutdown rate (IFSD) determined by the Operator or State, where the risk of independent failures leading to a loss of thrust from two simultaneous engine failures ceases to limit the operation and other limiting factors come into play;
 - e) Designates a maximum diversion distance in cases where a diversion is necessary for any reason, including limiting airframe systems and reasons that do not have anything to do with aircraft reliability, such as passenger illness;
 - f) Requires the Operator to demonstrate to the applicable authorities that when considering the impact of increasing diversion time, the operation can be conducted at a level of reliability which maintains an acceptable level of risk.
(GM)

(Note: Item ii) is a Parallel Conformity Option in effect until 31 December 2013.)

Guidance

Operational flight planning includes a review of the route of flight along with published aeronautical information to ensure the designation of adequate en route alternates.

Applicable authorities as specified in item f) includes those authorities that have jurisdiction over international operations conducted by an operator over the high seas or the territory of a state that is other than the State of the Operator.

4.2 Minimum Flight Altitudes

DSP 4.2.1 The Operator shall have guidance and procedures to ensure planned minimum flight altitudes are within the limits established by the applicable authorities. (GM)

Guidance

Operational flight planning includes a review of the route of flight, in conjunction with published aeronautical information, to ensure compliance with minimum flight altitudes. Such review could include:

- Minimum Safety Altitude (MSA);
- Minimum Descent Altitude/Height (MDA/H);
- Minimum En route Altitude (MEA);
- Minimum Obstruction Clearance Altitude (MOCA);
- Minimum Off-Route Altitude (MORA);
- Minimum Vectoring Altitude (MVA);
- Any other minimum altitudes prescribed by the Authority.

Applicable authorities include those authorities that have jurisdiction over international operations conducted by an operator over the high seas or the territory of a state that is other than the State of the Operator.

4.3 Fuel and Oil

DSP 4.3.1 The Operator shall have guidance and procedures to ensure, for turbojet and turbo-fan aircraft operations, when a destination alternate airport is required, fuel and oil carried for a flight is sufficient:

- i) To fly to and execute an approach and a missed approach at the airport of intended landing, and thereafter to fly to the alternate airport and then to fly for 30 minutes at holding speed at 1,500 feet above the alternate airport, conduct an approach and land, and to have an additional amount of fuel sufficient to provide for the increased consumption on the occurrence of other operational contingencies, **or**
- ii) To fly to the alternate airport from any predetermined point and thereafter to fly for 30 minutes at holding speed at 1,500 feet above the alternate airport, with due provision to have an additional amount of fuel sufficient to provide for the increased consumption on the occurrence of other operational contingencies provided that fuel shall not be less than the amount of fuel required to fly to the airport to which the flight is planned and thereafter for two hours at normal cruise consumption. (GM)

Guidance

Refer to the IRM for the definition of *Fuel (Flight Planning)*, which identifies fuel categories that may be used when itemizing regulatory and/or operational fuel requirements during flight planning and for inclusion in the OFP.

The fuel specifications of this provision apply to turbo-jet and turbo-fan aircraft operations. Refer to DSP 4.3.2 for turbo-propeller and non-turbine aircraft operations.

An operator may satisfy the fuel reserve requirements specified in items i) and ii), as applicable, by defining time, speed, altitude, and/or engine power conditions in accordance with requirements of the Authority that yield an equivalent or greater amount of fuel reserves.

The designation of a minimum oil quantity is typically provided by the manufacturer while the determination, monitoring and replenishment of oil supply are the responsibilities of Engineering and Maintenance and/or the flight crew.

The specification in item i) refers to operational contingencies, defined by the operator and/or the state, which may further limit the planned operation, if not considered during preflight planning.

DSP 4.3.2 The Operator shall have guidance and procedures to ensure, for propeller-driven aircraft operations, when a destination alternate airport is required, fuel and oil carried for a flight is sufficient:

- i) To fly to and execute an approach and a missed approach at the airport of intended landing, and thereafter to fly to the alternate airport and then to fly for 45 minutes, **or**
- ii) To fly to the alternate airport from any predetermined point and thereafter to fly for 45 minutes provided that this shall not be less than the amount of fuel required to fly to the airport to which the flight is planned and thereafter for the lesser of 2 hours or 45 minutes plus 15 percent of the flight time planned to be spent at the cruising levels used, **or**
- iii) For propeller-driven aircraft that are operated in accordance with the requirements of the Authority and in conjunction with over-water or remote airport operations as defined by the State and/or the Operator, sufficient fuel:
 - a) To fly to and execute an approach and a missed approach at the airport of intended landing and thereafter to fly to and land at the most distant alternate airport, and
 - b) Thereafter, to fly for 30 minutes plus 15 percent of the total time required to fly at normal cruising fuel consumption to the airports specified in (a) or to fly for 90 minutes at normal cruising fuel consumption, whichever is less, **or**

(Note: Item iii) is a Parallel Conformity Option in effect until 31 December 2013.)

- iv) For turbo-propeller aircraft that are operated in accordance with the requirements of the Authority and in conjunction with a comprehensive fuel policy defined by the State and/or the Operator, sufficient fuel:
 - a) To fly to and execute an approach and a missed approach at the airport of intended landing and thereafter to fly to and land at the most distant alternate airport and;
 - b) Thereafter, to have the equivalent of not less than 5% of the planned trip fuel or, in the event of in-flight re-dispatch, 5% of the trip fuel for the remainder of the flight, and
 - c) To fly for an additional period of 30 minutes. (GM)

(Note: Item iv) is a Parallel Conformity Option in effect until 31 December 2013.)

Guidance

Refer to the IRM for the definition of *Fuel (Flight Planning)*, which identifies fuel categories that may be used when itemizing regulatory and/or operational fuel requirements during flight planning and for inclusion in the OFP.

The fuel specifications in items i), ii), and iii) refer to propeller-driven aircraft operations including turbo-propeller aircraft. The fuel specifications in items iv), however, refer only to turbo-propeller aircraft operations. Refer to DSP 4.3.1 for turbo-jet and turbo-fan aircraft operations.

An operator may satisfy the fuel reserve requirements specified in items i), ii), iii) and iv), as applicable, by defining time, speed, altitude, and/or engine power conditions in accordance with requirements of the Authority that yield an equivalent or greater amount of fuel reserves.

The designation of a minimum oil quantity is typically provided by the manufacturer while the determination, monitoring and replenishment of oil supply are the responsibilities of Engineering and Maintenance and/or the flight crew.

DSP 4.3.3 The Operator shall have guidance and procedures to ensure, for turbojet, turbo-fan and turbo-propeller aircraft operations, when a destination alternate airport is not required, fuel and oil carried for a flight is sufficient:

- i) To fly to the destination and additionally to fly for 30 minutes at holding speed at 1,500 feet above the planned destination airport, and to have an additional amount of fuel sufficient to provide for the increased consumption on the occurrence of other operational contingencies;
- ii) If the destination airport is isolated, as defined by the State and/or the Operator, to fly to the destination and thereafter for a period of two hours at normal cruise consumption. (GM)

Guidance

Refer to the IRM for the definition of *Fuel (Flight Planning)*, which identifies fuel categories that may be used when itemizing regulatory and/or operational fuel requirements during flight planning and for inclusion in the OFP.

The fuel specifications of this provision apply to turbo-jet, turbo-fan and turbo-propeller aircraft operations. Refer to DSP 4.3.4 for propeller-driven reciprocating engine aircraft operations.

The intent of this provision is to define the minimum amount of (final) reserve fuel in excess of taxi fuel and the fuel required to fly to the destination. For item i) this minimum amount of reserve fuel cannot be less than the fuel required to fly for 30 minutes under conditions specified and any additional amount required to provide for increased consumption due to the occurrence of operational contingencies (e.g. contingency fuel, reduced contingency fuel, additional fuel, extra fuel as defined in the IRM glossary)

An operator may satisfy the fuel reserve requirements specified in items i) and ii), as applicable, by defining time, speed, altitude, and/or engine power conditions in accordance with requirements of the Authority that yield an equivalent or greater amount of fuel reserves.

The specification in item i) refers to operational contingencies, defined by the operator and/or the State, which may further limit the planned operation, if not considered during pre-flight planning.

The designation of a minimum oil quantity is typically provided by the manufacturer while the determination, monitoring and replenishment of oil supply are the responsibilities of Engineering and Maintenance and/or the flight crew.

DSP 4.3.4 The Operator shall have guidance and procedures to ensure, for propeller-driven reciprocating engine aircraft operations, when a destination alternate airport is not required, fuel and oil carried for a flight is sufficient to **either**:

- i) Fly to the destination and additionally fly for 45 minutes, **or**
- ii) If the destination airport is isolated, as defined by the State and/or the Operator, fly to the airport to which the flight is planned and thereafter for the lesser of 2 hours or 45 minutes plus 15 percent of the flight time planned to be spent at the cruising levels used. (GM)

Guidance

Refer to the IRM for *Fuel (Flight Planning)*, which provides definitions of fuel categories that may be used when defining regulatory and/or requirements for operational flight planning and inclusion in the OFP.

The specifications of this provision apply to propeller-driven reciprocating engine aircraft operations. Refer to DSP 4.3.3 for turbo-jet, turbo-fan and turbo-propeller aircraft operations.

The intent of this provision is to define the minimum amount of (final) reserve fuel in excess of taxi fuel and the fuel required to fly to the destination.

An operator may satisfy the fuel reserve requirements specified in items i), ii) and iii) by defining time, speed, altitude, and/or engine power conditions in accordance with the requirements of the Authority that yield an equivalent or greater amount of fuel reserves.

The designation of a minimum oil quantity is typically provided by the manufacturer while the determination, monitoring and replenishment of oil supply are the responsibilities of Engineering and Maintenance and/or the flight crew.

DSP 4.3.5 If the Operator conducts planned flight re-dispatch operations, the Operator shall have guidance and procedures to ensure, when operating under planned flight re-dispatch procedures, fuel and oil requirements from the origin to the planned re-dispatch airport and from the re-dispatch point to the airport of intended destination are satisfied. (GM)

Guidance

The designation of a minimum oil quantity is typically provided by the aircraft manufacturer while the determination, monitoring and replenishment of oil supply are the responsibilities of Engineering and Maintenance and/or the flight crew.

4.4 Oxygen

DSP 4.4.1 The Operator shall have guidance and procedures to ensure a flight in a pressurized or unpressurized aircraft is not commenced unless a sufficient amount of stored breathing oxygen is carried to supply crew members and passengers in accordance with FLT 4.3.4 and FLT 4.3.5. (GM)

Guidance

The intent of this provision is to ensure operational control personnel with responsibilities related to flight planning or aircraft scheduling are provided with the necessary information regarding oxygen carriage requirements in order to appropriately match an aircraft to a planned route.

Refer to Guidance associated with FLT 4.3.4 and FLT 4.3.5 located in ISM Section 2.

Table 3.1 – Operational Control Personnel

This table categorizes operational control personnel, defines their authority, identifies their responsibilities and illustrates the relationship of such responsibilities to the operation as a whole. It shall be used for the purposes of applying relevant Section 3 provisions and is provided to ensure suitably qualified persons are designated, where applicable, to support, brief and/or assist the pilot-in-command (PIC) or FOO in the safe conduct of each flight. The terms used in the table to identify operational control personnel are generic and might vary. Personnel, however, employed in operational control functions that are delegated the authority and/or assigned the responsibility to carry out functions, duties or tasks, as outlined in the table, are subject to the training and qualification requirements commensurate with their position.

Operational Control → ↓	Authority (DSP 1.3.4)	Responsibilities, Including the Assignment of Functions, Duties or Tasks. (DSP 1.3.5 and 1.3.6)	Training and Qualification <i>Operator shall designate responsibilities and ensure personnel are competent to perform the job function.</i>
Administrative Personnel ¹ (e.g. gate agent)	None Do not make recommendations or decisions regarding the operational control of each flight.	Provide, collect or assemble operational documents or data only.	Not subject to initial and recurrent training in the competencies of operational control in Table 3.5 and may be qualified via On the Job Training (OJT), job descriptions, task cards, guidelines, checklists, training materials or other written means to establish competence.
Flight Operations Assistant (FOA) ⁴ (e.g. Weather Analysts, Navigation Analysts/Flight Planning Specialists, Load Agents/Planners, Operations Coordinators/Planners, Maintenance controllers, Air Traffic Specialists)	None or limited to area(s) of expertise May be authorized to make decisions or recommendations in area(s) of expertise. ⁵ (e.g., maintenance controller grounds aircraft.)	Support, brief and/or assist the PIC or FOO. Specializes in one or more of the elements of operational control. ³ Collects, provides filters, evaluates and applies operational documents or data relevant to specific elements of operational control. Makes recommendations or decisions in area(s) of expertise.	For each area of expertise or specialization ³ Subject to initial and recurrent training in accordance with DSP 2.2.1 and 2.2.2 and specific competencies of Table 3.5 relevant to the job function and operations of the Operator.

Table 3.1 – Operational Control Personnel (cont.)

<p>Flight Dispatcher or Flight Operations Officer (FOO)⁴ or Designated Member of Management (e.g. Director of Operations)</p>	<p>None or limited or shared² May share operational control authority with the PIC.² May be authorized to make recommendations or decisions.⁵</p>	<p>May share operational control responsibility with the PIC.² Support, brief, and/or assist the PIC. Collects, provides, filters, evaluates and applies operational documents or data relevant to all elements of operational control.³ Makes recommendations or decisions.</p>	<p>Subject to initial and recurrent training in accordance with DSP 2.2.1 and 2.2.2 and all competencies of Table 3.5 relevant to the operations of the Operator.</p>
<p>Pilot in Command (PIC)</p>	<p>Full/shared² Has final authority to ensure the safe operation of the aircraft. May share authority and responsibility for operational control.</p>	<p>Full/shared² Responsible for safe conduct of the flight. Collect, provide, filter, evaluate and applies operational documents or data relevant to all competencies of operational control.³</p>	<p>Subject to training and qualification requirements specified in ISM Section 2.</p>
<p>Legend</p>	<p>1- Personnel lacking any authority or responsibility for operational control are identified in the table for the purposes of excluding them from the training and qualification provisions of this section.</p> <p>2- FOO personnel used in conjunction with a shared system of operational share authority with the PIC.</p> <p>3- Elements of operational control are contained in Table 3.5. FOA personnel may be referred to as: Weather Analysts, Navigation Analysts/Flight Planning Specialists, Load Agents, Operations Coordinators/Planners, Maintenance controllers, Air Traffic Specialists.</p> <p>4- The terms used in this table to identify operational personnel are generic and may vary. Personnel utilized in operational control functions and delegated the responsibilities delineated in the table are subject to the relevant qualification and training provisions in this section.</p> <p>5- Decision making limited in scope by authority and to area of expertise.</p>		

Table 3.2 – Operations Manual (OM) Content Specifications

This table contains the fundamental OM content specifications required to achieve conformity with DSP 1.7.1. It also specifies Section 2 (FLT) provisions that must be addressed in the sections of the OM relevant to personnel with responsibilities related to the operational control of flights.

Note: *Specific policies, guidance, data and/or procedures that must be addressed in the sections of the OM relevant to operational control personnel can be found in individual Section 3 provisions and are not duplicated in the table.*

General Information	ISARP
i) General Operations Manual (GOM), to include:	DSP 1.7.1
a) Non-aircraft type related and/or standard operating procedures for each phase of flight, policies, procedures, checklists, descriptions, guidelines, emergency procedures and other relevant information;	DSP 1.7.1
b) Authorities, duties and responsibilities associated with the operational control of flights;	DSP 1.3.1, 1.3.4, 1.3.5
c) The requirement for commercial flights to be conducted under an IFR flight plan.	FLT 3.10.1
Aircraft Operating Information	ISARP
ii) Aircraft Operating Manual (AOM), to include:	DSP 1.7.1
a) Normal, abnormal/non-normal and emergency procedures, instructions and checklists;	DSP 1.7.1
b) Aircraft systems descriptions, limitations and performance data.	DSP 1.7.1
iii) MEL and CDL, to include applicability and a description of the relationship between the Minimum Equipment List (MEL) and the Master Minimum Equipment List (MMEL);	DSP 1.7.1
iv) Aircraft specific weight and balance instructions/data;	DSP 1.7.1
v) Instructions for the conduct and control of ground de/anti-icing operations.	FLT 3.9.6
Areas, Routes and Airport Information	ISARP
vi) Route and airport instructions and information (departure, destination, en route and destination alternates, to include:	DSP 1.7.1
a) Airway manuals and charts, including information regarding communication facilities and navigation aids;	DSP 1.7.1
b) Airport charts, including the method for determining airport operating minima, operating minima values for destination and alternate airports and the increase of airport operating minima in case of degradation of approach or airport facilities;	DSP 1.7.1
c) Airport and runway analysis manual or documents:	DSP 1.7.1
d) If applicable, flight following requirements and instructions to ensure the PIC notifies the operator of en route flight movement or deviations from the OFP including procedures for loss of communication between the aircraft and the FOO;	DSP 1.7.1
e) Instructions for the conduct of precision and non-precision approaches, including approach minima;	FLT 3.11.65, 3.11.67
f) If applicable, procedures for the conduct of long-range navigation;	FLT 3.11.11

g)	Supplemental oxygen requirements and escape routes in case of decompression in an area of high terrain, if applicable;	FLT 4.3.4, FLT 4.3.5, DSP 4.1.1
h)	Regional guidance necessary to comply with local regulations.	DSP 1.7.1
Training Information		ISARP
vii)	Training Manual, to include:	DSP 1.7.1
a)	Details of all relevant training programs, policies, directives and requirements, including curricula and syllabi, as applicable, for initial qualification, continuing qualification and other specialized training;	DSP 1.7.1
b)	Curricula for: ground training, evaluation and certification;	DSP 1.7.1
c)	Comprehensive syllabi to include lesson plans, procedures for training and conduct of evaluations;	DSP 1.7.1
d)	The training program for the development of knowledge and skills related to human performance (Crew Resource Management/Dispatch Resource Management, CRM/DRM).	DSP 1.7.1
Other Information		ISARP
viii)	Cabin safety and emergency procedures relevant to operational control personnel.	DSP 1.7.1
ix)	Dangerous Goods manual or parts relevant to operational control personnel, to include information and instructions on the carriage of dangerous goods and action to be taken in the event of an emergency.	DSP 1.7.1
x)	Security Manual or parts relevant to operational control personnel, including bomb search procedures.	DSP 1.7.1

Table 3.3 – Operational Flight Plan (OFP) Specifications

The OM contains a description and specifications for the content and use of the OFP or equivalent document. The content of the OFP shall consist of, as a minimum, the following elements:

- i) Aircraft registration;
- ii) Aircraft type and variant;
- iii) Date of flight and flight identification;
- iv) Departure airport, STD, STA, destination airport;
- v) Route and route segments with check points/waypoints, distances and time;
- vi) Assigned oceanic track and associated information, as applicable;
- vii) Types of operation (ETOPS, IFR, ferry-flight, etc.);
- viii) Planned cruising speed and flight times between waypoints/check points;
- ix) Planned altitude and flight levels;
- x) Fuel calculations;
- xi) Fuel on-board when starting engines;
- xii) Alternate(s) for destination and, when applicable, takeoff and en route;
- xiii) Relevant meteorological information.

Table 3.4 – Flight Information

The Operator shall record and retain the following information for each flight:

- i) Aircraft registration;
- ii) Date;
- iii) Flight number;
- iv) Flight crew names and duty assignment;
- v) Fuel onboard at departure, en route and arrival;
- vi) Departure and arrival point;
- vii) Actual time of departure;
- viii) Actual time of arrival;
- ix) Flight time;
- x) Incidents and observations, if any;
- xi) Flight weather briefings;
- xii) Dispatch or flight releases;
- xiii) Load-sheet;
- xiv) NOTOC;
- xv) OFP;
- xvi) ATS flight plan;
- xvii) Fuel and oil records.

Table 3.5 – Competencies of Operational Control

The Operator shall ensure FOO or FOA personnel demonstrate knowledge and/or proficiency in the competencies of operational control appropriate to the assignment of responsibility to carry out operational control functions, duties, or tasks, to include, as applicable:

Competency	FOO	FOA
i) Contents of the Operations Manual relevant to the operational control of flights;	X ³	X ^{3B}
ii) Radio equipment in the aircraft used;	X ³	X ^{3B}
iii) Aviation indoctrination;	X ³	X ^{3B}
iv) Navigation equipment in the aircraft used, including peculiarities and limitations of that equipment;	X ³	X ^{3B}
v) Seasonal meteorological conditions and hazards;	X ³	X ^{3B}
vi) Source of meteorological information;	X ³	X ^{3B}
vii) Effects of meteorological conditions on radio reception on the aircraft used;	X ³	X ^{3B}
viii) Aircraft mass (weight) balance and control;	X ³	X ^{3B}
ix) Human performance relevant to operations or dispatch duties (CRM/DRM);	X ³	
x) Operational procedures for the carriage dangerous goods;	X ³	X ^{3B}
xi) Operational procedures for the carriage of cargo;	X ^{3B}	X ^{3B}
xii) Operational emergency and abnormal procedures;	X ^{2B}	X ^{2B}
xiii) Security procedures (emergency and abnormal situations);	X ³	X ^{3B}
xiv) Civil Air Law and regulations;	X ³	X ^{3B}
xv) Aircraft mass (weight) and performance;	X ³	X ^{3B}
xvi) Navigation, special navigation;	X ³	X ^{3B}
xvii) Special airports;	X ^{3A}	X ^{3AB}
xviii) Air traffic management;	X ³	X ^{3B}
xix) Aircraft systems and MEL/CDL;	X ³	X ^{3B}
xx) Flight planning;	X ³	X ^{3B}
xxi) Flight monitoring;	X ³	X ^{3B}
xxii) Communication;	X ³	X ^{3B}
xxiii) Fuel supply (aircraft and fuel type requirements);	X ³	X ^{3B}
xxiv) De-icing/anti-icing procedures;	X ^{3A}	X ^{3AB}
xxv) ETOPS procedures, if applicable.	X ^{3A}	X ^{3AB}

Table 3.5 – Competencies of Operational Control (cont.)

Legend

- X: Shall be completed during training and evaluation.
- 1: Shall be satisfactorily completed during initial training and once every calendar year plus or minus one calendar month from the original qualification anniversary date or base month.
- 2: Shall be satisfactorily completed during initial training and once every 24 months.
- 3: Shall be satisfactorily completed during initial training and once every three calendar years plus or minus one calendar month from the original qualification tri-annual anniversary date or base month.
- A: If relevant to the operations of the Operator.
- B: If relevant to area of expertise or job function (e.g. Flight Planning, Maintenance Control, Load Planning, etc.).

Notes

FOO personnel assigned overall operational control responsibility for specific flights or utilized in shared systems of operational control demonstrate knowledge and/or proficiency in all competencies of operational control. FOO or FOA personnel assigned the individual responsibility to carry out specific operational control functions, duties or tasks demonstrate knowledge and/or proficiency in competencies relevant to area of expertise or function as determined by the operator or State.



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SECTION 4 – AIRCRAFT ENGINEERING AND MAINTENANCE (MNT)

Applicability

Section 4 is applicable to all operators, and addresses aircraft engineering and maintenance functions relevant to the airworthiness of the aircraft, engines and components.

Individual provisions or sub-specifications within a provision that:

- Begin with a conditional (“If the Operator...”) are applicable if the operator meets the condition(s) stated in the phrase.
- Do not begin with a conditional phrase are applicable unless determined otherwise by the Auditor.

Where an operator outsources the performance of aircraft engineering and maintenance functions to external organizations, the operator retains overall responsibility for such functions, and must demonstrate processes for monitoring the applicable external organization(s) in accordance with MNT 1.11.7.

General Guidance

Definitions of technical terms used in this ISM Section 4, as well as the meaning of abbreviations and acronyms, are found in the IATA Reference Manual for Audit Programs (IRM).

1 Management and Control

1.1 Management System

MNT 1.1.1 The Operator shall have a management system for maintenance operations that ensures:

- i) Management of safety and quality in maintenance operations;
- ii) Supervision and control of maintenance activities;
- iii) Compliance with applicable regulations and standards of the Operator. (GM) ◀

Guidance

Refer to Guidance associated with ORG 1.1.1 located in ISM Section 1.

MNT 1.1.2 The Operator shall have a staff of management personnel suitably matched to the scale and scope of maintenance operations to ensure:

- i) Maintenance of all aircraft is performed in accordance with the Maintenance Program;
- ii) All maintenance is carried out in accordance with policies and procedures contained in the Maintenance Management Manual (MMM). (GM)

Guidance

Refer to the IRM for the definitions of *Maintenance Management Manual (MMM)* and *Maintenance Program*.

The management personnel represent the maintenance management structure of the operator and are responsible for all maintenance functions. Dependent on the size of the operation and the organizational set up, the maintenance functions may be divided among individual managers or combined, as applicable to the airline structure.

The actual number of persons employed and their qualifications are dependent upon the tasks to be performed and thus dependent on the size and complexity of the operation (route network, line

or charter, ETOPS, number of aircraft and aircraft types, complexity of the aircraft and their age), number and locations of maintenance facilities and the amount and complexity of maintenance contracts. Consequently, the number of persons needed and their qualifications may differ greatly from one operator to another and a simple formula covering the whole range of possibilities is not feasible.

MNT 1.1.3 The Operator shall have a manager of maintenance operations that is acceptable to the Authority, if required, and is responsible, and thus accountable for ensuring:

- i) The management of safety risks in maintenance operations;
- ii) Maintenance operations are conducted in accordance with conditions and restrictions of the Air Operator Certificate (AOC), and in compliance with applicable regulations and standards of the Operator. (GM) ◀

Guidance

Refer to the IRM for the definitions of *Air Operator Certificate (AOC)* and *Authority*.

In certain regulatory jurisdictions the individual that is the manager of an operator's maintenance operations is required to be a nominated official that is acceptable to the Authority.

Refer to ORG 1.1.4 located in ISM Section 1.

1.2 Authorities and Responsibilities

MNT 1.2.1 The Operator shall ensure the management system for maintenance operations defines authorities and responsibilities of management and non-management personnel that perform functions relevant to aircraft maintenance. The management system shall also specify:

- i) The levels of management with the authority to make decisions that affect the safety of maintenance operations;
- ii) Responsibilities for ensuring maintenance operations are conducted in accordance with conditions and restrictions of the AOC, applicable regulations and standards of the Operator. (GM) ◀

Guidance

Refer to Guidance associated with ORG 1.3.1 located in ISM Section 1.

MNT 1.2.2 The Operator shall have a process for the delegation of duties within the management system for maintenance operations that ensures managerial continuity is maintained when operational managers, including any nominated postholder(s), are absent from the workplace. (GM) ◀

Guidance

Refer to Guidance associated with ORG 1.3.2 located in ISM Section 1.

MNT 1.2.3 The Operator shall ensure an assignment of authority and responsibility within the management system for maintenance operations for liaison with regulatory authorities, original equipment manufacturers (OEMs) and other operationally relevant external entities. (GM) ◀

Guidance

Refer to Guidance associated with ORG 1.3.3 located in ISM Section 1.

1.3 Maintenance Program

MNT 1.3.1 The Operator shall provide, for the use and guidance of relevant maintenance and operational personnel, a Maintenance Program and maintenance data, approved by the Authority, that contains information for each aircraft type, in accordance with specifications in **Table 4.1**. The Maintenance Program shall satisfy requirements of:

- i) The State of Registry;
- ii) The State of Design;
- iii) The Operator;
- iv) Aircraft, engine and component OEMs. (GM)

Guidance

Refer to the IRM for the definitions of *State of Design* and *State of Registry*.

An operator's authority holds the operator responsible for the definition of Approved Data and an Approved Maintenance Program for use by the operator and its maintenance organization.

In this context, it is necessary to check what vehicle is being used by the operator to ensure that the Approved Data and Maintenance Program are known to the AMO and approved according to the requirements of the Authority. Additionally, it is necessary to check which vehicle the operator uses to introduce changes to Approved Data and to the Approved Maintenance Program. Does the operator have a Design Organization at hand to perform these activities?

Here it is also proper to ask the question: what subscriptions the operator has in order to be able to define its Approved Data and Approved Maintenance Program? e.g., bi-weekly, TC Holder Data, shared reliability data and others.

The aircraft is maintained to one approved operator's aircraft maintenance program. When an operator wishes to change from one approved operator's aircraft maintenance program to another approved program, a transfer check/inspection may need to be performed, as agreed with the Authority, in order to implement the change.

The operator's aircraft maintenance program contains a preface that defines the maintenance program contents, the inspection standards to be applied, permitted variations to task frequencies and, where applicable, any procedure to escalate established check/inspection intervals.

Some approved operators' aircraft maintenance programs, not developed from the MRB Process, use reliability programs. The purpose of a reliability program is to ensure that the aircraft maintenance program tasks are effective and carried out at appropriate time intervals. Actions resulting from the reliability program may result in the escalation, addition or deletion of maintenance tasks, as deemed necessary. A reliability program provides an appropriate means of monitoring the effectiveness of the maintenance program.

The maintenance program typically contains the following information:

- The type/model and registration number of the aircraft, engines and, where applicable, auxiliary power units (APUs) and propellers;
- The name and address of the operator;
- The operator's reference identification of the program document, the date of issue and issue number;
- A statement signed by the operator to the effect the specified aircraft is maintained in accordance with the program and that the program is reviewed and updated as required;
- Contents/list of effective pages of the document;
- Check periods that reflect the anticipated utilization of the aircraft and where utilization cannot be anticipated, calendar time limits are included;
- Procedures for the escalation of established check periods, where applicable, and acceptable to the Authority;
- Provision to record date and reference to approved amendments incorporated in the program;
- Details of preflight maintenance tasks accomplished by maintenance personnel and not included in the Operations Manual for action by flight crew;

- The tasks and the periods (intervals/frequencies) at which each part of the aircraft, engines, APUs, propellers, components, accessories, equipment, instruments, electrical and radio apparatus and associated systems and installations are to be inspected, together with the type and degree of inspection;
- The periods when items are checked, cleaned, lubricated, replenished, adjusted and tested;
- Details of specific structural inspections or sampling programs;
- Details of the corrosion control program, when applicable;
- The periods and procedures for the collection of engine health monitoring data;
- The periods when overhauls and/or replacements by new or overhauled parts are to be made;
- A cross-reference to other documents approved by the Authority that contain the details of maintenance tasks related to mandatory life-limitations, Certification Maintenance Requirements (CMRs) and Airworthiness Directives (ADs);

Note: *To prevent inadvertent variations to such tasks or intervals, these items would not be included in the main portion of the maintenance program document, or any planning control system, without specific identification of their mandatory status.*

- Details of, or cross-reference to, any required Reliability Program or statistical methods of continuous surveillance;
- A statement that practices and procedures to satisfy the program are to the standards specified in the Type Certificate Holder's Maintenance Instructions. When practices and procedures are included in a customized operator's maintenance manual approved by the Authority, the statement refers to this manual;
- Each maintenance task quoted is defined in the definitions section of the program.

An operator's approved aircraft maintenance programs are subject to periodic review to ensure they reflect current Type Certificate Holder's recommendations, revisions to the Maintenance Review Board Report and the mandatory requirements and maintenance needs of the aircraft. The operator reviews the detailed requirements at least annually for continued validity in light of the operating experience.

A system is in place to analyze the effectiveness of the maintenance program with regard to spares, known defects, malfunctions and damage and to amend the maintenance program, as necessary. The amendment to the maintenance program requires the approval of the Authority unless the operator has been approved to amend the maintenance program without requiring approval of the Authority.

MNT 1.3.2 The Operator shall ensure the design and application of the Maintenance Program observes human factors principles. (GM)

Guidance

Refer to the IRM for the definition of *Human Factors Principles*.

Specifically with respect to observation of human factor principles in design and application of the maintenance program, the following guidance material provides information regarding the development of maintenance schedules/programs, including the development of the associated Task Cards, hereafter referred to as the "Maintenance Item."

In developing a Maintenance Item, attention is applied to the Human Factors layout of the Maintenance Item that includes, but is not limited to:

- Layout of the Maintenance Item;
- Language used;

- Clear and concise instructions that are as brief and succinct as possible;
- Standardization of all task cards at the beginning to include the appropriate personnel safety warnings and cautions;
- All notes, warnings and cautions are apparent by the suggested use of boxing, bolding, italicizing and underlining text;
- Clear instructions for the mechanic/inspector as to where to sign, certify, initial, date the task;
- Where possible, the use of color to display Maintenance Items and task cards;
- Where a Maintenance Item has important graphic details, the graphics are included;
- Full amplification of some tasks rather than referral to a separate document that may distract the mechanic;
- Referral to the applicable Approved Data.

Guidance material on the application of human factors principles can be found in the ICAO Human Factors Training Manual (Doc 9683).

MNT 1.3.3 The Operator shall ensure amendments to the Maintenance Program are furnished to all organizations and/or persons to whom the Maintenance Program has been issued.

1.4 Provision of Resources

MNT 1.4.1 The Operator shall have the necessary facilities, workspace, equipment and supporting services, as well as work environment, to ensure maintenance is performed in accordance with the Maintenance Program. (GM) ◀

Guidance

Conformity with MNT 1.4.1 does not require specifications to be *documented* by an operator.

Refer to Guidance associated with ORG 1.6.1 located in ISM Section 1.

MNT 1.4.2 The Operator shall ensure management and non-management positions within maintenance operations that require the performance of functions relevant to aircraft airworthiness are filled by personnel on the basis of knowledge, skills, training and experience appropriate for the position. (GM) ◀

Guidance

A corporate personnel selection policy that applies to all operational areas of the company, including the maintenance organization, will serve to satisfy this specification.

Refer to Guidance associated with ORG 1.6.2 located in ISM Section 1.

MNT 1.4.3 The Operator shall ensure availability of the facilities, personnel, equipment and other resources, as necessary, for the implementation of management and control functions, as specified in **Table 4.2**.

1.5 Communication

MNT 1.5.1 The Operator shall have a communication system that enables and ensures an effective exchange of information relevant to operations within the management system for maintenance operations and with each maintenance organization that performs maintenance for the Operator. (GM) ◀

Guidance

Refer to Guidance associated with **ORG 1.4.1** located in ISM Section 1.

1.6 Documentation System

MNT 1.6.1 The Operator shall have a system for the management and control of documentation and technical data used directly in the conduct or support of maintenance operations, to include processes for:

- i) Identifying the current version of maintenance documents;
- ii) Distribution that ensures availability of the current version of applicable maintenance documentation and technical data:
 - a) In all areas where maintenance is conducted;
 - b) To external maintenance organizations that perform maintenance for the Operator.
- iii) Review and revision as necessary to maintain the currency of information contained in the MMM and other maintenance documents;
- iv) Retention of engineering and maintenance documents that permits easy reference and accessibility;
- v) Identification and control of obsolete and/or reproduced documents;
- vi) Retention and dissemination of documentation received from external sources, to include manuals and documents from regulatory authorities and original equipment manufacturers. (GM) ◀

Guidance

Refer to Guidance associated with ORG 2.1.1 located in ISM Section 1.

MNT 1.6.2 If the Operator utilizes an electronic system for the management and control of any documentation or technical data used directly in the conduct of maintenance operations, the Operator shall ensure the system provides for a scheduled generation of back-up files for such documents or data. (GM) ◀

Guidance

Refer to Guidance associated with ORG 2.1.2 located in ISM Section 1.

MNT 1.6.3 The Operator shall have processes to ensure the content of documentation used directly in the conduct or support of maintenance operations:

- i) Contains legible and accurate information;
- ii) Is presented in a format appropriate for use in maintenance operations;
- iii) If applicable, is accepted or approved by the Authority. ◀

1.7 Maintenance Management Manual

MNT 1.7.1 The Operator shall have, for the use and guidance of relevant maintenance and operational personnel, a Maintenance Management Manual that is accepted or approved by the Authority. The MMM may be issued in separate parts and shall contain maintenance policies, procedures and information as specified in **Table 4.3**. The design of the manual shall observe Human Factors principles. (GM)

Guidance

An MMM is a document that defines how an operator, and its Approved Maintenance Organization and/or contracted Approved Maintenance Organization(s) (AMO(s)), accomplishes and controls its aircraft maintenance activities. This document sets out:

- The description of the maintenance management system and its senior personnel;
- Each location where maintenance is carried out;

- The Approved Data for accomplishing aircraft maintenance;
- The procedures by which Engineering and Maintenance is managed.

The MMM provides all Engineering and Maintenance personnel with the necessary information to enable them to accomplish their duties and allow the Authority to understand and approve how the operator and its AMO comply with the applicable Airworthiness Requirements.

The MMM can comprise one manual or a suite of manuals. The MMM may have specific sections extracted to form a customized manual for distribution to maintenance contractors, line stations and others, as applicable.

The MMM can be a generic term for the MCM, QPM, MOM, QM, IPM, MME and others. The purpose of the MMM is to set forth the procedures, means and methods of the operator in fulfilling its maintenance responsibilities. Compliance with its contents assures fulfillment of the operator's maintenance responsibilities.

The management section in the MMM may be produced as a stand-alone document and made available to the key personnel required to be familiar with its contents.

Working procedures between the operator and AMO are established and may be produced as any number of separate procedures manuals and cross-referenced from the management part of the MMM. The list of AMO Certifying Personnel may be produced as a separate document.

Personnel from both the operator and the AMO are expected to be familiar with sections of the manuals that are relevant to the work they carry out.

Responsibilities and procedures for revisions to the management part of the MMM and any associated manuals are to be specified.

The Quality Manager of the operator is responsible for monitoring revisions to the MMM unless otherwise agreed by the Authority.

Unless the Authority has agreed via a procedure stated in the amendment section of the MMM that certain defined classes of amendments may be incorporated without prior Authority approval, this process includes monitoring revisions to the associated procedures manuals.

The MMM normally has at least the following four main parts to cover the items in **Table 4.3**:

- Organization and management ;
- Maintenance procedures;
- Quality system procedures;
- Contracted maintenance procedures and paperwork.

And also contains:

- An organization chart;
- Procedures to ensure:
 - Each aircraft operated is maintained in an airworthy condition;
 - The operational and emergency equipment necessary for an intended flight is serviceable;
 - The Certificate of Airworthiness of each aircraft operated remains valid.
- A description of the quality system;
- A description of the procedure for receiving, amending and distributing all necessary airworthiness data from the type certificate holder or type design organization;
- A statement signed by the operator confirming the MMM and any incorporated documents identified therein reflect the operator's means of compliance with the Authority requirements;
- A description of the MMM amendment control procedure;

- A means of identifying each page of the MMM. This can be in the form of a list of effective pages with each page numbered and either dated or marked with a revision number;
- A description of the system used to distribute the MMM, including a distribution list; for non-scheduled work, temporary copies of the relevant portions of the MMM, or any incorporated reference, may be sent via facsimile transmission;
- A detailed description of the procedures used to ensure that any maintenance tasks required by the maintenance schedule, airworthiness directives or any task required for the rectification of a defect are completed within the required time constraints;
- A description of the evaluation program required by these standards;
- A description of the defect rectification and control procedures, including details of:
 - The methods used to detect and report recurring defects;
 - The procedures for scheduling the rectification of defects whose repair has been deferred, if these procedures have not been incorporated into the MEL preamble.
- The procedures used to report service difficulties in accordance with these standards;
- A description of the technical dispatch procedures, including procedures for ferry-flight authorizations, extended range operations (ETOPS, EROPS, LROPS), all weather operation or any other special operation;
- A description of personnel records to be retained;
- A description of the procedure used to ensure the empty weight and balance of each aircraft is recorded in accordance with the applicable State of Registry/Authority requirements;
- Maintenance arrangements and a list of all such arrangements, including the procedure used to communicate to an approved maintenance organization the maintenance requirements for planned and unforeseen maintenance activities, as well as those mandated by airworthiness directives;
- Procedure for revising and maintaining the MMM up to date and current;
- Approval of the Authority through approval of the list of effective pages or, in the case of manuals containing a small number of pages, approval can be identified on each page.

Refer to MNT 1.3.2 for Guidance on Human Factor principles.

MNT 1.7.2 (Intentionally open)

MNT 1.7.3 The Operator shall ensure the MMM is amended as necessary to keep information contained therein up-to-date and to address:

- i) Changes to maintenance or airworthiness requirements;
- ii) Changes in the organization or activities;
- iii) Inadequacies identified through internal or external audit;
- iv) Conformity with applicable requirements.

MNT 1.7.4 (Intentionally open)

MNT 1.7.5 (Intentionally open)

MNT 1.7.6 The Operator shall ensure a copy of the current version of the MMM, or relevant portions thereof, is promptly made available to:

- i) Applicable authorities;
- ii) Each organization or person that performs or certifies maintenance for the Operator;

- iii) All other organizations or persons to whom the MMM has been issued.

MNT 1.7.7 The Operator shall ensure, when a portion of the MMM is issued in accordance with MNT 1.7.6, policies and procedures contained therein shall be sufficiently comprehensive such that any and all relevant guidance and information is available to any maintenance organization or person that performs maintenance for the Operator under that portion of the manual.

1.8 Maintenance Records System

MNT 1.8.1 The Operator shall have a system for the management and control of maintenance records to ensure the content and retention of such records is in accordance with requirements of the Authority, as applicable, and to ensure operational records are subjected to standardized processes for:

- i) Identification;
- ii) Legibility;
- iii) Maintenance;
- iv) Retention and retrieval;
- v) Protection and security;
- vi) Disposal, transfer, deletion (electronic records) and archiving. (GM) ◀

Guidance

Refer to the IRM for the definition of *Maintenance Records*.

The operator is responsible for the maintenance records of the operator's aircraft irrespective whether the records are retained at the operator's location, at a maintenance organization or any other location.

The operator is required to ensure a complete Certificate of Release to Service is received from the maintenance organization such that the required records can be retained. The system for storing maintenance records is described in the operator's MMM.

Methods of storing maintenance records acceptable to the Authority are in paper form, in a computer database or a combination of both methods. Records stored on microfilm or optical disc form are also acceptable.

For paper systems, use of robust material that can withstand normal handling and filing ensures records can remain legible throughout the required retention period.

Computer systems are required to have at least one back-up system, which is updated within 24 hours of any maintenance. Each terminal is required to contain program safeguards against the ability of unauthorized personnel to alter the database.

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

Information on times, dates, cycles referred to as "summary maintenance records" are the records that give an overall picture on the state of maintenance of the aircraft and any life-limited aircraft component. The current status of all life-limited aircraft components indicates the component life limitation, total number of hours, accumulated cycles or calendar time and the number of hours/cycles/time remaining before the required expiry time of the component is reached.

The current status of Airworthiness Directives (AD) identifies the applicable ADs including revision or amendment numbers. Where an AD is generally applicable to the aircraft or component type but is not applicable to the particular aircraft or component, this is identified. The AD status includes the date on which the AD was accomplished. If the AD is controlled by flight hours or flight cycles, it includes the aircraft or engine or component total flight hours or cycles, as appropriate. For repetitive ADs, only the last application is recorded in the AD status. The status

also specifies which part of a multi-part AD has been accomplished and the method, where a choice is available in the AD.

Details of current modifications and repairs require substantiating data supporting compliance with the airworthiness requirements. This can be in the form of a Supplemental Type Certificate, Service Bulletin, Structural Repair Manual or similar approved document. If the airworthiness data for modification and repair is produced by the maintenance organization in accordance with existing national regulations, all detailed documentation necessary to define the change and its approval are to be retained. Scheduled maintenance requirements following STC incorporation are required to be clearly identified as well. The substantiating data may include:

- Compliance program;
- Master drawing or drawing list, production drawings and installation instructions;
- Engineering reports (static strength, fatigue, damage tolerance, fault analysis);
- Ground and flight test program and results;
- Mass and balance change data;
- Maintenance and repair manual supplements;
- Maintenance program changes and instructions for continuing airworthiness;
- Aircraft flight manual supplement.

Maintenance records are required to be stored safely from fire, flood, theft and alteration.

Computer back up discs and cassettes are to be stored in a different location from those containing the current working discs and tape cassettes and in a safe environment.

The operator is required to ensure, when a maintenance organization used by the operator terminates its operation, the maintenance organization returns all retained maintenance records to the operator.

Refer to guidance associated with ORG 2.2.1 located in ISM Section 1.

MNT 1.8.2 If the Operator utilizes an electronic system for the management of records, the Operator shall ensure the system provides for a regularly scheduled generation of back-up files for records associated with maintenance operations. (GM) ◀

Guidance

Refer to Guidance associated with ORG 2.2.2 located in ISM Section 1.

1.9 (Intentionally open)

1.10 Quality Assurance Program

MNT 1.10.1 The Operator shall have a quality assurance program that provides for auditing of all functions of the management system for maintenance operations to ensure the Operator is:

- i) Complying with applicable regulations and standards of the Operator;
- ii) Satisfying stated maintenance operations needs;
- iii) Identifying undesirable conditions and areas requiring improvement;
- i) Identifying hazards in maintenance operations. [SMS] (GM) ◀

Guidance

Refer to Guidance associated with ORG 3.4.1 located in ISM Section 1.

MNT 1.10.2 The Operator shall have a process for addressing findings that result from audits of maintenance management system functions, which ensures:

- i) Determination of the root cause(s) of findings;

- ii) Development of corrective action, as appropriate, to address findings;
- iii) Implementation of corrective action in appropriate areas of maintenance operations;
- iv) Evaluation of corrective action to determine effectiveness. ◀

MNT 1.10.3 The Operator shall ensure significant issues arising from the maintenance operations quality assurance program are subject to management review in accordance with ORG 1.5.1 and, as applicable, ORG 1.5.2. [SMS] (GM) ◀

Guidance

Refer to ORG 1.5.1 and ORG 1.5.2, as well as guidance associated with ORG 3.4.4, located in ISM Section 1.

MNT 1.10.4 The Operator shall ensure functions related to the maintenance operations quality assurance program are performed by qualified personnel that are either employees of the Operator or independent external quality assurance agents.

MNT 1.10.5 The Operator shall have a means for providing a positive identification of maintenance personnel that are approved to perform and certify maintenance for the Operator. (GM)

Guidance

A database, signature roster or other equivalent mechanisms are typically used to identify such personnel.

1.11 Outsourcing and Product Quality Control

MNT 1.11.1 The Operator shall ensure a maintenance agreement has been executed with each external maintenance organization that performs maintenance functions for the Operator; such maintenance agreement shall:

- i) Specify all maintenance requirements and define all tasks to be performed;
- ii) Comply with the procedures governing maintenance arrangements, as specified in the MMM. (GM) ◀

Guidance

Refer to Guidance associated with ORG 3.5.1 located in ISM Section 1.

Where an operator is not approved as a maintenance organization or an operator's maintenance organization is an independent organization, a contract is to be agreed between the operator and the Approved Maintenance Organization specifying all work to be performed by the Approved Maintenance Organization.

A clear, unambiguous and sufficiently detailed specification of work and assignment of responsibilities are required to ensure that no misunderstanding can arise between the parties concerned (operator, maintenance organization and the State of Registry/Authority) that could result in a situation where work that has a bearing on the airworthiness or serviceability of aircraft is not, or will not, be properly performed.

Special attention is to be paid to procedures and responsibilities to ensure that all maintenance work is performed, service bulletins are analyzed and decisions taken on accomplishment, airworthiness directives are completed on time and all work, including non-mandatory modifications, is carried out in accordance with approved data and to the latest standards.

MNT 1.11.2 The Operator shall ensure each maintenance agreement with an external maintenance organization that performs maintenance functions for the Operator specifies, either in the agreement or in a service level agreement or equivalent document, measurable maintenance safety and quality standards required to be fulfilled by the respective external maintenance organization. (GM) ◀

Guidance

The requirement for a maintenance agreement applies to all functions that are outsourced for substantial maintenance providers such as heavy maintenance and engine overhaul.

If maintenance is expected to be accomplished in accordance with specific industry standards, an acceptable agreement identifies and specifies the standards by exact name.

The following guidance provides information regarding maintenance work related to aircraft and aircraft components carried out for the operator under a formal contract or agreement by external organizations (the contractor).

Note: *The operator carries the ultimate responsibility for airworthiness and ensures before each flight that all required maintenance has been properly carried out. This includes all maintenance carried out by contractors.*

The formal maintenance agreement document is not intended to provide detailed work instructions to the contractor; established procedures are required within the operator and contractor organizations to take care of these functions.

A Maintenance Agreement typically includes, but is not necessarily limited to:

- An approval process for the contractor by the operator and where applicable the contractors and/or the operator's Authority;
- A list of facilities where the maintenance is to be carried out, including a list of satellite facilities that the contractor may use;
- A 'Statement of Work' (SOW) for the Maintenance Agreement that contains the detailed technical requirements, including references to maintenance intervals, manuals, Airworthiness Directives (ADs), Service Bulletins (SBs) and operator special requirements. A clear, unambiguous and sufficiently detailed SOW and assignment of responsibilities are required to ensure no misunderstanding arises between the operator, the contractor and the operator's Authority that could result in a situation where the work, which has a bearing on the airworthiness or the serviceability of operator's aircraft, is not properly performed;
- A requirement for the contractor to produce a suitable quality plan for the project;
- Use and control of parts and materials;
- Process for the approval of deviations from maintenance documents;
- A need for an internal evaluation system by the contractor;
- Access by the operator's quality assurance department staff for the purpose of evaluating ongoing quality;
- A reporting structure that immediately notifies the operator of any significant defects;
- A system of completing, reviewing, retaining maintenance records;
- A system of calibration of tooling and equipment;
- A system of operator supplied product;
- A system of inspecting and testing, i.e., a quality control system;
- A system of handling unsatisfactory product;
- A system of handling, storage, packaging and delivery;
- A system of product identification and traceability;
- A system of training by the contractor of its staff as well as a system of training the contractor by the operator;
- A system of Release To Service of an aircraft or component;
- A system for communication between the operator and the contractor;

- A Service Level Agreement (SLA) that includes clear Key Performance Indicators as agreed between the operator and the contractor for the assessment of achievement of ongoing quality levels (the definition of the specific indicators depends on the policy of the Operator);
- A system of periodic review meetings to include some or all of those below:
 - Contract Review Meeting
 - Workscope Planning Meeting
 - Technical Meeting (ADs/CNs/SBs)
 - Commercial and/or Logistics Meeting
 - Quality Meeting
 - Reliability Meeting

The IATA Airport Handling Manual contains guidance and examples of a standard ground handling agreement and a service level agreement.

MNT 1.11.3 (Intentionally open)

MNT 1.11.4 (Intentionally open)

MNT 1.11.5 The Operator shall have a process to maintain a listing of external providers of maintenance services and products, to include:

- i) Organizations that are currently approved to perform maintenance on the Operator's aircraft, engines, components and/or parts;
- ii) Vendors that are currently approved to supply parts, components and other materials for use in maintenance of the Operator's aircraft.

MNT 1.11.6 The Operator shall have a process to ensure relevant training and/or training material is provided to each external organization that performs maintenance functions for the Operator. (GM)

Guidance

External organization(s) such as contracted line maintenance service providers or MRO organizations are required to be aware of an operator's processes and procedures, as well as their impact on maintenance and/or related systems.

An operator may provide appropriate external organizations with relevant training that covers the operator's paperwork, certification and recording requirements. Alternatively, an operator may provide such training to each external organization that performs maintenance functions for the Operator.

MNT 1.11.7 The Operator shall have monitoring processes to ensure each approved maintenance organization that performs maintenance for the Operator:

- i) Complies with applicable regulations and safety and quality requirements;
- ii) Has procedures that are acceptable to the Authority granting the approval;
- iii) Performs all maintenance in accordance with requirements of the Operator. (GM) ◀

Guidance

Refer to Guidance associated with ORG 3.5.2 located in ISM Section 1.

MNT 1.11.8 The Operator *should* include auditing as a process for monitoring of each maintenance organization that performs maintenance for the Operator. (GM) ◀

Guidance

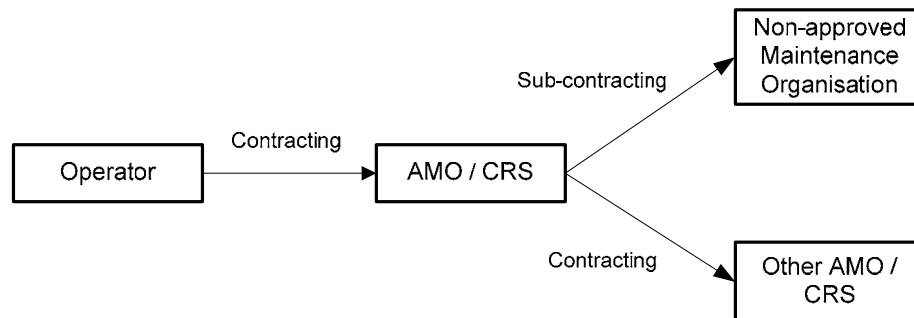
The operator establishes a plan acceptable to the State of Registry/Authority to specify when and how often the operator's maintenance activities are monitored. Reports are produced at the completion of each monitoring investigation that includes details of discrepancies and non-compliance with procedures or requirements.

The feedback process addresses who is required to rectify discrepancies and non-compliance in each particular case and the procedure to be followed, if rectification is not completed within appropriate timescales. The manager responsible for the maintenance organization is also responsible for monitoring and ensuring action on any outstanding items.

To ensure effective compliance with the operator's maintenance activities, the following elements have proven to work well:

- Product sampling: the part inspection of a representative sample of the aircraft fleet;
- Defect sampling: the monitoring of defect rectification performance;
- Concession sampling: the monitoring of any concession allowing extensions to scheduled maintenance;
- On-time maintenance sampling: the monitoring of maintenance intervals (flying hours, calendar time, flight cycles) for aircraft and their components;
- Sampling reports of unairworthy conditions and maintenance errors.

Note: The following diagram describes the contracting and sub-contracting process.



MNT 1.11.9 The Operator shall have processes that ensure:

- i) Aircraft parts and materials are only obtained from approved sources;
- ii) Certification documentation requirements are specified;
- iii) Traceability for used or surplus parts;
- iv) A statement of conformity or certification test results is retained for hardware and raw materials (e.g. extrusions, sheet or bar stock);
- v) Inventory storage of consumable material is managed to ensure traceability of batch control. (GM)

Guidance

An external maintenance organization that performs contracted maintenance functions for the operator may perform the tasks specified in i) through v).

An aircraft part fabricated or manufactured for an operator by a non-approved maintenance organization is produced under the quality system of either the operator or the external organization, and is approved by the operator, provided such an authorization exists under the approval granted by the Authority.

MNT 1.11.10 (Intentionally open)

1.12 Safety Management

Risk Management

MNT 1.12.1 The Operator *should* have processes in maintenance operations that include a combination of reactive and proactive methods for safety data collection and analysis to identify hazards that present existing or potential risks to aircraft operations. [SMS] (GM) ◀

Guidance

Refer to the IRM for the definitions of *Hazard (Aircraft Operations)* and *Safety Risk*.

Hazard identification is an element of the Safety Risk Management component of the SMS framework.

The identification of hazards generally focuses on the various operations (internal and outsourced) that are conducted in order to ensure aircraft are maintained in an airworthy condition.

Refer to Guidance associated with ORG 3.1.1 located in ISM Section 1

MNT 1.12.2 The Operator *should* have a safety risk assessment and mitigation program in maintenance operations that specifies processes to ensure:

- i) Hazards are analyzed to determine the existing and potential safety risk(s);
- ii) Safety risks are assessed to determine the requirement for risk control action(s);
- iii) When required, risk mitigation actions are developed and implemented. [SMS] (GM) ◀

Guidance

Risk assessment and mitigation is an element of the Safety Risk Management component of the SMS framework.

Safety risks are generally related to the various operations (internal and outsourced) that are conducted for the purpose of ensuring aircraft are maintained in an airworthy condition.

Refer to Guidance associated with ORG 3.1.2 located in ISM Section 1

Operational Reporting

MNT 1.12.3 The Operator shall have an operational reporting system implemented in maintenance operations that:

- i) Encourages and facilitates feedback from personnel to report safety hazards, expose safety deficiencies and raise safety concerns;
- ii) Includes analysis and management action as necessary to address safety issues identified through the reporting system. [SMS] (GM) ◀

Guidance

Operational reporting is considered a *proactive* hazard identification activity in an SMS.

Safety issues are generally associated with the various operations (internal and outsourced) that are conducted for the purpose of ensuring aircraft are maintained in an airworthy condition.

Refer to Guidance associated with ORG 3.1.3 located in ISM Section 1.

MNT 1.12.4 The Operator *should* have a confidential safety reporting system implemented within maintenance operations in a manner that encourages and facilitates the reporting of events, hazards and/or concerns resulting from or associated with human performance in maintenance operations. [SMS] (GM) ◀



Guidance

A confidential safety reporting system is considered a *proactive* hazard identification activity in an SMS.

Refer to Guidance associated with ORG 3.1.4 located in ISM Section 1.

Safety Assurance

MNT 1.12.5 The Operator *should* have processes for setting performance measures as a means to verify the safety performance of maintenance operations and to validate the effectiveness of risk controls. [SMS] (GM) ◀

Guidance

Refer to the IRM for the definition of *Safety Assurance*.

Setting measurable safety objectives is included in the safety performance monitoring and measurement element of the Safety Assurance component of the SMS framework.

Refer to Guidance associated with ORG 3.2.1 located in ISM Section 1.

2 Maintenance Control

2.1 Control System

MNT 2.1.1 The Operator shall have a maintenance control system that is in accordance with procedures acceptable to the Authority and ensures:

- i) Each aircraft is maintained in an airworthy condition;
- ii) Operational and emergency equipment necessary for flight is serviceable;
- iii) The Certificate of Airworthiness of each aircraft remains valid.

2.2 Maintenance Planning

MNT 2.2.1 The Operator shall have a system for forecasting and tracking required maintenance activities.

MNT 2.2.2 The Operator shall have a system for tracking hours, cycles and calendar time for aircraft, engines and life-limited components.

2.3 Parts Installation

MNT 2.3.1 The Operator shall have a process to ensure that no new part is installed on an aeronautical product unless the part meets the standards of airworthiness applicable to the installation of new parts and **either**:

- i) The new part has marking identifying it as a part specified in the type design conforming to a recognized national or international standard, **or**
- ii) The part has been approved for use on an aeronautical product, in accordance with the type certificate/STC, if the part was originally designed and manufactured for non-aeronautical use, **or**
- iii) The new part was manufactured under a Parts Manufacturer Approval (PMA).

MNT 2.3.2 The Operator shall have a process to ensure that no used part is installed on an aeronautical product unless the part meets the standards of airworthiness applicable to the installation of used parts and is **either**:

- i) An airworthy part that has been removed from an aircraft for immediate installation on another aircraft, **or**
- ii) An airworthy part that has undergone maintenance for which a maintenance release has been signed by an appropriately rated Approved Maintenance Organization (AMO).

MNT 2.3.3 The Operator shall have a process to ensure that no used life-limited part is installed on an aeronautical product unless the part meets the standards of airworthiness applicable to the installation of life-limited parts and:

- i) The technical history of the part is available to demonstrate the time in service, as authorized for that part in the type certificate governing the installation, has not been exceeded;
- ii) The technical history referred to in sub-paragraph i) is incorporated into the technical record for the aeronautical product on which the part is installed.

2.4 Deferred Maintenance

MNT 2.4.1 The Operator shall have a maintenance control function that is responsible for approving, controlling, monitoring and scheduling non-routine and deferred maintenance activities, including MEL/CDL requirements.

MNT 2.4.2 The Operator shall have a process to ensure MEL/CDL restricted items are tracked and corrected within the required time intervals. (GM)

Guidance

The process ensures all defects affecting the safe operation of the aircraft are rectified within the limits prescribed by the approved MEL or CDL. No postponement of any defect rectification can be permitted without the operator's agreement and in accordance with a procedure approved by the State of Registry/Authority.

MNT 2.4.3 If the Operator has a MEL/CDL short-time escalation approval process, the Operator shall ensure the process is documented and approved by the Authority. (GM)

Guidance

An acceptable short-time escalation approval process normally ensures the use of such a process in exceptional circumstances and with sound justification.

2.5 Continuing Airworthiness

MNT 2.5.1 The Operator shall have a process to obtain and assess continuing airworthiness information, such as Airworthiness Directives (ADs), Alert Service Bulletins and recommendations from the organizations responsible for the type design, and shall implement the resulting actions considered necessary, in accordance with a procedure acceptable to the Authority.

MNT 2.5.2 The Operator shall have a process to monitor and assess maintenance and operational experience with respect to continuing airworthiness of aircraft of over 5,700 kg (12,566 lb) maximum certificated takeoff mass, as prescribed by the Authority.

2.6 Repairs and Modifications

MNT 2.6.1 The Operator shall have a process to ensure all modifications and repairs carried out comply with airworthiness requirements acceptable to the Authority and procedures are established to ensure that technical records supporting compliance with the airworthiness requirements are retained.

MNT 2.6.2 The Operator shall have a process to ensure that a person who performs a major repair or major modification, or who signs a maintenance release in respect of such a repair or modification, assures:

- i) The major repair or major modification conforms to the requirements of technical data that have been approved;
- ii) The approved technical data fall within the meaning assigned to the term "Approved Data."

2.7 Defect Recording and Control

MNT 2.7.1 The Operator shall have processes for the management of recurring defects, to include:

- i) tracking chronic or repetitive unserviceable items;
- ii) documenting troubleshooting history;
- iii) implementing instructions for corrective action;
- iv) ensuring rectification takes into account the methodology used in previous repair attempts.

MNT 2.7.2 (Intentionally open)

MNT 2.7.3 The Operator shall ensure that the defect recording system includes a method to enable flight crews to identify recurring defects.

2.8 ETOPS

MNT 2.8.1 (Intentionally open)

MNT 2.8.2 If the Operator is approved for ETOPS, the Operator shall ensure the ETOPS Maintenance Program complies with requirements of the Type Certificate Holder and the Authority as specified in **Table 4.5**.

2.9 Aircraft Recorders

MNT 2.9.1 The Operator shall have a Maintenance Program that provides for the periodic conduct of operational checks and evaluations of recordings from the Flight Data Recorder (FDR) and Cockpit Voice Recorder (CVR) to ensure the continued serviceability of the recorders. Such program shall ensure:

- i) If the aircraft fleet is equipped with magnetic tape recorder type, operational checks and evaluations are conducted at least annually;
- ii) If the aircraft fleet is equipped with solid state recorder type, the operator shall have a maintenance program that ensures a periodic conduct of operational checks of the recorders in accordance with the manufacturer's requirements or as required by the local authority.

2.10 Electronic Navigation Data Management

MNT 2.10.1 If the Operator utilizes aircraft with electronic navigation capabilities, the Operator shall have a procedure to ensure the timely insertion of current and unaltered electronic navigation data to all applicable aircraft. (GM)

Guidance

The procedure ensures databases for use in aircraft navigation systems are inserted prior to the first flight on the effective date for the new database.

2.11 Reduced Vertical Separation Minima (RVSM)

MNT 2.11.1 If the Operator is authorized for RVSM operations, the Operator shall have procedures that ensure the continued airworthiness (maintenance and repair) of aircraft utilized in RVSM operation. Such procedures shall be in accordance with requirements of the aircraft OEM.

2.12 Reporting to the Authority

MNT 2.12.1 The Operator shall have a procedure to provide the Authority, for aircraft over 5,700 (12,566 lb) kg maximum certificated takeoff mass, with in-service information as prescribed by the Authority.

Guidance

Guidance may be found in ICAO Annex 8, Part II, 4.2.4.

MNT 2.12.2 The Operator shall have a procedure for reporting to the Authority and, if applicable, the Type Certificate Holder, defects or un-airworthy conditions in accordance with requirements contained in **Table 4.4**.

MNT 2.12.3 – 2.12.6 (Intentionally open)

MNT 2.12.7 The Operator shall have a procedure to transmit to the Type Certificate Holder information on faults, malfunctions, defects and other occurrences which could affect the continuing airworthiness of aircraft of over 5,700 kg (12,566 lb) maximum certificated takeoff mass.

3 Technical Records

3.1 Aircraft Maintenance Records

MNT 3.1.1 The Operator shall have a program to ensure the following maintenance records are maintained:

- i) Total time in service (hours, calendar time and cycles, as appropriate,) of the aircraft, engines and all life-limited components;
- ii) Current status of compliance with all mandatory continuing airworthiness information;
- iii) Appropriate details of modifications and repairs;
- iv) Time in service (hours, calendar time and cycles, as appropriate,) since last overhaul of the aircraft, engines or its components subject to a mandatory overhaul life;
- v) Current aircraft status of compliance with the Maintenance Program;
- vi) Detailed maintenance records to show that all requirements for signing of a maintenance release have been met. (GM)

Guidance

Contracted maintenance organizations are required to maintain detailed records, to include certification documents that support the issuance of a maintenance release. Such requirement is typically specified in contractual arrangements, and implementation verified through oversight by the operator.

MNT 3.1.2 The Operator shall have a procedure to ensure that records specified in MNT 3.1.1 are retained as follows:

- i) Records in sub-paragraphs i) to v) are retained for a minimum period of 90 days after the aircraft, engine and component, to which they refer, has been permanently withdrawn from service;
- ii) Records in sub-paragraph vi) are retained for a minimum period of one year after the signing of the maintenance release.

MNT 3.1.3 The Operator shall have processes to ensure, when an aircraft becomes involved in an accident or incident, the related flight recorder records and, to the extent possible, the associated flight recorders are preserved and retained in safe custody pending disposition in accordance with the appropriate investigation.

MNT 3.1.4 The Operator shall have processes to ensure applicable aircraft maintenance records for aircraft currently listed on the AOC:

- i) In the event of a temporary change of operator, are made available to the new operator;
- ii) In the event of a permanent change of operator, transferred to the new operator.

3.2 Aircraft Technical Log (ATL)

MNT 3.2.1 The Operator shall have a process to ensure all aircraft have an aircraft technical log (ATL) or approved equivalent that comprises elements specified in **Table 4.6**.

MNT 3.2.2 The Operator shall have processes for the management of the ATL or approved equivalent as specified in MNT 3.2.1 to ensure, with respect to the ATL or approved equivalent:

- i) Entries are current and cannot be erased or deleted;
- ii) Descriptions of errors or discrepancies that have been corrected remain readable and identifiable;

- iii) Completed pages are retained to provide a continuous record of the last six months of operations.

3.3 Fuel and Oil Records

MNT 3.3.1 The Operator shall have a procedure to maintain fuel and oil records, as required by the Authority, to ensure such records are:

- i) Made available to the appropriate department for the purpose of calculating performance corrections;
- ii) Retained for a minimum period of three months.

3.4 Airworthiness Directives

MNT 3.4.1 The Operator shall maintain records of Airworthiness Directives (ADs) and Service Bulletins (SBs) or equivalents accomplished in accordance with the MMM.

4 Maintenance Organizations

General Guidance

Refer also to Guidance associated with ORG 3.5.2 located in ISM Section 1.

Operators may or may not be approved as maintenance organizations. The following three options are possible:

- An operator is an Approved Maintenance Organization with the scope to carry out all maintenance of the aircraft and components;
- An operator is an Approved Maintenance Organization with the scope to carry out some of the maintenance of the aircraft and components. This, at minimum, could be limited to line maintenance but may be considerably more, but still short, of the first option above;
- An operator is not a Maintenance Organization;

However, irrespective of which option, most operators will always have part of their maintenance performed by external organizations.

The purpose of the IOSA process, with regard to this sub-section four, is to ensure the operator has the required monitoring and control processes, documented and implemented, to ensure its operational requirements are being satisfied by all organizations that perform maintenance on the operator's aircraft.

4.1 Approval

MNT 4.1.1 The Operator shall ensure an aircraft is not operated unless it is maintained and released to service by an Approved Maintenance Organization (AMO) that:

- i) Is acceptable to the Authority;
- ii) Has established procedures acceptable to the Authority to ensure maintenance practices are in compliance with all relevant requirements;
- iii) Maintains the validity of its approval through compliance with the requirements for an approved maintenance organization acceptable to the Authority.

MNT 4.1.2 (Intentionally open)

MNT 4.1.3 The Operator shall ensure each maintenance organization that performs maintenance for the Operator has an approval document that contains, as a minimum:

- i) The name and location of the AMO;
- ii) The date of issue and period of validity of the approval;
- iii) The scope of the approval. (GM)

Guidance

The specification in item iii) of this provision is satisfied by the operator ensuring that the AMO approval document contains the type and level of work required by the operator.

A repair station or Approved Maintenance Organization certificate is usually delivered with ratings in one or more of the following categories or their equivalents:

- Aircraft;
- Avionics;
- Engine;
- Propeller;
- Structure and Corrosion Protection Control Program;
- Component;

- Welding;
- NDT.

MNT 4.1.4 (Intentionally open)

MNT 4.1.5 If the Operator has maintenance performed outside the State of the Operator by a maintenance organization that does not hold an *approval* document issued by the Authority, the Operator shall ensure such maintenance organization has been *recognized* by the Authority. (GM)

Guidance

It is possible for an operator to enter into an arrangement for primary maintenance with an organization that is not an approved/accepted Maintenance Organization within the State of Registry, when the arrangement is in the interest of the operator by simplifying the management of its maintenance. In such a situation, the maintenance organization is approved under the laws of a State that has an agreement with the State of Registry of the operator, and the operator applies its own control processes that ensure the existence of and compliance with the provisions MNT sub-section 4.

4.2 Management

MNT 4.2.1 The Operator shall ensure each maintenance organization that performs maintenance for the Operator has a manager with appropriate qualifications who, if applicable, is acceptable to the Authority and has responsibility for the management and supervision of the maintenance organization.

MNT 4.2.2 The Operator shall ensure each maintenance organization that performs maintenance for the Operator has nominated appropriate personnel with responsibilities for ensuring the maintenance organization is in compliance with the requirements for an approved maintenance organization as accepted by the Authority. (GM)

Guidance

The person or persons appointed represent the maintenance management structure of the organization and responsible for all functions specified in the maintenance organization. The specified functions may be subdivided under individual managers within smaller maintenance organizations, ensuring that responsibility for all functions is allocated

Dependent upon the extent of approval, maintenance organizations typically have, as a minimum, the following personnel: a base maintenance manager, a line maintenance manager, a workshop manager and a quality manager, all of whom report to the accountable executive, if applicable. In small maintenance organizations, subject to approval by the State of Registry/Authority, the accountable executive may also carry responsibility for other managerial positions. Deputies are normally appointed for all managerial positions, and procedures make clear who deputizes for any particular manager in the case of lengthy absence of said manager(s). The length of absence to justify deputizing is the period beyond which the organization or department cannot function properly due to such absence.

The accountable executive is responsible for ensuring that all necessary resources are available to accomplish maintenance to support the organization's maintenance organization approval.

Regardless of the size of the maintenance organization, managers appointed for the combination of the identified functions would indirectly report to the accountable executive through either the base maintenance manager, line maintenance manager, workshop manager or quality manager, as appropriate.

Certifying personnel may report to any of the managers specified, depending upon which type of control the approved maintenance organization uses: licensed engineers, independent inspection or dual function supervisors. The monitoring of quality compliance remains an independent function.

MNT 4.2.3 The Operator shall ensure each maintenance organization that performs maintenance for the Operator has the necessary personnel to plan, perform, supervise, inspect and release the maintenance work to be performed.

4.3 Quality Assurance

MNT 4.3.1 The Operator shall ensure each maintenance organization that performs maintenance for the Operator has an independent quality assurance program that:

- i) Meets the specifications and control processes contained in **Table 4.7**;
- ii) Monitors compliance with applicable regulations, requirements and the Maintenance Procedures Manual (MPM) of the AMO;
- iii) Addresses the specific requirements of the Operator as specified in the maintenance agreement;
- iv) Is under the sole control of the Quality Manager or the person assigned managerial responsibility for the program. (GM)

Guidance

The primary objectives of the quality system are to enable the AMO to ensure it can deliver a safe product and remain in compliance with all requirements.

An essential element of the quality system is the independent audit. The independent audit is an objective process of routine sample checks of *all* aspects of the approved maintenance organization's ability to carry out all maintenance to the required standards. This process includes:

- Product sampling, as this is the end result of the maintenance process, which represents an objective overview of the complete maintenance-related activities; product sampling is intended to complement the requirement for certifying personnel to be satisfied that all required maintenance has been properly carried out before the issue of the certificate of release to service;
- A percentage of random audits carried out on a sample basis when maintenance is being carried out; random audits include audits done during the night for those organizations that work at night.

Another essential element of the quality system is the quality feedback system. The principal function of the quality feedback system is to ensure all findings resulting from the independent quality audits of the organization are properly investigated and corrected in a timely manner:

- Independent quality audit reports are sent to the relevant department(s) for rectification action proposing target rectification dates;
- Rectification dates are discussed with such department(s) before the quality department or nominated quality auditor confirms dates in the report;
- The relevant department(s) rectifies findings within agreed rectification dates and informs the quality department or nominated quality auditor of the completion of such rectifications.

The accountable executive is kept informed of any safety issues and the extent of compliance with authority requirements. The accountable executive also holds regular meetings with personnel to check progress on rectification. In large organizations such meetings may be delegated on a day-to-day basis to the quality manager, subject to the accountable executive meeting at least twice per year with the senior personnel involved to review the overall performance and receiving at least a half yearly summary report on findings of non-compliance.

All records pertaining to the independent quality audit and the quality feedback system are required to be retained for at least two years after the date of closure of the finding to which they refer, or for such periods as to support changes to the audit time periods, whichever is the longer.

Note: *The quality feedback system may not be contracted to outside persons.*

It is not intended that this QA Program be based on a system of end product inspection, but rather upon periodic verifications of all aspects of the systems and practices used for the control of maintenance to ensure compliance with regulations and with the operator's approved procedures.

The aim of the program is to provide an unbiased picture of the AMO's performance to verify that activities comply with the MPM and confirm that the systems and procedures described in the MPM remain effective and are achieving the AMO's requirements.

MNT 4.3.2 – 4.3.4 (Intentionally open)

MNT 4.3.5 The Operator shall ensure each maintenance organization that performs maintenance for the Operator has a process for periodic review of the quality assurance program by the Quality Manager or the person assigned managerial responsibility for the program for the purpose of ensuring compliance with current requirements of the Maintenance Program and the MMM.

MNT 4.3.6 (Intentionally open)

MNT 4.3.7 The Operator shall ensure each maintenance organization that performs maintenance for the Operator has a process to immediately report to the Operator any defects, un-airworthy conditions, failures or malfunctions specified in MNT 2.12.2.

4.4 Personnel

MNT 4.4.1 The Operator shall ensure each maintenance organization that performs maintenance for the Operator utilizes maintenance personnel

- i) That are appropriately licensed and/or authorized to sign the maintenance release;
- ii) Whose competence has been established in accordance with a procedure and to a level acceptable to the authority granting approval for the maintenance organization. (GM)

Guidance

Licensing typically ensures maintenance personnel have met the basic requirements of an applicable authority in terms of age, knowledge, experience and, if required, medical fitness and skill, and have demonstrated the required knowledge and skill in a manner specified by the authority.

Planners, mechanics, specialized services personnel, supervisors and certifying personnel are required to be assessed for competence by on the job evaluation and/or examination relevant to their particular job role within the organization before unsupervised work is permitted.

To assist in the assessment of competence, job descriptions are recommended for each job role in the organization. Basically, the assessment establishes that:

- Planners are able to interpret maintenance requirements into maintenance tasks and have an appreciation that they have no authority to deviate from the maintenance data;
- Mechanics are able to carry out maintenance tasks to any standard specified in the maintenance data and notify supervisors of mistakes requiring rectification to meet required maintenance standards;
- Specialized services personnel are able to carry out specialized maintenance tasks to the standard specified in the maintenance data and will both inform and await instructions from their supervisor in any case where it is impossible to complete the specialized maintenance in accordance with the maintenance data;
- Supervisors are able to ensure that all required maintenance tasks are carried out and where not completed or where it is evident that a particular maintenance task cannot be carried out in accordance with the maintenance data, it is reported to the responsible

person for appropriate action. In addition, for those supervisors who also carry out maintenance tasks, that they understand such tasks are not to be undertaken when incompatible with their management responsibilities;

- Certifying personnel are able to determine when the aircraft is or is not ready to be released to service.

Knowledge of organizational procedures relevant to their particular role in the organization is important, particularly in the case of planners, specialized services personnel, supervisors and certifying personnel.

4.5 Training Program

MNT 4.5.1 The Operator shall ensure each maintenance organization that performs maintenance for the Operator has a training program that assures all maintenance personnel receive initial, continuation and any additional training appropriate to individual assigned tasks and responsibilities.

MNT 4.5.2 The Operator shall ensure each maintenance organization that performs maintenance for the Operator has a training program that includes training in the knowledge and skills related to human performance, including coordination with other maintenance personnel and flight crew.

MNT 4.5.3 The Operator shall ensure each maintenance organization that performs maintenance for the Operator has a training program that assures personnel with technical responsibilities have the requisite knowledge of regulations, standards and procedures in accordance with requirements in the MMM. (GM)

Guidance

The personnel with technical responsibilities are normally defined in the Organization's in-house documentation. This includes, but is not limited to, personnel releasing work, planners, engineers and technical writers.

MNT 4.5.4 The Operator shall ensure each maintenance organization that performs maintenance for the Operator has a training program that provides for continuation training on an interval not to exceed 36 months, which may be reduced to a lesser interval based on findings generated by the QA Program. (GM)

Guidance

Continuation training is a two-way process to ensure that relevant maintenance personnel remain current in terms of procedures, human factors and technical knowledge, and that the approved maintenance organization receives feedback on the adequacy of its procedures and maintenance instructions. Due to the interactive nature of this training, consideration would be given to the possibility that such training has the involvement of the quality department to ensure feedback is actioned. Alternatively, there is a procedure to ensure that feedback is formally passed from the training department to the quality department to initiate action.

Continuation training would cover changes in relevant State of Registry/Authority requirements, changes in organization procedures and the modification standard of the products being maintained plus human factor issues identified from any internal or external analysis of incidents. It would also address instances where personnel failed to follow procedures and the reasons why particular procedures are not always followed. In many cases, the continuation training reinforces the need to follow procedures and ensure that incomplete or incorrect procedures are identified so they can be corrected. This does not preclude the possible need to carry out a quality audit of such procedures.

The program for continuation training lists all relevant maintenance personnel and when training will take place, the elements of such training and an indication it was carried out reasonably on time as planned. Such information is subsequently transferred to the certifying personnel record.

The referenced procedure is specified in the MPM.

Continuation training requirements are intended to apply to personnel performing and certifying maintenance, as well as to planners, inspectors of incoming goods and other maintenance personnel that have safety-critical responsibilities.

MNT 4.5.5 The Operator shall ensure each maintenance organization that performs maintenance for the Operator has a training and qualification program for auditors used in the QA Program.

MNT 4.5.6 The Operator shall ensure each maintenance organization that performs maintenance for the Operator has a training program that provides for initial and continuation training for receiving inspectors.

MNT 4.5.7 If the Operator utilizes a maintenance organization that has maintenance personnel taxi the Operator's aircraft on the movement area of an airport, the Operator shall ensure such maintenance personnel are authorized, competent and qualified to conduct aircraft taxi operations.

4.6 Facilities and Physical Resources

MNT 4.6.1 The Operator shall ensure each maintenance organization that performs maintenance for the Operator has the basic facilities and work environment, appropriate for the maintenance tasks to be performed for the Operator, to include:

- i) A place of business, with a fixed address;
- ii) Communications equipment/software, such as telephones, facsimile machines, email and others;
- iii) Any devices used to establish when a particular aircraft requires maintenance. This may include planning bulletin boards, card files or a computer system;
- iv) A secure, dry storage area to retain aircraft technical records. (GM) ◀

Guidance

For base maintenance of aircraft, aircraft hangars or equivalent facilities are available, large enough to accommodate aircraft on planned base maintenance. If the maintenance organization does not own the hangar, it may be necessary to establish proof of tenancy. In addition, sufficient hangar space to carry out planned base maintenance will need to be demonstrated by the preparation of a projected aircraft hangar visit plan, relative to the maintenance program. The aircraft hangar visit plan is updated on a regular basis. For aircraft component maintenance, aircraft component workshops are large enough to accommodate the components on planned maintenance.

Aircraft hangar and aircraft component workshop structures would need to be to a standard that prevents the ingress of rain, hail, ice, snow, wind and dust, and aircraft hangar and aircraft component workshop floors are sealed to minimize dust generation. Basically, the aircraft hangar and aircraft component workshop provides protection from the normal prevailing local weather elements that are expected throughout any 12-month period

For line maintenance of aircraft, hangars are not essential but access to hangar accommodation is necessary during inclement weather for minor scheduled work and lengthy defect rectification.

Office accommodation allows incumbents, whether they are management, planning, technical records, quality or certifying personnel, to carry out their designated tasks in a manner that contributes to good aircraft maintenance standards. In addition, aircraft maintenance personnel are provided with an area where they may study maintenance instructions and complete maintenance records in a proper manner.

Note: *It is acceptable to combine any or all of the above requirements into one office subject to the personnel having sufficient room to carry out assigned tasks.*

Hangars used to house aircraft together with office accommodation would be such that the working environment permits personnel to carry out work tasks in an effective manner.

Temperatures are such that personnel can carry out required tasks without undue discomfort.

Dust and any other airborne contamination are kept to a minimum and not be permitted to reach a level in the work task area where visible aircraft/component surface contamination is evident.

An adequate level of lighting ensures each inspection and maintenance task can be carried out.

Noise levels are not permitted to rise to the point of distracting personnel from carrying out inspection tasks. Where it is impractical to control the noise source, such personnel would be provided with the necessary personal equipment to stop excessive noise causing distraction during inspection tasks.

Where a particular maintenance task requires the application of specific environmental conditions different to the foregoing, then such conditions would be observed. Such specific conditions are identified in the approved maintenance instructions.

The working environment for line maintenance is such that the particular maintenance or inspection task can be carried out without undue distraction. If the working environment deteriorates to an unacceptable level due to temperature, moisture, hail, ice, snow, wind, light, dust or other airborne contamination, then the particular maintenance or inspection tasks is suspended until satisfactory conditions are re-established.

For both base and line maintenance where dust or other airborne contamination results in visible surface contamination, all susceptible systems are sealed until acceptable conditions are re-established.

MNT 4.6.2 The Operator shall ensure each maintenance organization that performs maintenance for the Operator has the necessary technical data, equipment, tools and material to perform the work for which the maintenance organization has been approved, to include:

- i) Equipment and tools necessary to comply with the work specified in the agreement between the Operator and the maintenance organization;
- ii) Sufficient supplies and spare parts to ensure timely rectification of defects with regard to the Minimum Equipment List (MEL) provisions and in accordance with service level agreements. (GM)

Guidance

Tools and equipment, as specified in the Approved Data, can be made available when needed. Tools and equipment, which require to be controlled in terms of servicing or calibration to measure specified dimensions and torque figures, are to be clearly identified and listed in a control register, including any personal tools and equipment that the organization agrees can be used. Where the manufacturer specifies a particular tool or equipment, then that tool or equipment is used, unless the AMO has an approved procedure to determine the equivalency of alternative tooling/equipment and the procedure documented in the MPM.

The availability of equipment and tools indicates permanent availability except in the case of any tool or equipment that is so rarely needed that its permanent availability is not necessary.

A maintenance organization approved for base maintenance has sufficient aircraft access equipment and inspection platforms/docking such that the aircraft may be properly inspected.

The supplies necessary to perform maintenance work refer to readily available raw material and aircraft components, in accordance with the manufacturer's recommendations, unless the organization has an established spares provisioning procedure.

MNT 4.6.3 The Operator shall ensure each maintenance organization that performs maintenance for the Operator has facilities suitable for the storage of parts, equipment, tools and

material under conditions that provide security and prevent deterioration of and damage to stored items, to include:

- i) Clean work areas, including management offices;
- ii) Parts and material properly identified and stored;
- iii) Oxygen and other high-pressure bottles properly identified and stored;
- iv) Flammable, toxic or volatile materials properly identified and stored;
- v) Equipment identified and protected. (GM)

Guidance

Storage facilities for serviceable aircraft components are clean, well-ventilated and maintained at an even dry temperature to minimize the effects of condensation. Storage recommendations from the manufacturers for aircraft components are to be followed.

Storage racks are strong enough to hold aircraft components and provide sufficient support for large aircraft components such that the component is not distorted during storage.

All aircraft components, wherever practicable, remain packaged in protective material to minimize damage and corrosion during storage.

MNT 4.6.4 The Operator shall ensure each maintenance organization that performs maintenance for the Operator has a shelf-life program for applicable stored items, which includes a requirement for the shelf-life limit to be controlled and displayed.

MNT 4.6.5 The Operator shall ensure each maintenance organization that performs maintenance for the Operator has a receiving inspection process that:

- i) Assures incoming material has the required certification documentation and traceability;
- ii) Includes a process for verification of incoming part tags to ensure information on the tag (e.g., part name, part number, serial number, modification and/or any other applicable reference information) matches the corresponding information on the part.

4.7 Material Handling

MNT 4.7.1 The Operator shall ensure each maintenance organization that performs maintenance for the Operator has a secure quarantine area for rejected parts and materials awaiting disposition.

MNT 4.7.2 The Operator shall ensure each maintenance organization that performs maintenance for the Operator has a process for segregating aircraft serviceable parts, aircraft non-serviceable parts, and non-aircraft parts.

MNT 4.7.3 The Operator shall ensure each maintenance organization that performs maintenance for the Operator has an Electrostatic Sensitive Devices (ESD) Program, as specified in **Table 4.8**. (GM)

Guidance

Consideration is to be given to the scope of work of the AMO in determining applicability of specific handling and/or storage requirements.

MNT 4.7.4 The Operator shall ensure each maintenance organization that performs maintenance for the Operator has a method of storage that assures sensitive parts and equipment, such as oxygen system components (oxygen generators and bottles), O-rings and electrostatic sensitive devices are properly packaged, identified and stored to protect them from damage and contamination. (GM)

Guidance

The storage recommendations from the manufacturers are followed, with particular emphasis on recommendations with respect to temperature and humidity.

Consideration is to be given to the scope of work of the AMO in determining applicability of specific handling and/or storage requirements.

MNT 4.7.5 The Operator shall ensure each maintenance organization that performs maintenance for the Operator has a process that assures aircraft components and parts are shipped in suitable containers that provide protection from damage and, when specified by the OEM, ATA-300 or equivalent containers shall be used.

4.8 (Intentionally open)

4.9 Procedures Manual

MNT 4.9.1 The Operator shall ensure each maintenance organization that performs maintenance for the Operator provides for the use and guidance of relevant maintenance personnel a Maintenance Procedures Manual (MPM), which may be issued in separate parts, that contains information, as specified in **Table 4.9**. (GM)

Guidance

The MPM is a document that defines how an Approved Maintenance Organization accomplishes and controls its aircraft maintenance activities.

The MPM provides all personnel of the AMO with the necessary information to enable them to accomplish their duties and allows the Authority to understand and approve how the AMO complies with the applicable Airworthiness Requirements.

The MPM can comprise one manual or a suite of manuals. The MPM may have specific sections extracted to form a customized manual for distribution to maintenance contractors, line stations and others as applicable.

The purpose of the MPM is to set forth the procedures, means and methods for the AMO to accomplish maintenance. Compliance with its contents assures fulfillment of the AMO's responsibilities.

The management section in the MPM may be produced as a stand-alone document and made available to the key personnel who need to be familiar with its contents. The list of AMO Certifying Personnel may be produced as a separate document.

Responsibilities and procedures for revisions to the management part of the MPM and any associated manuals are to be specified.

The Quality Manager of the AMO is responsible for monitoring revisions of the MPM, unless otherwise agreed by the Authority.

Unless the Authority has agreed via a procedure stated in the amendment section of the MPM that certain defined classes of amendments may be incorporated without prior Authority approval, this process includes monitoring revisions to the associated procedures manuals.

The MPM also normally contains the following information:

- A brief description of the organization that includes:
 - The approximate size of the organization;
 - The geographic location of the office facilities and/or the base of operations, when not co-located;
 - Where necessary to ensure comprehension, a chart depicting the distribution of the functions.

- A statement signed by the maintenance organization confirming the MPM and any incorporated documents identified therein reflect the Organization's means of compliance with the Authority requirements;
- A description of the maintenance procedures and the procedures for completing and signing a maintenance release when maintenance is based on a system other than that of an approved maintenance organization;
- A description of the procedures for monitoring, assessing and reporting maintenance and operational experience;
- A description of procedures for assessing continuing airworthiness information and implementing any resulting actions;
- A description of the procedures for implementing action resulting from mandatory continuing airworthiness information;
- A description of procedures for ensuring that unserviceable items affecting airworthiness are recorded and rectified;
- A description of the procedures for advising the State of Registry/Authority/operator of significant in-service occurrences;
- A table of contents;
- A description of the MPM amendment control procedure;
- A means of identifying each page of the MPM. This can be in the form of a list of effective pages, with each page numbered and either dated or marked with a revision number;
- A description of the system used to distribute the MPM, including a distribution list; for non-scheduled work, temporary copies of the relevant portions of the MPM or any incorporated reference;
- Where the organization uses standards for the performance of elementary work or servicing different from those recommended by the manufacturer, the identification of those standards;
- Procedures to ensure regulatory information and technical data appropriate to the work performed are used in respect of elementary work and servicing;
- Details of the methods used to record the maintenance, elementary work or servicing performed, including the method of recording of defects in the technical record required by these standards;
- A detailed description of the procedures used to ensure that any maintenance tasks required by the maintenance schedule, airworthiness directives or any task required for the rectification of a defect are completed within the required time constraints;
- A description of the evaluation program required by these standards;
- A description of the defect rectification and control procedures, including details of:
 - The methods used to detect and report recurring defects;
 - The procedures for scheduling the rectification of defects whose repair has been deferred.
- The procedures used to report service difficulties in accordance with these standards;
- A description of the technical dispatch procedures, including procedures for ferry-flight authorizations, extended range operations (ETOPS, EROPS, LROPS), all weather operation or any other special operation;
- Procedures to ensure that only parts and materials that meet the requirements of the State of Registry/Authority/operator are used in the performance of elementary work or

servicing, including details of any spare part pool arrangements that have been entered into;

- A description of the methods used to ensure that the personnel authorized to perform elementary work or servicing are trained as required by the Authority and qualified in accordance with these requirements, as applicable;
- A description of personnel records to be retained;
- Details of the procedures applicable to maintenance arrangements and a list of all such arrangements, including the procedure used to communicate to an approved maintenance organization the maintenance requirements for planned and unforeseen maintenance activities, as well as those mandated by airworthiness directives;
- Procedure for revising and maintaining the MPM up to date and current;
- Approval of the Authority through approval of the list of effective pages or, in the case of manuals containing a small number of pages, approval can be identified on each page;
- Procedures used for the storage and control of petroleum, oil and other lubricants, as required by national regulations.

MNT 4.9.2 The Operator shall ensure each maintenance organization that performs maintenance for the Operator has a process to amend the MPM as necessary to keep the information contained therein up to date.

MNT 4.9.3 The Operator shall ensure each maintenance organization that performs maintenance for the Operator has a process to furnish copies of all amendments to the MPM promptly to all organizations or persons to whom the manual has been issued.

4.10 Maintenance Release

MNT 4.10.1 The Operator shall ensure each maintenance organization that performs maintenance for the Operator produces a completed and signed maintenance release that certifies all maintenance work performed has been completed satisfactorily and in accordance with the approved data and procedures described in the MPM of the maintenance organization. Such maintenance release shall include:

- i) Basic details of the maintenance performed;
- ii) A reference of the approved data used;
- iii) Maintenance tasks that were not accomplished;
- iv) The date maintenance was completed;
- v) When applicable, identity of the approved maintenance organization;
- vi) Identity of the person(s) that sign the release. (GM)

Guidance

Aircraft CRS

A Certificate of Release to Service (CRS) is required before flight:

- At the completion of any maintenance package specified by the aircraft operator;
- At the completion of any defect rectification, while the aircraft operates flight services between scheduled maintenance.

The maintenance package may include any one or a combination of the following elements: a check or inspection from the operator's aircraft maintenance program, Airworthiness Directives, overhauls, repairs, modifications, aircraft component replacements and defect rectification.

New defects or incomplete maintenance work orders identified during maintenance are brought to the attention of the operator for the specific purpose of obtaining agreement to rectify such

defects or complete the missing elements of the maintenance work order. In the case where the aircraft operator declines to have such maintenance carried out and provided this missing element/defect does not affect the airworthiness of the aircraft, this fact is entered in the aircraft CRS before issue of such certificate.

Component CRS

A CRS is necessary at the completion of any maintenance on an aircraft component while off the aircraft.

The authorized release certificate/airworthiness approval tag constitutes the aircraft component certificate of release to service when one AMO maintains an aircraft component for another AMO.

When an AMO maintains an aircraft component for use by the organization, an authorized release certificate/airworthiness approval tag may or may not be necessary, depending upon the organization's internal release procedures defined in the maintenance organization exposition and approved by the Authority.

4.11 Tooling and Calibration

MNT 4.11.1 The Operator shall ensure each maintenance organization that performs maintenance for the Operator has procedures to control and document the calibration and records of all tools, including personnel-owned tools, and preventing out-of-service and due-for-calibration tools and equipment from being used, in accordance with specifications in **Table 4.10**. (GM)

Guidance

The control of these tools and equipment requires that the organization has a procedure to inspect/service and, where appropriate, calibrate such items on a regular basis and indicate to users that the item is within any inspection or service or calibration time limit. A clear system of labeling of all tooling, equipment and test equipment is therefore necessary, providing information on:

- When the next inspection or service or calibration is due;
- Whether the item is serviceable or unserviceable and the reason for its unserviceability.

A register is maintained for all precision tooling and equipment together with a record of calibrations and standards used.

Inspection, service or calibration of tools and equipment on a regular basis is in accordance with the equipment manufacturer's instructions except where the maintenance organization can justify by means of results that a different time period is appropriate in a particular case.

The procedural approach complies with the standards authority (i.e., US Bureau of Standards or a country's approved standards certificate from the testing facility).

Table 4.1 – Maintenance Program Specifications

The Operator's Maintenance Program shall contain the following information for each aircraft:

- i) Maintenance tasks and the intervals at which these tasks are to be performed, taking into account the anticipated utilization of the aircraft;
- ii) A system that identifies mandatory maintenance tasks, and their corresponding intervals, for tasks that have been specified as mandatory in the approval of the type design, (i.e., Certification Maintenance Requirements (CMRs));
- iii) When applicable, a continuing structural integrity program;
- iv) Procedures for changing or deviating from (i), (ii) and (iii) above;
- v) When applicable, condition monitoring and reliability program descriptions for aircraft systems, components and powerplants.

Table 4.2 – Maintenance Management and Control Functions

The Operator shall provide for facilities, workspace, equipment, personnel and supporting services, as well as work environment, as necessary to ensure the implementation of the following maintenance management and control functions:

- i) The initial development of the maintenance schedule;
- ii) Scheduling maintenance, elementary work and servicing to be performed within the time constraints specified in the approved maintenance schedule;
- iii) Scheduling the accomplishment of Airworthiness Directives (ADs);
- iv) Operation of an evaluation program to ensure that all required procedures and, in particular the maintenance schedule, continue to be effective and in compliance with the applicable regulations;
- v) The proper dispatch of aircraft, with regard to:
 - a) Control of defects;
 - b) Availability of spare parts;
 - c) Conformity with the type design;
 - d) Requirements of other applicable operating rules.
- vi) Liaison with approved maintenance organizations for the performance of maintenance;
- vii) The development and update of the Maintenance Management Manual.

Table 4.3 – Maintenance Management Manual Content Specifications

The MMM shall contain the following maintenance policies, procedures and information:

- i) A description of the administrative arrangements between the operator and the approved maintenance organization;
- ii) Names and duties of the person or persons whose responsibilities are to ensure that maintenance is carried out in accordance with the MMM;
- iii) A description of aircraft types and models to which the manual applies;
- iv) A description of the maintenance procedures and the procedures for completing and signing a maintenance release when maintenance is based on a system other than that of an approved maintenance organization;
- v) A reference to the approved maintenance program;
- vi) A description of the methods used for the completion and retention of maintenance records, and including procedures for retaining back-up records;
- vii) A description of the procedures for monitoring, assessing and reporting maintenance and operational experience;
- viii) A description of the procedures for complying with the service information reporting requirements;
- ix) A description of procedures for assessing continuing airworthiness information and implementing any resulting actions;
- x) A description of the procedures for implementing action resulting from mandatory continuing airworthiness information;
- xi) A description of establishing and maintaining a system of analysis and continued monitoring of the performance and efficiency of the maintenance program, in order to improve and correct any deficiency in that program;
- xii) A description of procedures for ensuring that unserviceable items affecting airworthiness are recorded and rectified;
- xiii) A description of the procedures for advising the Authority of significant in-service occurrences;
- xiv) The scope, structure and functionality of the management system for maintenance operations, to include a description of departments, positions, authorities, duties, responsibilities and the interrelation of functions and activities within the system;
- xv) A process to ensure all amendments to the MMM are approved by the Authority and/or Operator, as applicable;
- xvi) A description of the duties, responsibilities and reporting relationships within the Quality Assurance Program, or a reference to a separate quality assurance manual, if such description is found in that manual.

Table 4.4 – Defect Reporting Specifications

The Operator shall have a procedure for reporting, to the Authority and, if applicable to the OEM, the following defects or un-airworthy conditions:

- i) General
 - a) Any failure, malfunction or defect where the safety of operation was or could have been endangered or which could have led to an unsafe condition.
- ii) Aircraft Structure
 - a) Any failure of aircraft primary structure or a principal structural element;
 - b) Cracks, permanent deformation or corrosion or defect or damage of aircraft primary structure or principal structural element that a repair scheme is not already provided in the manufacturer's repair manual, or that occur after repair;
 - c) Any part of the aircraft that would endanger the aircraft or any person by becoming detached in flight or during operations on the ground;
 - d) Major defect or damage to aircraft structure
 - e) Defects or damage to aircraft structures, if more than allowed tolerances
- iii) Powerplant
 - a) Uncommanded loss of thrust/power, shutdown or failure of any engine;
 - b) Uncontained failure of engine compressor, turbines;
 - c) Inability to feather or un-feather a propeller.
- iv) Aircraft Systems or Equipment
 - a) Fire or explosion;
 - b) Smoke, toxic or noxious fumes in the aircraft;
 - c) Fuel leakage that results in substantial loss, or is a fire hazard;
 - d) Fuel system malfunction that has significant effect on fuel supply and/or distribution;
 - e) Fire warnings, except those immediately confirmed as false;
 - f) Unwanted landing gear or gear doors extension / retraction;
 - g) Significant loss of braking action.
- v) If applicable, additional requirements of the Authority.

Table 4.5 – ETOPS Maintenance Program Specifications

The Operator's process shall ensure the ETOPS maintenance program complies with all requirements of the Type Certificate Holder and the Authority, to include:

- i) The titles and numbers of all airworthiness modifications, additions and changes that were made to qualify aircraft systems for ETOPS are provided to the Authority;
- ii) Any changes to maintenance and training procedures, practices or limitations established in the qualification for ETOPS are approved by the Authority before being adopted;
- iii) A reliability reporting program that is functional prior to approval and continued after approval (i.e., new aircraft type);
- iv) Prompt implementation of required modifications and inspections that could affect propulsion system reliability;
- v) Procedures to prevent an aircraft from being dispatched for extended range operation after power-unit shutdown or primary system failure on a previous flight until the cause of such failure has been positively identified and the necessary corrective action completed. Confirmation that such corrective action has been effective may, in some cases, require the successful completion of a subsequent flight prior to dispatch on an extended range operation;
- vi) A procedure to ensure the airborne equipment will continue to be maintained at the level of performance and reliability required for extended range operations.
- vii) A process for monitoring in-flight shutdowns.

Table 4.6 – Aircraft Technical Log (ATL) Specifications

The Operator shall have a process to ensure all aircraft have an aircraft technical log (ATL) or approved equivalent that comprises the following elements:

- i) Aircraft nationality and registration;
- ii) Date;
- iii) Place of departure;
- iv) Place of arrival;
- v) Time of departure;
- vi) Time of arrival;
- vii) Hours of flight;
- viii) Incidents, observations, as applicable;
- ix) Details of defects and rectifications/actions taken;
- x) Signature and identity of the person recording the defect
- xi) Signature and identity of the person signing the release following maintenance.

Table 4.7 – Quality Assurance Program Specifications and Control Processes

The Operator shall ensure each maintenance organization that performs maintenance for the Operator has an independent Quality Assurance Program that meets the specifications and has control processes as follows:

Specifications

- i) An internal audit/evaluation and surveillance program;
- ii) An established audit schedule;
- iii) A record of audit findings and corrective and/or preventive actions;
- iv) Assurance of appropriate corrective and/or preventive action;
- v) All elements necessary to confirm the maintenance organization is in compliance with the applicable regulations and the MPM;
- vi) The QA program confirms all referenced procedures remain applicable and effective.

Control Processes

- i) An initial evaluation, using the published checklists that cover all aspects of the maintenance organization technical activities, conducted within 12 months (or 24 months with appropriate management approval) following the date that the operating certificate is issued;
- ii) Recurring evaluations conducted at intervals established in the approved MPM;
- iii) Records of findings of compliance and non-compliance resulting from the evaluations required by i) and ii);
- iv) Procedures to ensure the findings of the evaluations are communicated to the person appointed and made available to the Operator;
- v) Where appropriate, immediate and long-term actions to correct the root cause of each non-compliance noted;
- vi) Follow-up procedures to ensure necessary corrective/preventive actions (both immediate and long-term) implemented by the Maintenance Organization are effective;
- vii) A record-keeping system to ensure details of evaluation findings, corrective actions, preventive actions and follow-up are recorded and that the records are retained for two complete evaluation cycles.

Table 4.8 – ESD Program Specifications

The Operator shall ensure each maintenance organization that performs maintenance for the Operator has an Electrostatic Sensitive Devices (ESD) Program, which comprises the following:

- i) Ensures that, where ESDs are handled, shop floor grids are grounded;
- ii) Ensures all ESDs are only handled using approved “earthing” (grounding) wrist straps and conductive desk mats;
- iii) Devices are contained in ESD-approved conductive packaging sealed with conductive tape;
- iv) ESDs are not to be stored on shelving covered with carpet, foam, vinyl or any other material that can store or produce an electrical charge;
- v) Appropriate warning and caution signs and decals are placed in areas where ESDs are handled;
- vi) Wrist straps and earthing mats are tested to ensure conductivity at regular intervals or prior to use, and such test results are recorded.

Table 4.9 – Maintenance Procedures Manual Content Specifications

The Operator shall ensure each maintenance organization that performs maintenance for the Operator provides for the use and guidance of relevant maintenance personnel a Maintenance Procedures Manual (MPM), which may be issued in separate parts, that contains the following information:

- i) A brief description of the organization that includes:
 - a) A general description of the scope of work authorized under the organization's terms of approval;
 - b) A general description of the organization's facilities.
- ii) A description of the organization procedures and quality or inspection system;
- iii) Names and duties of the responsible personnel;
- iv) Names and duties of the person or persons whose responsibilities are to ensure that maintenance is carried out in accordance with the MPM;
- v) A description of the procedures used to establish the competence of maintenance personnel;
- vi) A description of the methods used for the completion and retention of the Operator's maintenance records, including procedures for retaining back-up records;
- vii) A description of the procedure for preparing the maintenance release and the circumstances under which the release is to be signed;
- viii) The process for authorizing personnel to sign the maintenance release and the scope of their authorization;
- ix) A description of any additional procedures for complying with the Operator's maintenance procedures and requirements;
- x) A description of the procedures for complying with the service information reporting requirements;
- xi) A description of the procedure for receiving, amending and distributing within the maintenance organization, all necessary airworthiness data from the type certificate holder or type design organization.

Table 4.10 – Tooling and Calibration Program Specifications

The Operator shall ensure each maintenance organization that performs maintenance for the Operator has procedures to control and document the calibration and records of all tools, including personnel-owned tools, and preventing out-of-service and due-for-calibration tools and equipment from being used. The procedures shall include the following elements:

- i) Calibration date;
- ii) Identity of individual or vendor that performed calibration or check;
- iii) Calibration due date;
- iv) A calibration certificate for each item calibrated by an outside agency;
- v) Details of adjustments and repairs;
- vi) Repair history of the tool;
- vii) The part number and serial number of the standard used to perform the calibration.



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SECTION 5 – CABIN OPERATIONS (CAB)

Applicability

Section 5 addresses the safety and security requirements associated with the passenger cabin. This section is only applicable to an operator that conducts passenger flights with or without cabin crew. Specifications applicable to the carriage of supernumeraries are located in Section 2 (FLT) of this manual.

Individual provisions in this section all begin with a conditional phrase ("If the Operator"...) and are applicable to an operator that meets the condition(s) stated in the phrase.

Where an operator outsources the performance of cabin operations functions to external service providers, the operator retains overall responsibility for such functions, and must demonstrate processes for monitoring applicable external service providers in accordance with **CAB 1.10.2**.

Additional specifications applicable to passenger flights without cabin crew are located in Section 2 (FLT) of this manual.

Some security specifications applicable to functions within the scope of passenger cabin operations are located in Section 8 (SEC) of this manual.

General Guidance

Definitions of technical terms used in this ISM Section 5, as well as the meaning of abbreviations and acronyms, are found in the IATA Reference Manual for Audit Programs (IRM).

1 Management and Control

1.1 Management System

CAB 1.1.1 If the Operator conducts passenger flights with cabin crew, the Operator shall have a management system for the cabin operations organization that ensures control of cabin crew operations in the passenger cabin and the management of safety and security outcomes. **(GM)**



Guidance

Refer to the IRM for the definitions of *Cabin Crew*, *Operations*, *Operator* and *State*.

Refer to Guidance associated with **ORG 1.1.1** located in ISM Section 1.

CAB 1.1.2 If the Operator conducts passenger flights with cabin crew, the Operator shall have a manager for cabin operations that:

- i) If required, is a nominated official acceptable to the Authority;
- ii) Has the authority and is responsible for the management and supervision of all cabin operations activities;
- iii) Is accountable to senior management for ensuring the safety and security of cabin operations. **(GM)**

Guidance

Refer to the IRM for the definition of *Post Holder*.

The term "manager" is generic; the actual title associated with this position will vary with each operator.

In certain regulatory jurisdictions the individual that fills the position of manager of cabin operations may require nomination as a director or post holder as specified in **ORG 1.1.4**.

1.2 Authorities and Responsibilities

CAB 1.2.1 If the Operator conducts passenger flights with cabin crew, the Operator shall ensure the cabin operations management system defines the authorities and responsibilities of management and non-management personnel throughout the cabin operations organization that perform functions relevant to the safety or security of cabin operations. The management system shall also specify:

- i) The levels of management with the authority to make decisions that affect the safety and/or security of cabin operations;
- ii) Responsibilities for ensuring cabin operations are conducted in accordance with applicable regulations and standards of the Operator. **(GM)** ◀

Guidance

Refer to Guidance associated with **ORG 1.3.1** located in ISM Section 1.

CAB 1.2.2 If the Operator conducts passenger flights with cabin crew, the Operator shall have a process for the delegation of duties within the cabin operations management system that ensures managerial continuity is maintained when operational managers, including nominated post holders, if applicable, are absent from the workplace. **(GM)** ◀

Guidance

Refer to Guidance associated with **ORG 1.3.2** located in ISM Section 1.

CAB 1.2.3 If the Operator conducts passenger flights with cabin crew, the Operator shall ensure a delegation of authority and assignment of responsibility within the cabin operations management system for liaison with regulatory authorities, original equipment manufacturers and other operationally relevant external entities. **(GM)** ◀

Guidance

Refer to Guidance associated with **ORG 1.3.3** located in ISM Section 1.

CAB 1.2.4 If the Operator conducts passenger flights with cabin crew, the Operator shall ensure the duties and responsibilities of cabin crew members are defined and described in the Operations Manual (OM). **(GM)**

Guidance

Refer to the IRM for the definitions of *Cabin Crew Member* and *Operations Manual*.

As a minimum, OM documentation describes:

- Duties and responsibilities for cabin crew members, including cabin crew leader, if applicable;
- Chain (succession) of command onboard the aircraft.

CAB 1.2.5 If the Operator conducts passenger flights with cabin crew, the Operator shall ensure cabin crew members maintain familiarity with laws, regulations and procedures pertinent to the performance of their duties. **(GM)**

Guidance

An operator might utilize other methods that complement training to ensure cabin crew members remain knowledgeable of the laws, regulations, rules, guidelines and other information that is relevant in the performance of duties. For example, cabin crew members might have destination-specific information or briefing books that explain the customs and immigration processes associated with flying into foreign destinations. Additionally, laws, regulations and procedures might be reviewed to the extent necessary during cabin crew briefings prior to duty assignments.

CAB 1.2.6 If the Operator conducts passenger flights with cabin crew, the Operator shall have a policy that addresses the use of psychoactive substances by cabin crew members, which, as a minimum:

- i) Prohibits the exercise of duties while under the influence of psychoactive substances unless properly prescribed by a physician and accepted by either the Operator or a physician designated by the Operator;
- ii) Prohibits the problematic use of psychoactive substances;
- iii) Requires personnel who are identified as engaging in any kind of problematic use of psychoactive substances to be removed from cabin crew operational functions;
- iv) Conforms to the requirements of the Authority. **(GM)**

Guidance

Refer to the IRM for the definitions of *Biochemical Testing*, *Psychoactive Substances* and *Problematic Use of Substances*.

Operators subject to laws or regulations of the State that preclude the publication of a psychoactive substance prohibition policy as specified in this provision may demonstrate an equivalent method of ensuring that personnel engaging in any kind of problematic use of psychoactive substance abuse do not exercise their duties and are removed from safety-critical functions

Re-instatement to safety-critical duties could be possible after cessation of the problematic use and upon determination that continued performance is unlikely to jeopardize safety.

Some of the specifications of this provision may be addressed through implementation of a scheduling policy as specified in **CAB 3.1.7**.

Examples of other subjects that might be addressed in a comprehensive and proactive policy include:

- Education regarding the use of psychoactive substances;
- Identification, treatment and rehabilitation;
- Employment consequences of problematic use of psychoactive substances;
- Biochemical testing;
- Requirements of ICAO and the Authority.

Additional guidance may be found in the *ICAO Manual on Prevention of Problematic use of Substances in the Aviation Workplace* (Doc 9654-AN/945).

1.3 Communication

CAB 1.3.1 If the Operator conducts passenger flights with cabin crew, the Operator shall have a communication system that enables and ensures an exchange of information relevant to the conduct of cabin operations throughout the cabin operations management system and in all areas where operations are conducted. **(GM)** ◀

Guidance

Refer to Guidance associated with **ORG 1.4.1** located in ISM Section 1.

Specific means of communication between management and cabin crew members typically include:

- Email, Internet or other electronic systems;
- Safety or operational reporting system;

- Communiqués (letters, memos, bulletins);
- Publications (newsletters, magazines).

If email is used as an official medium for communication with cabin crew members, the process is typically formalized by the operator to ensure control and effectiveness.

CAB 1.3.2 If the Operator conducts passenger flights with cabin crew, the Operator shall have processes to ensure information relevant to cabin crew policies, procedures and responsibilities is communicated to all cabin crew members, and to ensure essential operational information or guidance is communicated to the cabin crew prior to each flight. **(GM)**

Guidance

Processes are in place to ensure information regarding policies, procedures and responsibilities is made available to cabin crew members on a regular and timely basis. Vehicles for communication typically include the cabin crew operations manual, operations bulletins, bulletin board notices, safety bulletins, electronic computer messages, telephone calls or any other effective means.

Also, a process is in place to ensure essential information necessary for the safe conduct of a flight is communicated to the cabin crew prior to the departure of each flight or series of flights. Such process would include a means for cabin crew members to acknowledge receipt of essential information. Written or verbal confirmation to a responsible manager that is recorded is considered an acceptable means of acknowledgement.

1.4 Provision of Resources

CAB 1.4.1 If the Operator conducts passenger flights with cabin crew, the Operator shall have the necessary facilities, workspace, equipment and supporting services, as well as work environment, to satisfy cabin operations safety and security requirements. **(GM)** ◀

Guidance

Refer to Guidance associated with **ORG 1.6.1** located in ISM Section 1.

CAB 1.4.2 If the Operator conducts passenger flights with cabin crew, the Operator shall ensure management and non-management positions within the cabin operations organization that require the performance of functions relevant to the safety or security of cabin operations are filled by personnel on the basis of knowledge, skills, training and experience appropriate for the position. **(GM)** ◀

Guidance

Refer to Guidance associated with **ORG 1.6.2** located in ISM Section 1.

The operational positions subject to the specifications of this provision typically include those management personnel required to ensure control and supervision of cabin operations in accordance with **CAB 1.1.1**, as defined by the operator or Authority.

1.5 Documentation System

CAB 1.5.1 If the Operator conducts passenger flights with cabin crew, the Operator shall have a system for the management and control of cabin operations documentation and/or data used directly in the conduct or support of operations, to include:

- i) A means of identifying the version of operational documents;
- ii) A distribution process that ensures on-time availability of the current version of the Operations Manual:
 - a) To appropriate operations personnel and cabin crew members.
 - b) If the operator outsources cabin operations functions, to external service providers.

- iii) Review and revision as necessary, to maintain the currency of information contained in documents;
- iv) A means of document retention that permits easy reference and accessibility;
- v) Identification and control of obsolete and/or reproduced documents;
- vi) Reception of documentation and/or data from external sources to ensure information is received in time to satisfy operational requirements;
- vii) Retention and dissemination of documentation received from external sources. (GM) ◀

Guidance

Refer to Guidance associated with **ORG 2.1.1** located in ISM Section 1.

CAB 1.5.2 If the Operator conducts passenger flights with cabin crew, and utilizes an electronic system for the management and control of any documentation used directly in the conduct of cabin operations, the Operator shall ensure the system provides for a regularly scheduled generation of back-up files for such documents. (GM) ◀

Guidance

Refer to Guidance associated with **ORG 2.1.2** located in ISM Section 1.

CAB 1.5.3 If the Operator conducts passenger flights with cabin crew, the Operator shall ensure documentation used in the conduct or support of cabin operations:

- i) Contains legible and accurate information;
- ii) Is written in language(s) understood by cabin operations personnel;
- iii) Is presented in a format appropriate for use by cabin operations personnel;
- iv) If applicable, is accepted or approved by the Authority. (GM) ◀

Guidance

The intent of this provision is for an operator to provide operational documentation in a format that is acceptable to the Authority and useable by all relevant personnel.

Documentation used in the support of cabin operations may:

- Exist in electronic form;
- Be issued in more than one language.

1.6 Operations Manual

CAB 1.6.1 If the Operator conducts passenger flights with cabin crew, the Operator shall have an Operations Manual (OM), which may be issued in separate parts, that contains the policies, procedures and other guidance or information necessary for cabin crew members to perform their duties and be in compliance with applicable regulations, laws, regulations, rules and Operator standards. The content of the OM shall be in accordance with specifications in **Table 5.1**. (GM)

Guidance

Refer to the IRM for the definition of *Practical Manual*.

The complete content of the OM for cabin operations may be issued in more than one document or manual. For example, an operator might choose to issue a practical manual, which would be a controlled document and considered part of the OM. A practical manual, which might be referred to as a quick reference handbook (QRH), typically comprises checklists and other selected information and material taken directly from the OM, and is utilized by cabin crew members in performing onboard duties and implementing normal, abnormal and/or emergency procedures.

Likewise, whereas the operational and training areas of cabin operations specified in **Table 5.1** are all included in the OM, they are typically issued in separate documents. For example, the

cabin crew training program (item viii) might be outlined in a training document, while policies, procedures, checklists are specified in operational documents.

CAB 1.6.2 If the Operator conducts passenger flights with cabin crew, and if required by the Authority, the Operator shall have a process to ensure the OM, including updates and revisions, is submitted for acceptance or approval. **(GM)**

Guidance

To display approval, the Operations Manual contains a list of effective pages and, if applicable, displays evidence of approval or acceptance by the Authority.

The manual (or revisions) is (are) typically accepted or approved, as applicable, prior to issuance to cabin crew members and before any operational procedures contained in the manual are implemented.

In some states, the regulatory authority might have a passive process for providing acceptance of the manual. In such case, the process defines the procedural steps and provides a record of the completed steps and date of acceptance.

CAB 1.6.3 If the Operator conducts passenger flights with cabin crew, the Operator shall have a process to ensure cabin crew members are issued, as a minimum, those parts of the OM that address duties and responsibilities relevant to the safety and security of cabin operations.

CAB 1.6.4 If the Operator conducts passenger flights with cabin crew, the Operator shall have a process to ensure holders of the OM enter the most current amendments or revisions into the manual and maintain the manual in an up-to-date condition. **(GM)**

Guidance

A process (checking or other methods) is designed to ensure the operations manual is kept up-to-date by individual cabin crew members. For example, a process could be established whereby a periodic check of the operations manual of each cabin crew member is conducted on a scheduled basis (e.g., during recurrent training, line evaluation or preflight briefing).

CAB 1.6.5 If the Operator conducts passenger flights with cabin crew, the Operator shall ensure a minimum of one complete version of the OM as specified in **CAB 1.6.1** is onboard the aircraft for passenger flights and located in a manner that provides for:

- i) If used directly for the conduct of cabin operations, immediate access by each cabin crew member;
- ii) If utilized as a reference document only, unobstructed access by the cabin crew. **(GM)**

Guidance

The number of complete OMs onboard the aircraft would be determined by the way the manual is to be utilized by the cabin crew. If the complete version of the OM is used directly for the conduct of cabin operations, it might be necessary to have more than one copy on board, depending on the size of the aircraft and the number of cabin crew members.

If a practical manual (or QRH) is used by the cabin crew for the conduct of cabin operations, a minimum of one complete version of the OM would typically be onboard the aircraft for use as a reference document. The flight deck is an acceptable location for the OM as a reference document if measures are in place that provide for unobstructed access by the cabin crew.

If electronically accessed manuals are provided onboard the aircraft, one or more access terminals would be located so the cabin crew has immediate or unobstructed access, as applicable to the way the manual is utilized, the size of the aircraft, and the number of cabin crew members.

CAB 1.6.6 If the Operator conducts passenger flights with cabin crew, the Operator shall ensure information in the OM pertaining to cabin crew duties and responsibilities is published in the designated common language(s) of the Operator, as specified in **CAB 3.1.3**.

CAB 1.6.7 If the Operator conducts passenger flights with cabin crew, and publishes a practical manual for use by the cabin crew in the performance of cabin operations duties, the Operator shall ensure one or more copies of the practical manual are onboard the aircraft for passenger flights and located in a manner that provides for immediate access by each cabin crew member. **(GM)**

Guidance

Refer to the IRM for the definition of *Practical Manual*.

A practical manual (or QRH) is typically required to be in the possession of each individual cabin crew member, available at each cabin crew station, or otherwise located to ensure immediate access by each cabin crew member.

1.7 Records System

CAB 1.7.1 If the Operator conducts passenger flights with cabin crew, the Operator shall have a system for the management and control of cabin operations records to ensure the content and retention of such records is in accordance with requirements of the Authority, as applicable, and to ensure operational records are subjected to standardized processes for:

- i) Identification;
- ii) Legibility;
- iii) Maintenance;
- iv) Retention and retrieval;
- v) Protection and security;
- vi) Disposal or deletion (electronic records). **(GM) ◀**

Guidance

Refer to guidance associated with **ORG 2.2.1** located in ISM Section 1.

CAB 1.7.2 If the Operator conducts passenger flights with cabin crew, and utilizes an electronic system for the management and control of cabin operations records, the Operator shall ensure the system provides for a scheduled generation of back-up record files. **(GM) ◀**

Guidance

Refer to Guidance associated with **ORG 2.2.2** located in ISM Section 1.

1.8 (Intentionally open)

1.9 Quality Assurance Program

CAB 1.9.1 If the Operator conducts passenger flights with cabin crew, the Operator shall have a quality assurance program that provides for the auditing and evaluation of the cabin operations management system and operational functions at planned intervals to ensure the organization is:

- i) Complying with applicable regulations and standards of the Operator;
- ii) Satisfying stated operational needs;
- iii) Identifying undesirable conditions and areas requiring improvement;
- iv) Identifying hazards to operations. **[SMS] (GM) →**

Guidance

Refer to the IRM for the definition of *Quality Assurance*.

Refer to Guidance associated with **ORG 3.4.1** located in ISM Section 1 for typical audit program requirements.

The specifications of this provision would typically apply to periodic audits of the training program, whether training is conducted by the operator or outsourced to an external service provider.

Audits are conducted at intervals that meet the requirements of the operator and/or the Authority.

CAB 1.9.2 If the Operator conducts passenger flights with cabin crew, the Operator shall have a process to ensure significant issues arising from audits of cabin operations functions are subject to management review in accordance with **ORG 1.5.1** and, as applicable, **ORG 1.5.2**. [SMS] (GM) ◀

Guidance

Refer to **ORG 1.5.1, 1.5.2, 3.4.4** and associated Guidance located in ISM Section 1.

Significant issues are typically defined by the operator, but are regarded as those issues that could impact the safety, security and/or quality of cabin operations.

CAB 1.9.3 If the Operator conducts passenger flights with cabin crew, the Operator shall have a process for addressing findings that result from audits of cabin operations functions, which ensures:

- i) Identification of root cause(s);
- ii) Development of corrective action as appropriate to address findings;
- iii) Implementation of corrective action in appropriate operational area(s);
- iv) Evaluation of corrective action to determine effectiveness. ◀

1.10 Outsourcing and Product Quality Control

CAB 1.10.1 If the Operator conducts passenger flights with cabin crew, and has external service providers conduct outsourced cabin operations functions, the Operator shall have a process to ensure a contract or agreement is executed with such external service providers. Contracts or agreements shall identify measurable specifications that can be monitored by the Operator to ensure requirements that affect the safety and/or security of cabin operations are being fulfilled by the service provider. (GM) ◀

Guidance

Refer to Guidance associated with **ORG 3.5.1** located in ISM Section 1.

Refer to the IRM for the definition of *Outsourcing*.

This provision only addresses cabin operations functions that are voluntarily outsourced to external service providers. An example of such a function would be the training of cabin crew members conducted by an external training organization.

Functions that are associated with the aircraft cabin, but would not normally be conducted by the cabin operations organization (e.g. aircraft catering) are not addressed by this provision.

CAB 1.10.2 If the Operator conducts passenger flights with cabin crew, and has external service providers conduct outsourced cabin operations functions, the Operator shall have a process to monitor such external service providers to ensure requirements that affect the safety and/or security of cabin operations are being fulfilled. (GM) ◀

Guidance

Monitoring and control of external organizations typically includes random sampling, product audits, supplier audits, or other similar methods.

Refer to Guidance associated with **ORG 3.5.2** located in ISM Section 1.

If an operator outsources any cabin operations function(s) to external service providers as specified in **CAB 1.10.1** , then the operator would be required to meet the specifications of this **CAB 1.10.2** .

CAB 1.10.3 If the Operator conducts passenger flights with cabin crew, and has external service providers conduct outsourced cabin operations functions, the Operator *should* include auditing as a process for the monitoring of external service providers in accordance with **CAB 1.10.2**. ◀

CAB 1.10.4 If the Operator conducts passenger flights with cabin crew, the Operator *should* have a process to ensure equipment or other operational products relevant to the safety of aircraft operations that are purchased or otherwise acquired from an external vendor or supplier meet the product technical requirements specified by the Operator prior to being used in the conduct of operations. (GM) ◀

Guidance

Refer to Guidance associated with **ORG 3.6.1** located in ISM Section 1.

Examples of products addressed by this provision could include:

- Operational manuals produced by external suppliers;
- Cabin door or passenger service unit training devices;
- Video training programs.

1.11 Safety Management

Risk Management

CAB 1.11.1 If the Operator conducts passenger flights with cabin crew, the Operator *should* have processes implemented in the cabin operations organization that include a combination of reactive and proactive methods for safety data collection and analysis to identify hazards that present existing or potential risks to aircraft operations. [SMS] (GM) ◀

Guidance

Refer to the IRM for the definitions of *Hazard (Aircraft Operations)* and *Safety Risk*.

Hazard identification is an element of the Safety Risk Management component of the SMS framework.

Refer to Guidance associated with **ORG 3.1.1** located in ISM Section 1.

CAB 1.11.2 If the Operator conducts passenger flights with cabin crew, the Operator *should* have a safety risk assessment and mitigation program implemented in the cabin operations organization that specifies processes to ensure:

- i) Hazards are analyzed to determine the existing and potential safety risks to aircraft operations;
- ii) Safety risks are assessed to determine the requirement for risk control action(s);
- iii) When required, risk mitigation actions are developed and implemented in cabin operations. [SMS] (GM) ◀

Guidance

Risk assessment and mitigation is an element of the Safety Risk Management component of the SMS framework.

Refer to Guidance associated with **ORG 3.1.2** located in ISM Section 1.

Operational Reporting

CAB 1.11.3 If the Operator conducts passenger flights with cabin crew, the Operator shall have an operational reporting system implemented in the cabin operations organization that:

- i) Encourages and facilitates cabin operations personnel to submit reports that identify safety hazards, expose safety deficiencies and raise safety concerns;
- ii) Ensures mandatory reporting in accordance with applicable regulations;
- iii) Includes analysis and cabin operations management action to address safety issues identified through the reporting system. [SMS] (GM) ◀

Guidance

Operational reporting is considered a *proactive* hazard identification activity in an SMS.

Refer to Guidance associated with **ORG 3.1.3** located in ISM Section 1.

CAB 1.11.4 If the Operator conducts passenger flights with cabin crew, the Operator *should* have a confidential safety reporting system implemented within the cabin operations organization in a manner that encourages and facilitates the reporting of events, hazards and/or concerns resulting from or associated with human performance in operations. [SMS] (GM) ◀

Guidance

A confidential safety reporting system is considered a *proactive* hazard identification activity in an SMS.

Refer to Guidance associated with **ORG 3.1.4** located in ISM Section 1.

Safety Performance Monitoring and Management

CAB 1.11.5 If the Operator conducts passenger flights with cabin crew, the Operator *should* have processes implemented in the cabin operations organization for setting performance measures as a means to monitor the safety performance of the organization and to validate the effectiveness of risk controls. [SMS] (GM) ◀

Guidance

Refer to the IRM for the definition of *Safety Assurance*.

Setting measurable safety objectives is included in the safety performance monitoring and measurement element of the Safety Assurance component of the SMS framework.

By setting performance measures, an operator is able to track and compare its operational performance against a target (i.e. the performance objective, typically expressed as a rate or number reduction) over a period of time (e.g. one year). Achievement of the target (or objective) would represent an improvement in the operational performance. The use of performance measures is an effective method to determine if desired safety outcomes are being achieved, and to focus attention on the performance of the organization in managing operational risks and maintaining compliance with relevant regulatory requirements.

Performance measures in cabin operations might address, for example, inadvertent slide deployments, turbulence-related injuries in the cabin and rapid deplaning/emergency evacuation events.

Refer to Guidance associated with **ORG 3.2.1** located in ISM Section 1.

2 Training and Qualification

2.1 Training Program

CAB 2.1.1 If the Operator conducts passenger flights with cabin crew, the Operator shall have a cabin crew training program, approved by the Authority, that ensures cabin crew members understand their responsibilities and are competent to perform the duties and functions associated with cabin operations. The cabin crew training program shall include initial, recurrent, requalification and aircraft type training courses.

CAB 2.1.2 If the Operator conducts passenger flights with cabin crew, the Operator shall ensure all cabin crew members complete an initial training course:

- i) As part of the cabin crew qualification process for individuals who have not previously been qualified as a cabin crew member for the Operator;
- ii) Prior to being assigned duties as a cabin crew member.

CAB 2.1.3 If the Operator conducts passenger flights with cabin crew, the Operator shall ensure all cabin crew members complete a recurrent training course once every 12 months in order to remain qualified to perform duties as a cabin crew member. **(GM)**

Guidance

An operator typically has a process that tracks qualification requirements to ensure cabin crew members complete recurrent training in a timely manner to remain qualified.

The nominal cycle for the completion of the recurrent training course by each cabin crew member is 12 months and, during that period, each cabin crew member receives training in the subject areas applicable to the course for that 12-month period.

As a means of ensuring flexibility in the scheduling process, in some regulatory jurisdictions an operator may be permitted to increase the maximum cycle for the completion of recurrent training by cabin crew members up to 15 months with no change to the original training anniversary date of each cabin crew member. Such flexibility, however, would not alter the requirement for a basic 12-month recurrent training cycle for cabin crew members.

In the event a cabin crew member becomes unqualified for any reason (e.g., extended leave of absence), completion of re-qualification training would establish a new anniversary date (superseding the original anniversary date) upon which recurrent training would be based.

CAB 2.1.4 If the Operator conducts passenger flights with cabin crew, the Operator shall have a cabin crew requalification training course, which shall be completed:

- i) By individuals who have failed to remain qualified as a cabin crew member;
- ii) As part of the process to regain qualification to perform duties as a cabin crew member.

Guidance

An operator typically has a process that tracks qualification requirements to ensure, when cabin crew members become unqualified for any reason, such crew members complete applicable requalification training prior to being assigned to perform duties as a cabin crew member.

CAB 2.1.5 If the Operator conducts passenger flights with cabin crew, the Operator shall have aircraft type training, which shall be completed by cabin crew members as part of the process to qualify and remain qualified to perform cabin crew duties on each type of aircraft to which they may be assigned. As a minimum, subjects covered under aircraft type training shall include:

- i) Aircraft systems;
- ii) Exit locations and operation;
- iii) Emergency equipment locations and operation;

- iv) Emergency assignments;
- v) Unique features of the aircraft cabin (as applicable for variants of a common aircraft type). (GM)

Guidance

An aircraft type training course for cabin crew members would include the description, locations and operation of an aircraft and its equipment.

Instruction in aircraft systems typically includes:

- Aircraft interior, passenger seats and restraints;
- Crew member seats and restraints;
- Aircraft-specific duties and responsibilities;
- Galley systems;
- Communication systems;
- Lighting systems;
- Oxygen systems.

Instruction on exit locations and operation addresses the types of exits on an aircraft.

Instruction on emergency equipment locations and operation addresses slides, rafts, slide/rafts, ramp slide/rafts, life jackets and other flotation devices.

Sub-specification iv): The term “emergency assignments” refers to specific duties assigned to cabin crew members during emergency situations.

A process, in accordance with requirements of the Authority, would be utilized to qualify cabin crew members that concurrently operate aircraft of different types or operate variants within one aircraft type. The qualification process would typically address the differences between variants or types.

CAB 2.1.6 If the Operator conducts passenger flights with cabin crew, the Operator shall require instructors that deliver training to cabin crew members to successfully complete an instructor training course that ensures such instructors have an adequate level of knowledge and standardization to provide instruction in the cabin crew training program. (GM)

Guidance

The syllabus for the cabin crew instructor training program typically focuses on instruction techniques and provides the level of technical knowledge relevant to the areas in which the individual instructor will deliver instruction.

CAB 2.1.7 If the Operator conducts passenger flights with cabin crew, the Operator shall ensure cabin crew training courses include testing or evaluation by written, oral or practical means to satisfy requirements for cabin crew members to demonstrate adequate knowledge, competency or proficiency to perform duties, execute procedures or operate emergency and life-saving equipment. (GM)

Guidance

Testing or evaluation, which may be accomplished using oral, written or practical means, ensures a thorough knowledge of and an ability to perform duty assignments and execute functions in the cabin.

Written tests and practical drills would be sufficiently thorough to ensure adequate coverage of all safety duties and functions to be performed in an emergency.

Written tests need not be lengthy (e.g., 10 multiple choice questions) provided they are randomly drawn from a large pool of questions that address a broad range of subjects. If tests include commercial questions (e.g., procedures associated with food and beverage services), then

testing methods would ensure a sufficient number of test questions to adequately evaluate knowledge of safety aspects.

Grading as part of evaluation would be calibrated such that high scores on non-safety issues do not override or mask low scores on important safety-related material.

Typically the process includes grading standards that define the minimum passing score for all testing to measure and indicate the level of safety competency. Similarly, grading standards are needed when evaluating the performance of cabin crew members during practical training exercises.

CAB 2.1.8 If the Operator conducts passenger flights with cabin crew, the Operator shall ensure the completion of required training by cabin crew members is recorded and such records are retained in accordance with **CAB 1.7.1**.

2.2 Program Elements

CAB 2.2.1 If the Operator conducts passenger flights with cabin crew, the Operator shall ensure cabin crew members receive training or orientation to provide familiarity with basic aviation subjects relevant to cabin operations and cabin crew duties. Such training or orientation shall be part of the cabin crew *initial training course* and, as a minimum, address the following subject areas:

- i) Applicable regulations;
- ii) Aviation terminology;
- iii) Basic theory of flight;
- iv) Relevant aircraft systems;
- v) Altitude physiology;
- vi) Standard operating procedures for cabin operations on the ground and all phases of flight. **(GM)**

Guidance

Training or orientation in aviation subjects typically would address, on a basic level:

- National, international and company-specific regulations;
- Aviation terminology and theory of flight necessary in the performance of cabin duties;
- Basic flight subjects such as major aircraft components, critical surfaces (including contamination), pressurization system, weight and balance, meteorology, turbulence, communications equipment and air traffic control;
- Subjects associated with altitude physiology, such as effects of altitude, hypoxia, the aircraft oxygen system and operation, gas expansion, depressurization and decompression sickness;
- Philosophy, structure and application of standard operating procedures.

CAB 2.2.2 If the Operator conducts passenger flights with cabin crew, the Operator shall ensure cabin crew members receive training that provides knowledge of safety policies and procedures associated with the preflight, in-flight and post-flight phases of cabin operations. Such training shall be included in the cabin crew initial and requalification training courses, and in the recurrent training course on a frequency in accordance with requirements of the Authority, but not less than once during every 24-month period. **(GM)**

Guidance

Training in safety policies and procedures typically addresses:

- Crew coordination and communication;

- Sterile flight deck;
- Mandatory briefings;
- Safety checks;
- Passenger acceptance and handling;
- Cabin baggage;
- Personal electronic devices;
- Fueling with passengers on board;
- Turbulence;
- Flight and cabin crew member incapacitation;
- Flight deck access.

CAB 2.2.3 If the Operator conducts passenger flights with cabin crew, the Operator shall ensure cabin crew members receive training that provides the knowledge required to execute emergency procedures. Such training shall be included in the cabin crew initial and requalification training courses, and in the recurrent training course on a frequency in accordance with requirements of the Authority, but not less than once during every 24-month period. As a minimum, training shall address emergency procedures associated with:

- i) Cabin fires;
- ii) Smoke and fumes;
- iii) Emergency landing (land and water);
- iv) Planned cabin evacuation (land and water);
- v) Unplanned cabin evacuation (land and water)
- vi) Medical emergencies.

CAB 2.2.4 If the Operator conducts passenger flights with cabin crew, the Operator shall ensure cabin crew members receive training that provides the knowledge required to understand the function and operation of cabin emergency equipment and to execute associated preflight checks. Such training shall be included in the cabin crew initial and requalification training courses and in the recurrent training course, on a frequency in accordance with requirements of the Authority, but not less than once during every 24-month period. **(GM)**

Guidance

Some emergency equipment, including slides, rafts, slide/rafts and ramp slide/rafts, might actually be included in an aircraft type-training course.

CAB 2.2.5 If the Operator conducts passenger flights with cabin crew, the Operator shall ensure cabin crew members complete practical training exercises consisting of cabin drills and hands-on operation of cabin equipment. Practical training exercises shall be included in the cabin crew initial and requalification training courses, and in the recurrent training course, on a frequency in accordance with requirements of the Authority, but all focus areas within the scope of practical training exercises shall be addressed not less than once during every 36-month period. As a minimum, focus areas within the scope of practical training exercises include:

- i) Cabin exit operations (normal and emergency) for each aircraft and exit type;
- ii) Cabin emergency evacuation;
- iii) Fire fighting;
- iv) Oxygen administration;
- v) If required, ditching. **(GM)**

Guidance

Practical training exercises to satisfy this provision typically include procedures associated with the use of cabin systems and equipment, to include the public address and intercom systems, life rafts, life preservers, PBE/smoke hoods, as well as operation of the door(s), deployment and use of emergency egress slide(s), fighting an actual or simulated fire, operation of hand fire extinguishers, passenger briefings and in-flight decompression (group drill).

Hands-on practical training exercises might involve the use of actual aircraft emergency and life saving equipment or be conducted using realistic and functional simulators or mock-ups.

Refer to the IRM for the definition of *Wet Drill*.

A requirement for a practical training exercise for ditching is determined by the State. An operator that conducts over-water and/or long-range over-water flights would typically ensure cabin crew members complete practical training exercises in ditching.

An operator might elect to include a wet drill as part of initial training as a means of providing hands-on familiarization with ditching equipment and procedures. A wet drill would require cabin crew members to go into the water and then climb into a raft, or board a raft in the water directly from an aircraft exit (with cabin crew members not going into the water).

When utilizing the actual aircraft to conduct training in emergency exit operations, emergency operation can be simulated by disarming the exits and having the trainee accomplish all steps as though the door were armed.

Due to challenges and problems associated with using actual aircraft systems, cabin simulators or training mock-ups are typically utilized to the extent possible. If cabin exit simulators or training mock-ups are not available, practical hands-on drills are performed onboard actual aircraft, which, to preclude disruption of training, would necessitate a documented program and aircraft schedule.

CAB 2.2.6 If the Operator conducts passenger flights with cabin crew, and utilizes pressurized aircraft, the Operator shall ensure cabin crew members receive training in high altitude depressurization. Such training shall be included in the cabin crew initial and re-qualification training courses, and in the recurrent training course, once during every 24-month period. Training in high altitude depressurization shall provide:

- i) An understanding of the effects on crew and passengers;
- ii) The knowledge necessary to execute associated emergency procedures. **(GM)**

Guidance

Training in depressurization may be conducted in the classroom or as a practical exercise.

A video presentation on the effects of hypoxia and a re-enactment of an explosive depressurization to emphasize the visual effects on the crew and passengers is an example of one means of presenting depressurization training. A presentation that includes photos, accompanied by a group discussion, is another example of a means of presenting such material.

CAB 2.2.7 If the Operator conducts passenger flights with cabin crew, the Operator shall ensure cabin crew members receive training in dangerous goods awareness, recognition and emergency action. Such training shall be included in the cabin crew initial and re-qualification training courses and in the recurrent training course on a frequency in accordance with requirements of the Authority, but all subjects within the scope of dangerous goods training shall be addressed not less than once during every 24-month period. As a minimum, subjects within the scope of dangerous goods training include:

- i) General philosophy;
- ii) Limitations;
- iii) Labeling and marking;

- iv) Recognition of undeclared dangerous goods;
- v) Provisions for passengers and crew;
- vi) Emergency procedures. **(GM)**

Guidance

This provision specifies the minimum dangerous goods awareness training required for cabin crew members and is applicable to an operator regardless of whether such operator *transports or does not* transport dangerous goods.

Recurrent training in dangerous goods is completed within a validity period that expires 24 months from the previous training to ensure knowledge is current, unless a shorter period is defined by a competent authority. However, when such recurrent training is completed within the final 3 months of the 24-month validity period, the new validity period may extend from the date on which the recurrent training was completed until 24 months from the expiry date of the current validity period. If such recurrent training is completed *prior* to the final three months of the validity period, the new validity period would extend 24 months from the date the recurrent training was completed.

CAB 2.2.8 If the Operator conducts passenger flights with cabin crew, the Operator shall ensure cabin crew members receive training in human performance to gain an understanding of the human factors involved in conducting cabin safety duties and coordinating with the flight crew during the execution of onboard emergency procedures. Such training shall be included in the cabin crew initial and re-qualification training courses, and in the recurrent training course, on a frequency in accordance with requirements of the Authority, but not less than once during every 24-month period. **(GM)**

Guidance

Training in human performance includes basic human factors concepts and crew resource management (CRM).

CAB 2.2.9 If the Operator conducts passenger flights with cabin crew, and utilizes aircraft that require more than one cabin crew member, the Operator shall ensure cabin crew members receive training that provides the necessary awareness of other cabin crew assignments and procedures to assure fulfillment of all cabin crew duties in the event of an emergency situation. Such training shall be included in the cabin crew initial and re-qualification training courses and in the recurrent training course, on a frequency in accordance with requirements of the Authority, but not less than once during every 24-month period.

CAB 2.2.10 If the Operator conducts passenger flights with cabin crew, the Operator *should* ensure cabin crew members participate in joint training activities or exercises with flight crew members for the purpose of enhancing onboard coordination and mutual understanding of the human factors involved in addressing emergency situations and security threats. **(GM)**

Guidance

Joint training provides a forum to focus on the coordination and communication necessary between the flight and cabin crews and the subjects associated with emergency procedures, security procedures and human factors. To the extent possible, such training would include joint practical training exercises. If such exercises are not possible, joint interactive discussion in the subject areas is an acceptable alternative.

CAB 2.2.11 If the Operator conducts passenger flights with cabin crew, the Operator shall ensure cabin crew members receive training that provides knowledge in first aid. Such training shall be included in the initial and re-qualification training courses and in the recurrent training course, on a frequency in accordance with requirements of the Authority, but all subjects within the scope of first aid training shall be addressed not less than once during every 36 month period. As a minimum, subjects within the scope of first aid training include:

- i) Life-threatening medical emergencies;
- ii) Cardiopulmonary resuscitation (CPR);
- iii) Management of injuries;
- iv) Management of illnesses;
- v) First-aid equipment and supplies;
- vi) If applicable, medical equipment and supplies. **(GM)**

Guidance

Training typically provides knowledge and skill in five subject areas appropriate for cabin crew members. Suggested subject areas are as follows:

- (1) Altitude physiology (working at altitude):
 - Changes in atmospheric pressure;
 - Relative hypoxia;
 - Trapped gas;
 - Decompression sickness;
 - Cabin depressurization;
 - Hyperventilation;
 - Cabin air quality.
- (2) Travel health:
 - Immunization;
 - Protection against infectious diseases;
 - Circadian rhythm and jet lag;
 - Fatigue management;
 - Personal safety (e.g. use of alcohol, other drugs, traffic safety).
- (3) Regulations:
 - First aid training and equipment (ICAO or NAA regulation);
 - Reporting of communicable diseases (ICAO and IHR);
 - Aircraft disinfection and disinsection (application of insecticide);
 - Biohazard waste disposal.
- (4) Procedures and resources:
 - Seeking medical advice (ground and/or in flight);
 - Medical equipment (e.g. first aid kit, medical kit, oxygen);
 - Death on board;
 - Birth on board;
 - Documentation to be completed;
 - PIC notification and communication.
- (5) First aid (problem recognition and management):
 - Assessing a casualty;
 - Life-saving procedures:
 - Assess ABC (adult, child, infant);
 - Choking;

- CPR (practical training);
- Recovery position.
- Medical problems:
 - The unconscious (underlying causes);
 - Suspected communicable diseases;
 - Respiratory disorders (asthma, hyperventilation, chronic lung diseases, persistent coughing);
 - Cardiovascular disorders (angina, heart attack, shock, DVT);
 - Abdominal problems (vomiting, diarrhea, pain, heartburn, bleeding);
 - Nervous system disorders (headache, seizure, stroke);
 - Ear, nose and throat problems such as barotrauma (body damage caused by pressurization difference) and/or epistaxis (nose bleed);
 - Behavioral/psychological disorders (panic attack, alcohol intoxication, irrational behavior);
 - Other problems (diabetes, allergic reaction, pregnancy related).
- Trauma:
 - Wounds and bleeding (practical training);
 - Burns;
 - Head and neck injury;
 - Eye injury;
 - Musculo-skeletal injury;
 - Chest and abdominal injury.

Initial training would typically address all the subject areas listed above.

Unless there were changes to the altitude physiology, travel health and regulations components, it would not be necessary to review these areas each year. However, in the event of changes, cabin crew members would typically be promptly advised, and such changes would then be addressed during the next recurrent training.

The procedures, resources and first aid subject areas would be addressed in recurrent training, to include testing and evaluation. Selected elements included in these subject areas would be addressed each year in recurrent training such that all elements are addressed during every 36-month period.

It is recommended that elements chosen to be reviewed each year be built into practical scenarios. Scenario-based training is advantageous because:

- It requires the crew to function as a team;
- Scenarios might be designed to cover multiple aspects of first aid, as well as subjects from other areas, such as altitude physiology and regulations;
- It stimulates participation and improves retention.

Other training methods would also be acceptable as long as it can be reasonably established that cabin crew members have the knowledge and skills to apply first aid and life-saving procedures at any given time.

CAB 2.2.12 If the Operator conducts passenger flights with cabin crew, the Operator shall ensure cabin crew members receive training in aviation security subjects that address appropriate crew communication, coordination and action in response to acts of unlawful interference. Such

training shall be included in the initial and re-qualification training courses and in the recurrent training course, on a frequency in accordance with the civil aviation security program of the State and requirements of the Authority, but not less than once during every 24-month period, with all subject areas within the scope of aviation security training addressed not less than once during every 48-month period. As a minimum, subject areas within the scope of aviation security include:

- i) Understanding of terrorist behaviors;
- ii) Threat evaluation;
- iii) Determination of the seriousness of an occurrence;
- iv) Crew coordination and communication;
- v) Security of the flight deck;
- vi) Appropriate self-defense responses;
- vii) Use of non-lethal protective devices;
- viii) Aircraft search procedures;
- ix) Least-risk bomb locations;
- x) Sabotage, hijacking;
- xi) Unruly passengers;
- xii) Other acts of unlawful interference. **(GM)**

Guidance

When developing the syllabus for a recurrent training course, all aviation security subject areas are considered to ensure inclusion of subjects that have been identified through an analysis of actual or likely trends experienced during line operations.

Training for cabin crew members as specified in item vi) typically focuses on conflict management and the level of response (e.g. passive, non-passive) to acts of unlawful interference that is appropriate for the operator. Such training would normally be in accordance with applicable regulations and/or the National Aviation Security Program, and, where no regulatory guidance exists, in accordance with the policy of the operator.

CAB 2.2.13 If the Operator conducts passenger flights with cabin crew, and utilizes aircraft that require more than one cabin crew member, the Operator shall ensure applicable cabin crew members receive leadership training prior to being assigned to duties as a designated cabin crew leader, in accordance with **CAB 3.1.2**.

2.3 Line Qualification

CAB 2.3.1 If the Operator conducts passenger flights with cabin crew, the Operator shall ensure cabin crew members complete supervised line flight experience as part of the cabin crew initial qualification process and prior to being assigned unsupervised duties as a cabin crew member. Supervised line flight experience shall be completed during a minimum of one sequence of actual line flight segments and shall require a cabin crew member to demonstrate an understanding of all responsibilities and competency to perform the duties and execute the procedures associated with cabin operations. **(GM)**

Guidance

Supervised line flight experience is typically referred to as a familiarization flight.

Where an operator utilizes more than one aircraft type, such supervised line experience may be accomplished on any one type.

Line flight experience (or familiarization flights) for cabin crew members, as part of the initial qualification process, may be conducted under the supervision of cabin crew members assigned

cabin leadership responsibilities in normal line operations (e.g., purser, cabin leader, lead flight attendant, onboard leader or other similar positions) or specially qualified to conduct these particular supervisory responsibilities. This activity does not require the presence of a cabin crew instructor or evaluator to provide the necessary supervision; however, it is important the person conducting the supervision has received training and understands the responsibilities for the cabin crew position(s) being observed.

Line flight experience is normally conducted using a checklist that contains the duties and procedures that are being observed. The results of the observation would be recorded on the checklist, which is then retained with other cabin crew training records.

CAB 2.3.2 If the Operator conducts passenger flights with cabin crew, and utilizes aircraft that require only one cabin crew member, the Operator shall ensure cabin crew members complete supervised line flight experience on such aircraft as part of the cabin crew qualification or re-qualification process, and prior to being assigned to perform unsupervised duties on an aircraft as the sole operating cabin crew member. **(GM)**

Guidance

Supervised line flight experience might be referred to as a familiarization flight.

Because there is no backup or support from other cabin crew members on an aircraft requiring only one cabin crew member, it is important that each cabin crew member has some line experience on such aircraft under supervision prior to being assigned to duties in line operations as the sole flight crew member on an aircraft.

Line flight experience for cabin crew members may be conducted under the supervision of cabin crew members assigned cabin leadership responsibilities in normal line operations (e.g., purser, cabin leader, lead flight attendant, onboard leader or other similar positions) or specially qualified to conduct these particular supervisory responsibilities. This activity does not necessarily require the presence of a cabin crew instructor or evaluator to provide the supervision.

CAB 2.3.3 If the Operator conducts passenger flights with cabin crew, the Operator *should* ensure cabin crew members complete supervised line flight experience as part of the cabin crew re-qualification process and prior to being assigned unsupervised duties on any aircraft requiring more than one cabin crew member. **(GM)**

Guidance

Supervised line flight experience is typically referred to as a familiarization flight.

This provision would be applicable to an operator that has aircraft in its fleet that require *two or more cabin crew members*.

Line flight experience for cabin crew members as part of the re-qualification training course may be conducted under the supervision of cabin crew members assigned cabin leadership responsibilities in normal line operations (e.g., purser, cabin leader, lead flight attendant, onboard leader or other similar positions) or specially qualified to conduct these particular supervisory responsibilities. This activity does not necessarily require the presence of a cabin crew instructor or evaluator to provide the necessary supervision.

CAB 2.3.4 If the Operator conducts passenger flights with cabin crew, the Operator *should* ensure cabin crew members receive a periodic line evaluation or check while performing their duties during line operations. **(GM)**

Guidance

The line evaluation check of cabin crew members is typically conducted by a cabin crew member who has been specially qualified and designated to conduct dedicated supervisory activities (e.g., evaluator, instructor, purser or other similar supervisory position).



Standards and Recommended Practices

The periodic line evaluation or check of cabin crew members is normally conducted using a checklist that contains the standards for performance that are being evaluated. The results of the evaluation or check would be recorded on the checklist, which is retained with other cabin crew qualification records.

3 Line Operations

3.1 Cabin Crew Requirements

CAB 3.1.1 If the Operator conducts passenger flights with cabin crew, the Operator shall specify and require a minimum number of cabin crew members for each aircraft type that is utilized in passenger operations. Such minimum cabin crew specification shall:

- i) Be based on aircraft seating capacity or number of passengers carried;
- ii) Be in accordance with minimum cabin crew requirements of the Authority;
- iii) Ensure the minimum number of cabin crew members necessary to effect a safe and expeditious evacuation of the aircraft.

CAB 3.1.2 If the Operator conducts passenger flights with cabin crew, and utilizes aircraft that require more than one cabin crew member, the Operator shall ensure designation of a cabin crew leader who has overall responsibility for the conduct and coordination of normal and emergency cabin procedures for flights with more than one cabin crew member. **(GM)**

Guidance

The position of cabin crew leader might have a different title or name according to the operator (e.g., purser, lead flight attendant, senior cabin crew member or onboard leader).

The use of selection prerequisites ensures designated cabin crew leaders have a defined amount of experience as a cabin crew member (e.g., minimum one year of experience) before being assigned to a leadership position. New operators could be required to establish alternative minimum experience requirements.

Once selected, cabin crew leaders would receive specialized leadership training in accordance with applicable regulations and standards of the operator before being assigned to operations.

A replacement plan, approved by the Authority, if applicable, would be necessary to ensure the leader position is filled when the primary cabin crew leader becomes incapacitated or is otherwise unable to carry out assigned duties.

CAB 3.1.3 If the Operator conducts passenger flights with cabin crew, the Operator shall have procedures to ensure communication between the cabin crew and flight crew during line operations is conducted in the designated common language(s) of the Operator, as specified in **FLT 3.1.1**. **(GM)**

Guidance

The specifications contained in **FLT 3.1.1** require an operator to designate a common language that is used by flight crew members for communication with the cabin crew during line operations.

In cases when the cabin crew includes members who do not all speak the common language, cabin crew members would normally be assigned to work positions throughout the cabin to ensure any communication with the flight crew is conducted by members who speak the common language.

During long haul operations, the crew rest schedule is typically structured so a sufficient number of cabin crew members who speak the common language are available and in a position to communicate with the flight crew when necessary.

Refer to **FLT 3.1.1** in Section 2 (FLT) of this manual.

CAB 3.1.4 If the Operator conducts passenger flights with cabin crew, the Operator shall have flight time and duty period limitations as well as a rest period scheme for cabin crew members. Such limitations and rest period provisions shall be in accordance with applicable regulations and ensure fatigue occurring either in one flight, successive flights or accumulated over a period of time does not endanger the safety of cabin operations. **(GM)**

Guidance

The intent of this provision is to ensure cabin crew members are performing at an adequate level of alertness in order to preclude fatigue from endangering the safety of flight.

If no regulatory limitations exist, an operator would establish its own limits that it considers appropriate to ensure safe operations. Such limitations would typically address:

- Maximum flight time;
- Maximum duty period;
- Minimum rest period.

Variations from an operator's fatigue management policies are permissible if the means for establishing such variations provide an equivalent level of safety and are approved or accepted by the State. The intent of any such variation is to permit operators a degree of flexibility when making changes to fatigue management policies to account for changing circumstances in a dynamic operating environment.

CAB 3.1.5 If the Operator conducts passenger flights with cabin crew, the Operator shall have a process to ensure flight time, flight duty periods and rest periods for cabin crew members are recorded and retained for a minimum period of time in accordance with applicable regulations. **(GM)**

Guidance

For each cabin crew member, flight/duty time records would typically consist of:

- The start, duration and end of each flight duty period;
- The start, duration and end of each duty period;
- Rest periods;
- Flight time.

If computer software is used for cabin crew planning and scheduling, the operator would ensure the software provides appropriate warnings when individual flight segments or series of flight segments are projected to exceed applicable maximum or minimum limits.

CAB 3.1.6 If the Operator conducts passenger flights with cabin crew, the Operator shall consider the following as duty time for the purpose of determining required rest periods and calculating duty time limitations for operating cabin crew members:

- i) Pre-operating deadhead time;
- ii) Training period(s) prior to a flight;
- iii) Administrative or office time prior to a flight (for cabin crew members that serve in a management function). **(GM)**

Guidance

The term *deadhead* in sub-specification i) refers to the transportation of non-operating crew members, typically for positioning purposes, before or after an operational duty assignment.

The intent of this provision is to ensure an operator considers non-flight duty time that is likely to induce fatigue into the calculation of duty time limitations and the determination of required rest periods.

CAB 3.1.7 If the Operator conducts passenger flights with cabin crew, the Operator shall have a policy that ensures cabin crew members, prior to being assigned to duty, will not be affected by factors that could impair human performance. Such factors include, as a minimum:

- i) Pregnancy;
- ii) Illness, surgery or use of medication(s);

- iii) Blood donation;
- iv) Deep underwater diving.

Guidance

The intent of this provision is to ensure an operator's policies address the "fitness for duty" of cabin crew members. Such policy typically assigns responsibility to the individual cabin crew member to report and remain "fit for duty" in accordance with the specifications.

3.2 Cabin Crew Policies and Procedures

CAB 3.2.1 If the Operator conducts passenger flights with cabin crew, the Operator shall have procedures that specify cabin crew functions, applicable to each aircraft type, and actions to be executed during an emergency or situation requiring an emergency evacuation.

CAB 3.2.2 If the Operator conducts passenger flights with cabin crew, the Operator shall have procedures to ensure a coordinated and expeditious cabin evacuation during aircraft fueling operations with passengers embarking, on board or disembarking. As a minimum, procedures shall require:

- i) Cabin exits are designated for rapid deplaning or emergency evacuation, and routes to such exits are unobstructed;
- ii) The area outside designated emergency evacuation exits is unobstructed;
- iii) One cabin crew member or other qualified person is positioned by the boarding door(s);
- iv) Means of communication are established among cabin crew members and with passengers;
- v) A suitable method of communication is established between qualified persons in a position to monitor passenger safety and personnel that have responsibility for fueling operations. **(GM)**

Guidance

During fueling operations with passengers on board the aircraft, the designation of exits for rapid deplaning or evacuation takes into account various factors, which would typically include:

- Aircraft type (e.g. some aircraft types might require the designation of over-wing exits for evacuation);
- Number of cabin crew members on board;
- The method being utilized for passenger boarding and/or deplaning (e.g. boarding bridge, air stairs);
- Exterior obstructions (e.g. catering vehicle) that might render an exit unusable for an emergency evacuation;
- Interior obstructions (e.g. catering trolley) that might block the route to one or more emergency evacuation exits.

Cabin crew procedures ensure a method of communication is established.

- Among cabin crew members positioned throughout the cabin for the purpose of coordination should a passenger evacuation be required (when more than one cabin crew member is required to be on-board);
- Between the cabin crew and passengers (one way) for the purpose of providing instructions should a passenger evacuation be required;
- Between the cabin crew and the flight crew (when the flight crew is onboard) for the purpose of ensuring notification when fueling operations are in progress and when a passenger evacuation is required;

- Between the cabin crew and the flight crew and/or ground handling personnel for the purpose of ensuring notification when fueling operations must be discontinued for any reason.

CAB 3.2.3 If the Operator conducts passenger flights with cabin crew, the Operator shall have a procedure to ensure the cabin crew verifies that passenger and crew baggage in the passenger cabin is securely stowed.

CAB 3.2.4 If the Operator conducts passenger flights with cabin crew, and utilizes aircraft equipped with cabin doors that have an automatic slide or slide/raft deployment system, the Operator shall have cabin crew procedures for arming and disarming such door systems. **(GM)**

Guidance

This standard addresses door systems that are designed to automatically deploy a slide or slide/raft for emergency evacuation if the door is opened with the system in the armed mode. Such door systems are typically armed once the door has been closed for flight, and disarmed at the end of a flight and prior to the door being opened for passenger and/or crew deplaning.

Depending on the type of aircraft and door system, the pack that contains the slide or slide/raft might be mounted in the door itself, or might be mounted in the fuselage, tail cone or other location.

CAB 3.2.5 If the Operator conducts passenger flights with cabin crew, the Operator shall require cabin crew members to be seated with their safety harness fastened:

- i) During the takeoff and landing phases of flight;
- ii) Whenever the pilot-in-command so directs. **(GM)**

Guidance

The safety harness consists of the seat belt and shoulder straps.

CAB 3.2.6 If the Operator conducts passenger flights with cabin crew, the Operator *should* require cabin crew members to be seated with their safety harnesses fastened when the aircraft is taxiing, except to perform safety-related duties.

CAB 3.2.7 If the Operator conducts passenger flights with cabin crew, the Operator shall have procedures for preparation of the cabin prior to takeoff and landing. **(GM)**

Guidance

Preparation of the cabin prior to takeoff and landing would require the cabin crew to visually verify certain conditions are in effect. Items checked by the cabin crew will vary according to aircraft type and equipment carried, but might typically include:

- Passenger seat belts fastened;
- Tray tables and seat backs in a stowed and upright position;
- Cabin baggage and other carry-on items secure in designated areas;
- As applicable, in-flight entertainment system viewing screens off and stowed;
- Galleys and associated equipment stowed or restrained.

CAB 3.2.8 If the Operator conducts passenger flights with cabin crew, the Operator shall have cabin crew procedures for providing passengers with instructions for appropriate action in the case of an in-flight emergency situation.

CAB 3.2.9 If the Operator conducts passenger flights with cabin crew, and utilizes movable carts or trolleys for passenger service in the aircraft cabin, the Operator shall:

- i) Ensure such carts or trolleys are equipped with braking devices;

- ii) Have a process to ensure braking devices are operative;
- iii) Have procedures to ensure unserviceable carts or trolleys are withdrawn for repair or replacement. **(GM)**

Guidance

Braking devices on service carts or trolleys would typically be checked prior to the first flight of the day. If an operator uses external service providers for catering, the operator may delegate the serviceability of trolleys and service carts to the caterer(s). Under such circumstances, provisions under **CAB 1.10**, Outsourcing and Product Control, would be applicable.

Should a defective braking device be discovered during flight, the trolley or cart is stowed and not utilized for cabin service. Additionally, tagging or labeling procedures would be implemented to ensure an unserviceable trolley or cart is easily identified and will be withdrawn for repair or replacement.

CAB 3.2.10 If the Operator conducts passenger flights with cabin crew, and utilizes movable carts or trolleys for passenger service in the aircraft cabin, the Operator shall have procedures to ensure such carts or trolleys are:

- i) Stowed during the takeoff and landing phases of flight;
- ii) Stowed if feasible, or secured, during an emergency situation;
- iii) Stowed if feasible, or secured, prior to or during turbulence. **(GM)**

Guidance

The term *stowed* means service carts or trolleys are moved into dedicated compartments (or sleeves) that are designed to lock such equipment in place and prevent any movement within the cabin.

The term *secured* means service carts or trolleys are positioned in the cabin, typically with brakes locked, in a manner that inhibits movement. Such action would be taken only when time constraints or cabin conditions are such that normal stowage is not feasible.

CAB 3.2.11 If the Operator conducts passenger flights with cabin crew, and utilizes movable carts or trolleys for passenger service in the aircraft cabin, the Operator shall ensure cabin crew members do not leave such carts or trolleys unattended in the aircraft aisles unless the braking devices are engaged.

CAB 3.2.12 If the Operator conducts passenger flights with cabin crew, and utilizes aircraft with electrical system circuit breakers that are accessible to cabin crew members, the Operator shall have procedures that specify limitations for resetting tripped circuit breakers by cabin crew members during flight. **(GM)**

Guidance

Procedures and limitations with respect to resetting circuit breakers include:

- Authority to reset (normally from the captain);
- Applicable type of equipment;
- Applicable conditions;
- Number of resets permitted.

3.3 Flight Deck Coordination

CAB 3.3.1 If the Operator conducts passenger flights with cabin crew, the Operator shall have a policy and associated procedures that define a sterile flight deck during critical phases of flight, to include:

- i) A protocol for communication between the cabin crew and flight crew;

- ii) A protocol for notification of the flight crew in the event of an emergency. (GM)

Guidance

Refer to the IRM for the definitions of *Critical Phase of Flight* and *Sterile Flight Deck*.

The phases of flight when the operational state of the flight deck must be sterile would be defined by the operator or the State.

CAB 3.3.2 If the Operator conducts passenger flights with cabin crew, and utilizes aircraft equipped with a flight deck entry door in accordance with FLT 4.5.1, FLT 4.5.2 or FLT 4.5.3, the Operator shall have policies and/or procedures that are in accordance with requirements of the Authority and, as a minimum, define:

- i) When the flight deck entry door must remain locked;
- ii) The way the cabin crew notifies the flight crew in the event of suspicious activity or security breaches in the cabin;
- iii) The way cabin crew members gain entry to the flight deck. (GM)

Guidance

Refer to FLT 4.5.1, 4.5.2 and 4.5.3 located in ISM Section 2.

The intent of this provision is to ensure the security of the flight deck by providing the flight and cabin crew with appropriate policy and procedures for use when a flight deck door is installed.

Policies and procedures related to flight deck security may be considered sensitive information and provided to relevant personnel in a manner that protects the content from unnecessary disclosure.

CAB 3.3.3 If the Operator conducts passenger flights with cabin crew, the Operator shall have procedures for communication and coordination between the cabin crew and flight crew to ensure a combined and coordinated process in addressing:

- i) Passenger safety information;
- ii) Cabin readiness prior to first aircraft movement, takeoff and landing;
- iii) Arming or disarming of cabin entry door slides, if applicable;
- iv) Preparation for and an encounter with turbulence;
- v) Medical situations;
- vi) Flight or cabin crew member incapacitation;
- vii) Emergency evacuation;
- viii) Abnormal situations;
- ix) Emergency situations. (GM)

Guidance

Refer to the IRM for the definition of *Sterile Flight Deck*.

Communication and coordination between the flight crew and cabin crew might be verbal or non-verbal and could be included as an integral part of specific abnormal or emergency procedures.

A process would be necessary to ensure a flight and cabin crew coordination briefing prior to each flight addresses relevant safety subjects (e.g., sterile flight deck, security, aircraft technical issues, flight crew incapacitation, cabin depressurization, onboard fire, emergency evacuation, forced landing or ditching.)

Appropriate communication and coordination between the flight and cabin crews ensures cabin entry door slides are armed prior to first movement of the aircraft.

CAB 3.3.4 If the Operator conducts passenger flights with cabin crew, the Operator shall have procedures to ensure the cabin crew provides notification to the flight crew when a safety-related situation has been identified. **(GM)**

Guidance

Examples of safety-related situations that typically require notification to the flight deck include:

- Unruly behavior by passenger(s);
- Injury to passenger or crew member;
- Medical emergencies, use of first aid or medical equipment;
- Fire, smoke or toxic fumes in the cabin;
- Failure of any emergency system or equipment.

In general, any occurrences that could pose danger to the aircraft or its occupants would be considered reportable to the flight deck.

Procedures typically specify certain critical phases of flight during which the cabin crew is prohibited from initiating any communication to the flight crew (e.g., takeoff and landing).

CAB 3.3.5 If the Operator conducts passenger flights with cabin crew, the Operator *should* have a policy and procedures that define and specify the requirements for standard wording, terminology, signals and/or verbal commands used for communication between cabin crew and flight crew during normal, abnormal and emergency situations. **(GM)**

Guidance

The intent of this provision is to ensure communication between cabin crew and flight crew during abnormal and emergency situations is conducted using standardized methods of communication identified and defined in documentation available to applicable crew members.

Examples of such situations include:

- Cabin depressurization;
- Severe turbulence
- Emergency evacuation;
- “Before impact” notification (forced/emergency landing or ditching);
- Crew member incapacitation;
- Unlawful interference.

CAB 3.3.6 (Intentionally open)

CAB 3.3.7 If the Operator conducts passenger flights with cabin crew, the Operator shall have procedures that ensure the cabin crew is notified:

- i) When to prepare for takeoff;
- ii) When the flight is in the descent phase;
- iii) When to prepare for landing.

3.4 Cabin Operations Policies and Procedures

CAB 3.4.1 If the Operator conducts passenger flights with cabin crew, and transports passengers that require special attention, the Operator shall have a policy and associated procedures for the acceptance and onboard handling of such passengers by the cabin crew. Such policy and procedures shall be in accordance with applicable regulations and, as a minimum, address:

- i) Intoxicated and/or abusive passengers;

- ii) Passengers with disabilities or reduced mobility;
- iii) Passengers with injuries or illness;
- iv) Infants and unaccompanied children;
- v) Inadmissible passengers;
- vi) Deportees;
- vii) Passengers in custody. **(GM)**

Guidance

A policy and associated procedures typically address the acceptance and onboard handling of passengers that require special attention, or perhaps the refusal to board certain categories of passengers. For example, such policy and procedures might specify:

- For intoxicated and/or abusive passengers: Pilot-in-command would have the authority to refuse carriage, order in-flight restraint or, depending on the severity of circumstances, divert a flight to an alternate airport for disembarkation and handover to authorities.
- For passengers with disabilities: Refusal or limitations in accordance with requirements of the Authority; specialized equipment that would need to be available (e.g., onboard wheelchair); onboard safety briefing as applicable to the particular passenger's disability.
- If unaccompanied children are accepted: Maximum number, minimum age, any special arrangement while on board, specific seat allocation,
- If stretchers are accepted: Maximum number, escort requirement, associated equipment that would need to be available.
- If passengers in custodies are accepted: Maximum number, number of officers escorting them, specific seat allocation.

CAB 3.4.2 If the Operator conducts passenger flights with or without cabin crew, the Operator shall have a policy and associated procedures for addressing passengers that exhibit unruly behavior and/or interfere with a crew member prior to or during flight. Such policy and procedures shall be in accordance with local laws and regulations, and specify reasonable measures for ensuring passengers obey lawful commands from the PIC and/or cabin crew for the purpose of securing the safety of the aircraft, persons on board and their property. As a minimum, the policy and procedures shall address:

- i) Identification of disruptive behavior
- ii) Conditions under which passengers may be denied boarding, disembarked or restrained in accordance with the authority of the commander
- iii) Reporting of instances of disruptive behavior. **(GM)**

Guidance

Procedure would typically be published to ensure awareness by all applicable ground and flight personnel.

To ensure procedures are effective, guidelines are typically created to address all aspects of managing unruly behavior including prevention. For example, because of the increased effect of alcohol at altitude, guidelines would normally ensure the service of such beverages is carried out in a reasonable and responsible manner. Additionally, passengers would typically not be permitted to drink alcohol unless served by the cabin crew; the cabin crew would be attentive to identifying passengers that might be consuming their own alcohol.

CAB 3.4.3 If the Operator conducts passenger flights with cabin crew, the Operator shall have cabin crew procedures that ensure all passengers have ready access to emergency oxygen.

CAB 3.4.4 If the Operator conducts passenger flights with cabin crew, the Operator shall have cabin crew procedures that ensure all passengers are seated with their seat belts (or harness or other restraint provided) fastened:

- i) During the taxi phases of a flight;
- ii) During the takeoff and landing phases of flight;
- iii) Prior to and/or during turbulence;
- iv) During an emergency situation, if considered necessary.

CAB 3.4.5 If the Operator conducts passenger flights with or without cabin crew, the Operator shall have procedures in accordance with applicable regulations to ensure a means of infant restraint is utilized during the flight phases or conditions specified in **CAB 3.4.4**. **(GM)**

Guidance

The term “infant” refers to small children as defined by the local authority. If the local authority does not have a definition, the operator would publish its own definition in the OM.

Some regulatory authorities require the use of infant restraint devices, for which there is no universally accepted definition. The term refers to any device utilized specifically to keep very small children fixed to their seats in the aircraft cabin. Child auto seats and “loop belts” are examples of infant restraint devices.

Procedures would be in place to ensure small children are not accidentally dislodged from their seats in the cabin. Such procedures typically include the use of infant restraint devices or could specify other means of restraint. If the regulatory authority requires specific procedures or identifies an approved type of restraint device, the operator is required to be in compliance with those requirements.

CAB 3.4.6 If the Operator conducts passenger flights with or without cabin crew, and utilizes aircraft that have passenger seats adjacent to cabin emergency exits, the Operator shall have guidance and procedures to ensure passengers seated in such seats meet any applicable requirements and restrictions.

CAB 3.4.7 (Intentionally open)

CAB 3.4.8 If the Operator conducts passenger flights with or without cabin crew, the Operator shall have guidelines and associated procedures to ensure control of the use of personal electronic devices in the passenger cabin.

CAB 3.4.9 (Intentionally open)

CAB 3.4.10 If the Operator conducts passenger flights with cabin crew, the Operator shall have cabin crew procedures that ensure an announcement is made to passengers for matters related to safety, including turbulence and abnormal and emergency situations.

CAB 3.4.11 If the Operator conducts passenger flights with cabin crew, the Operator shall have guidance and associated cabin crew procedures to ensure passengers:

- i) Are informed and receive instruction on all restrictions pertaining to onboard smoking;
- ii) Comply with the *Fasten Seat Belt* sign and, if applicable, the *No Smoking* sign.

CAB 3.4.12 If the Operator conducts passenger flights with cabin crew, the Operator shall have guidance and/or cabin crew procedures to ensure passengers are familiar with the location and use of:

- i) Seat belts;
- ii) Emergency exits;
- iii) Life jackets (individual flotation devices), if required;

- iv) Oxygen masks;
- v) Emergency equipment for collective use. **(GM)**

Guidance

A demonstration video or an announcement on the cabin public address system are methods that ensure passengers are familiar with locations and the use of the specified items.

A safety information card, which is made available to each passenger, is typically used to supplement a demonstration or announcement.

Seat cushions that are designed to float are considered individual flotation devices.

CAB 3.4.13 If the Operator conducts passenger flights with cabin crew, the Operator shall have a policy and cabin crew procedures for the administration of oxygen, as applicable to aircraft type and configuration. **(GM)**

Guidance

On certain aircraft, oxygen is made available in the cabin during a depressurization through automatically deployed oxygen masks, and passengers, as instructed, are expected to self-administer oxygen using the masks. Oxygen is also administered to those with medical problems, typically using aircraft portable oxygen bottles or other oxygen supplying equipment, as applicable for the type of aircraft.

CAB 3.4.14 If the Operator conducts passenger flights with cabin crew, the Operator shall have a policy that addresses the acceptance of passengers that have the potential need for supplementary oxygen, and, if such passengers are accepted, cabin crew procedures for the administration of supplementary oxygen. **(GM)**

Guidance

If an operator accepts passengers with a pre-existing medical condition that requires the potential need for oxygen, it would be necessary to have a process that permits arranging for and boarding an adequate oxygen supply prior to a flight. Additionally, procedures would be required to ensure the proper administration of such oxygen by cabin crew members when needed.

In some circumstances, if approved by the operator and the applicable authority, passengers may be allowed to carry aboard and utilize their own oxygen equipment.

If an operator does not accept passengers who have the need for supplementary oxygen, a policy would be necessary that specifies the prohibition in order to ensure awareness among all applicable personnel.

4 Cabin Systems and Equipment

4.1 Preflight Inspection

CAB 4.1.1 If the Operator conducts passenger flights with cabin crew, the Operator shall have a process to ensure the availability, accessibility and serviceability of aircraft cabin emergency systems and equipment for passenger flights. Such process shall include a preflight inspection of systems and equipment, which, as a minimum, shall be conducted by the flight crew or cabin crew prior to the first flight:

- i) After a new cabin crew has assumed control of the aircraft cabin;
- ii) After an aircraft has been left unattended by a flight crew or cabin crew for any period of time. **(GM)**

Guidance

An operator typically has published guidance to ensure cabin crews take appropriate action to address a condition where equipment is discovered as missing or does not satisfy operational requirements. Such guidance normally ensures the captain is notified prior to departure of the flight and maintenance personnel are also notified, as applicable.

Discrepancies involving cabin systems and equipment are typically documented in a cabin log book or equivalent recording medium.

CAB 4.1.2 If the Operator conducts passenger flights with cabin crew, the Operator shall have a process that permits the cabin crew to report the existence of malfunctioning aircraft equipment prior to and after the completion of a flight.

4.2 Systems and Equipment Requirements

CAB 4.2.1 If the Operator conducts passenger flights with or without cabin crew, the Operator shall ensure all passenger aircraft in its fleet are equipped with one or more first aid kits that are distributed as evenly as practicable throughout the passenger cabin(s) and are readily accessible for use by crew members. **(GM)**

Guidance

Refer to the IRM for the definition of *Passenger Aircraft*.

The minimum number of first aid kits required for passenger aircraft is determined by the Authority, and is typically based on the number of passengers the aircraft is authorized to carry. The following list provides the typical minimum numbers of first aid kits based on aircraft passenger seats:

- One kit for aircraft with 100 or fewer passenger seats;
- Two kits for aircraft with 101 to 200 passenger seats;
- Three kits for aircraft with 201 to 300 passenger seats;
- Four kits for aircraft with 301 to 400 passenger seats;
- Five kits for aircraft with 401 to 500 passenger seats;
- Six kits for aircraft with 501 and more passenger seats.

The contents of an aircraft first aid kit would typically include:

- List of kit contents;
- Antiseptic swabs (10/packs);
- Bandage, adhesive strips;
- Bandage, gauze 7.5 cm × 4.5 m;
- Bandage, triangular 100 cm folded and safety pins;

- Dressing, burn 10 cm × 10 cm;
- Dressing, compress, sterile 7.5 cm × 12 cm approx.;
- Dressing, gauze, sterile 10.4 cm × 10.4 cm approx.;
- Adhesive tape, 2.5 cm (roll);
- Skin closure strips;
- Hand cleanser or cleansing towelettes;
- Pad with shield or tape for eye;
- Scissors, 10 cm (if permitted by applicable regulations);
- Adhesive tape, surgical 1.2 cm × 4.6 m;
- Tweezers, splinter;
- Disposable gloves (several pairs);
- Thermometers (non-mercury);
- Resuscitation mask with one-way valve;
- First aid manual (an operator may decide to have one manual per aircraft in an easily accessible location);
- Incident record form.

The medications contained in first-aid kits would typically include, if permitted by applicable regulations:

- Mild to moderate analgesic;
- Antiemetic;
- Nasal decongestant;
- Antacid;
- Antihistaminic;
- Antidiarrhoeal.

CAB 4.2.2 If the Operator conducts passenger flights with cabin crew, and utilizes aircraft with more than 100 passenger seats on flight sector lengths of more than two hours, the Operator *should* ensure all such passenger aircraft in its fleet are equipped with a minimum of one medical kit, stored in a secure location, for use by medical doctors or individuals with appropriate qualifications or training. **(GM)**

Guidance

The equipment contents of an aircraft medical kit would typically include:

- List of contents;
- Stethoscope;
- Sphygmomanometer (electronic preferred)
- Airways, oropharyngeal (appropriate range of sizes);
- Syringes (appropriate range of sizes);
- Needles (appropriate range of sizes);
- Intravenous catheters (appropriate range of sizes);
- Antiseptic wipes;
- Gloves (disposable);
- Sharps disposal box;

- Urinary catheter;
- System for delivering intravenous fluids;
- Venous tourniquet;
- Sponge gauze;
- Tape adhesive;
- Surgical mask;
- Emergency tracheal catheter (or large gauge intravenous cannula);
- Umbilical cord clamp;
- Thermometers (non-mercury);
- Basic or advanced life support cards;
- Bag-valve mask;
- Torch (flashlight) and batteries (operator may choose to have one per aircraft in an easily accessible location);

The carriage of AEDs would be determined by an operator on the basis of a risk assessment, taking account the particular nature of the operation

The drug contents of an aircraft medical kit would typically include:

- Epinephrine 1:1000;
- Antihistaminic injectable (inj);
- Dextrose 50% inj. 50 ml (or equivalent);
- Nitro-glycerine tablet or spray;
- Major analgesic;
- Sedative anticonvulsant inj.;
- Antiemetic inj.;
- Bronchial dilator inhaler;
- Atropine inj.;
- Adrenocortical steroid inj.;
- Diuretic inj.;
- Medication for postpartum bleeding;
- Sodium chloride 0.9% (minimum 250 ml);
- Acetyl salicylic acid (aspirin) for oral use;
- Oral beta blocker;

If a cardiac monitor is available, (with or without an AED), the following would normally be added to the above list:

- Epinephrine 1:10000 (can be a dilution of epinephrine 1:1000);
- Advanced life support cards, if not already included.

CAB 4.2.3 If the Operator conducts passenger flights with cabin crew, the Operator *should* ensure all passenger aircraft in its fleet are equipped with one or more universal precaution kits for use by cabin crew members in managing:

- i) Episodes of ill health associated with a case of suspected communicable disease;
- ii) Cases of illness involving contact with body fluids. **(GM)**

Guidance

One or two universal precaution kits per aircraft would typically be adequate for normal operations; additional kits would be carried at times of increased public health risk (e.g. an outbreak of a serious communicable disease with pandemic potential).

The contents of an aircraft universal precaution kit would typically include:

- Dry powder that can convert small liquid spill into a granulated gel;
- Germicidal disinfectant for surface cleaning;
- Skin wipes;
- Face/eye mask (separate or combined);
- Gloves (disposable);
- Protective apron;
- Large absorbent towel;
- Pick-up scoop with scraper;
- Bio-hazard disposal waste bag;
- Instructions.

CAB 4.2.4 (Intentionally open)

CAB 4.2.5 If the Operator conducts passenger flights with or without cabin crew, the Operator shall ensure all passenger aircraft in its fleet are equipped with hand-held fire extinguishers uniformly distributed throughout the passenger cabin (when two or more extinguishers are required), readily accessible at each galley not located on a main passenger deck, and, if applicable, in each cargo compartment that is accessible to the crew. Fire extinguishers shall be of a type that will minimize the hazard of toxic gas concentration within the aircraft and, as a minimum, one fire extinguisher shall contain Halon 1211 or an equivalent agent. **(GM)**

Guidance

The requirements for hand-held fire extinguishers in this provision are applicable only to areas of the aircraft other than the flight deck. Specific requirements for the flight deck are contained in ISM Section 2 (FLT).

The minimum number of hand-held fire extinguishers required for passenger aircraft is determined by the Authority, and is typically based on the number of passengers the aircraft is authorized to carry. The following list provides the typical minimum numbers of hand-held fire extinguishers based on aircraft passenger seats:

- One extinguisher for aircraft with 6 to 30 passenger seats;
- Two extinguishers for aircraft with 31 to 60 passenger seats;
- Three extinguishers for aircraft with 61 to 200 passenger seats;
- Four extinguishers for aircraft with 201 to 300 passenger seats;
- Five extinguishers for aircraft with 301 to 400 passenger seats;
- Six extinguishers for aircraft with 401 to 500 passenger seats;
- Seven extinguishers for aircraft with 501 to 600 passenger seats;
- Eight extinguishers for aircraft with 601 to 700 passenger seats;
- Nine extinguishers for aircraft with 701 to 800 passenger seats;
- Ten extinguishers for aircraft with more than 800 passenger seats. **(GM)**

CAB 4.2.6 If the Operator conducts passenger flights with or without cabin crew, the Operator shall ensure all unpressurized passenger aircraft in its fleet with a maximum certificated takeoff mass exceeding 5,700 kg (12,566 lb) or having more than 19 passenger seats, as well as all pressurized passenger aircraft in its fleet, are equipped with a portable unit of protective breathing equipment (PBE) installed adjacent to each hand-held fire extinguisher as specified in **CAB 4.2.5**, except:

- i) In the passenger cabin, near each hand-held fire extinguisher or adjacent to each required cabin crew station, whichever is fewer;
- ii) Where a hand-held fire extinguisher is located in a cargo compartment, installed outside but adjacent to that cargo compartment. **(GM)**

Guidance

Refer to the IRM for the definition of *Cabin Crew Station* and *Protective Breathing Equipment (PBE)*.

PBE specifications for the flight crew are contained in **FLT 4.3.6** in ISM Section 2 (FLT).

PBE units would typically be installed within approximately one meter (three feet) of each hand-held fire extinguisher.

Portable PBE units are designed to provide breathing gas for 15 minutes at a pressure altitude of 8,000 feet.

CAB 4.2.7 If the Operator conducts over-water passenger flights with or without cabin crew, the Operator shall ensure all passenger aircraft in its fleet utilized for such flights are equipped with a minimum of one life jacket or equivalent individual flotation device for each person on board, with each life jacket or flotation device stowed for easy accessibility from individual seating positions. **(GM)**

Guidance

Refer to the IRM for the definition of *Over-water Flights*.

Seat cushions that are designed to float are considered individual flotation devices.

State regulations might permit baby survival cots or infant life jackets to be stowed together in one or more common locations (e.g. in a bustle or doghouse). Under such circumstances, an operator would typically have procedures to ensure such items are handed to the parents of infants when required.

CAB 4.2.8 If the Operator conducts long-range over-water passenger flights with or without cabin crew, the Operator shall ensure all passenger aircraft in its fleet utilized for such flights are equipped with a minimum of one life jacket for each person on board. **(GM)**

Guidance

Refer to the IRM for the definition of *Long-range Over-water Flights*.

CAB 4.2.9 If the Operator conducts long-range over-water passenger flights with or without cabin crew, the Operator shall ensure life jackets or individual flotation devices onboard all aircraft in its fleet utilized for such flights in accordance with **CAB 4.2.7** and **CAB 4.2.8** have a means for electric illumination, except electric illumination is not required where the requirement of **CAB 4.2.7** is fulfilled by individual flotation devices *other than life jackets* on aircraft that only operate over-water flights when taking off or landing at an airport where the takeoff or approach path is so disposed over water that in the event of a mishap there would be a likelihood of a ditching. **(GM)**

Guidance

Flotation devices other than life jackets (e.g., seat cushions), when used in lieu of life jackets on aircraft that operate over-water flights at a distance of more than 93 km (50 nm) away from the shore, would be subject to the requirement for electric illumination.

CAB 4.2.10 If the Operator conducts long-range over-water passenger flights with or without cabin crew, the Operator shall ensure all aircraft in its fleet utilized for such flights are equipped with life saving rafts with sufficient capacity to accommodate all persons on board, with each raft stowed in a manner to facilitate ready use during a ditching emergency. Life saving rafts shall contain:

- i) Life-sustaining equipment as appropriate to the flight to be undertaken;
- ii) Equipment for making pyrotechnical distress signals.

CAB 4.2.11 If the Operator conducts passenger flights with or without cabin crew, the Operator shall ensure all passenger aircraft in its fleet with more than 9 passenger seats for which the individual certificate of airworthiness was first issued after 1 January 1958 are equipped with a cabin emergency escape path lighting system. **(GM)**

Guidance

Refer to the IRM for the definitions of *Emergency Escape Path Lighting System* and *Emergency Lighting System*.

CAB 4.2.12 If the Operator conducts passenger flights with cabin crew, the Operator shall ensure all passenger aircraft in its fleet are equipped with a flashlight (torch) at each required cabin crew station. **(GM)**

Guidance

If the operator requires individual cabin crew members to carry flashlights, to ensure compliance, a process could be in place that verifies such carriage, ensures flashlights are in working order and defines the location(s) for stowage during flight.

CAB 4.2.13 If the Operator conducts passenger flights with or without cabin crew, the Operator shall ensure all passenger aircraft in its fleet are equipped with a seat (or berth) for each person over a specific age as determined by the State, with each seat (or berth) fitted with a seat or restraining belt.

CAB 4.2.14 If the Operator conducts passenger flights with cabin crew, the Operator shall ensure all passenger aircraft in its fleet are equipped with forward or rearward facing seats at each emergency evacuation station for use by cabin crew members as specified in **CAB 3.1.1..** Such seats shall be located near floor level exits and fitted with a safety harness. **(GM)**

Guidance

The safety harness consists of the seat belt and shoulder straps.

Aircraft are equipped with the specified seats to accommodate the required minimum number of cabin crew members at the emergency evacuation stations.

Under certain circumstances, additional cabin crew members (above the required minimum number) may sit in passenger seats (with lap belts only) provided qualified cabin crew members occupy all seats at the emergency evacuation stations.

CAB 4.2.15 If the Operator conducts passenger flights with cabin crew, and utilizes pressurized passenger aircraft at flight altitudes above 10,000 feet, the Operator shall ensure all such aircraft in its fleet are equipped with oxygen storage and dispensing apparatus that can be used by cabin crew members when administering supplemental oxygen.

CAB 4.2.16 If the Operator conducts passenger flights with or without cabin crew, the Operator shall ensure all passenger aircraft in its fleet are provisioned with a safety information card accessible to each passenger, which contains appropriate information, instructions, restrictions or locations relevant to:

- i) Seat belts;

- ii) Emergency exits;
- iii) Life jackets (personal flotation devices), if required;
- iv) Passenger oxygen masks;
- v) Smoking restrictions.

CAB 4.2.17 If the Operator conducts passenger flights with cabin crew, the Operator shall ensure all passenger aircraft in its fleet are equipped with portable battery-operated megaphones, stowed in a manner to be readily accessible for use by crew members during an emergency. Aircraft shall be equipped with:

- i) One megaphone for aircraft with 60 to 100 passenger seats;
- ii) Two megaphones for aircraft with more than 100 passenger seats. **(GM)**

Guidance

If located in overhead bins or other cabin compartments, megaphones, in order to be readily accessible, would be kept free from and/or not covered by cabin baggage, cabin supplies or other items.

CAB 4.2.18 If the Operator conducts passenger flights with or without cabin crew, and conducts flights across land areas that have been designated by the state(s) concerned as areas in which search and rescue would be especially difficult, the Operator shall ensure all passenger aircraft in its fleet utilized for such flights are equipped with signaling devices and life-saving equipment (including, means of sustaining life) in accordance with requirements of the applicable state(s). **(GM)**

Guidance

An Emergency Locator Transmitter (ELT) is considered an appropriate signaling device.

CAB 4.2.19 – 4.2.22 (Intentionally open)

CAB 4.2.23 If the Operator conducts passenger flights with or without cabin crew, the Operator shall ensure lavatories on all passenger aircraft in its fleet are equipped with a smoke detection system and a built-in fire extinguisher for each lavatory receptacle intended for the disposal of towels, paper or waste. Such equipage of lavatories shall be applicable to **either**:

- i) Aircraft over 5,700 kg (12,566 lb) for which application for certification was submitted on or after 2 March 2004; **or**
- ii) Aircraft in accordance with requirements of the State only if such requirements specify applicability based on a minimum aircraft gross weight and/or passenger capacity. **(GM)**

(Note: Item ii) is a Parallel Conformity Option effective until 30 June 2015.)

Guidance

Refer to the IRM for the definition of *Lavatory*.

An acceptable smoke detector system for lavatories would provide a warning light on the flight deck or provides a warning light (or audio warning) in the passenger cabin that would be readily detected by the cabin crew, taking into consideration the positioning of cabin crew members throughout the passenger compartment during various phases of flight.

Table 5.1 – Operations Manual Content Specifications

The content of the Operations Manual shall address the following areas of cabin operations:

- i) Compliance or conformity with:
 - a) Applicable laws, regulations and rules;
 - b) Standard operating procedures for each phase of flight.
- ii) Administration of first aid, to include guidelines for:
 - a) Life threatening medical emergencies;
 - b) Cardiopulmonary resuscitation (CPR);
 - c) Injuries and illnesses;
 - d) Use of Automatic External Defibrillator (AED), if applicable.
- iii) Response to abnormal and emergency situations:
 - a) Aircraft emergency evacuation;
 - b) Cabin decompression, if applicable;
 - c) Onboard smoke and fire;
 - d) Emergency landing;
 - e) Leakage or spillage of suspected dangerous goods;
 - f) Suspected bomb or explosives;
 - g) Hijacking or unlawful intervention.
- iv) Use of cabin systems and equipment, to include malfunctions:
 - a) Oxygen systems, if applicable;
 - b) Communication systems;
 - c) Entry and exit doors;
 - d) Lifesaving equipment;
- v) Dangerous goods manual or parts relevant to the cabin crew, to include:
 - a) Dangerous goods prohibited in passenger and crew baggage;
 - b) Information/instructions for dangerous goods permitted in passenger and crew baggage;
 - c) Action to be taken in the event of an emergency.
- vi) Response to suspected cabin security situations:
 - a) Least risk bomb locations specific to aircraft type;
 - b) Cabin search.
- vii) Use of survival equipment
- viii) Cabin crew training program
 - a) Abnormal and emergency situations, emergency evacuation;
 - b) Use of emergency and lifesaving equipment;
 - c) Lack of oxygen, loss of pressurization (as applicable);
 - d) Other cabin crew member assignments and functions;
 - e) Dangerous goods;
 - f) Human performance.
- ix) Limitations pertaining to flight time, flight duty periods and rest periods.



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SECTION 6 – GROUND HANDLING OPERATIONS (GRH)

Applicability

Section 6 addresses functions within the scope of ground handling operations and is applicable to an operator that conducts passenger, cargo and/or combi (combined cargo and passenger) aircraft operations.

Individual provisions or sub-specifications within a provision that:

- Begin with a conditional phrase (“If the Operator...”) are applicable if the operator meets the condition(s) stated in the phrase.
- Do not begin with a conditional phrase are applicable unless determined otherwise by the Auditor.

Functions within the scope of ground handling operations include:

- Passenger handling;
- Baggage handling;
- Aircraft handling and loading;
- Load control
- Aircraft fueling;
- Aircraft de-/anti-icing.

In this section, non-revenue cargo and mail are addressed in the same way as revenue cargo for the purposes of handling, loading, securing and transporting. COMAT is non-revenue cargo.

Where an operator outsources the performance of functions within the scope of ground handling operations to external service providers, the operator retains overall responsibility for such functions, and must demonstrate processes for monitoring the applicable external service providers in accordance with GRH 1.10.2.

Security specifications applicable to functions within the scope of ground handling operations are located in Section 8 of this manual.

General Guidance

Definitions of technical terms used in this ISM Section 6, as well as the meaning of abbreviations and acronyms, are found in the IATA Reference Manual for Audit Programs (IRM).

1 Management and Control

1.1 Management System

GRH 1.1.1 The Operator shall have a management system that ensures control of ground handling operations and the management of safety and security outcomes. (GM) ◀

Guidance

Refer to the IRM for the definitions of *Ground Handling, Operations* and *Operator*.

Refer to Guidance associated with ORG 1.1.1 located in ISM Section 1.

GRH 1.1.2 The Operator shall have a manager for ground handling operations that:

- i) Has the authority and is responsible for the management and supervision of functions and activities within the scope of ground handling operations;

- ii) Is accountable to senior management for ensuring the safety and security of ground handling operations. ◀

1.2 Authorities and Responsibilities

GRH 1.2.1 The Operator shall ensure the management system defines the authorities and responsibilities of management and non-management personnel that perform functions relevant to the safety or security of ground handling operations. The management system shall also specify:

- i) The levels of management with the authority to make decisions that affect the safety and/or security of ground handling operations;
- ii) Responsibilities for ensuring ground handling operations are conducted in accordance with applicable regulations and standards of the Operator. (GM) ◀

Guidance

Refer to Guidance associated with ORG 1.3.1 located in ISM Section 1.

GRH 1.2.2 The Operator shall have a process for the delegation of duties within the management system for ground handling operations that ensures managerial continuity is maintained when operational managers are absent from the workplace. (GM) ◀

Guidance

Refer to Guidance associated with ORG 1.3.2 located in ISM Section 1.

1.3 Communication

GRH 1.3.1 The Operator shall have a communication system that enables an effective exchange of information relevant to the conduct of ground handling operations throughout the management system for ground handling operations and among operational personnel. (GM) ◀

Guidance

Refer to Guidance associated with ORG 1.4.1 located in ISM Section 1.

Specific means of communication between management and operational ground handling personnel might include:

- Email, Internet;
- Safety or operational reporting system;
- Communiqués (letters, memos, bulletins);
- Publications (newsletters, magazines).

If email is used as an official medium for communication operational personnel, the process is typically formalized by the operator to ensure control and effectiveness.

1.4 Provision of Resources

GRH 1.4.1 The Operator shall ensure the existence of the necessary facilities, workspace, equipment and supporting services, as well as work environment, to satisfy ground handling operational safety and security requirements. (GM) ◀

Guidance

Conformity with GRH 1.4.1 does not require specifications to be *documented* by an operator.

Refer to Guidance associated with ORG 1.6.1 located in ISM Section 1.

GRH 1.4.2 The Operator shall ensure operational positions within the scope of ground handling operations are filled by personnel on the basis of knowledge, skills, training and experience appropriate for the position. (GM) ◀

Guidance

Refer to Guidance associated with ORG 1.6.2 located in ISM Section 1.

To ensure the inclusion of all ground handling operations, an operator would typically have a process that ensures specifications in this provision are applied to external ground handling service providers.

A corporate personnel selection policy that applies to all operational areas of the company serves to satisfy specifications in this provision.

1.5 Documentation System

GRH 1.5.1 The Operator shall have a system for the management and control of documentation and/or data used directly in the conduct or support of ground handling operations, to include:

- i) A means of identifying the version of operational documents;
- ii) A distribution process that ensures availability of the current version of the Operations Manual to appropriate personnel in all areas where ground handling operations are conducted;
- iii) Review and revision as necessary to maintain the currency of information contained in documents;
- iv) A means of document retention that permits easy reference and accessibility;
- v) Identification and control of obsolete and/or reproduced documents;
- vi) Reception of documentation and/or data from external sources to ensure information is received in time to satisfy operational requirements;
- vii) Retention and dissemination of documentation received from external sources. (GM) ◀

Guidance

If an operator outsources operational functions within the scope of ground handling operations, the distribution process for the Operations Manual as specified in ii) would include external service providers.

An operator might utilize the documents and/or data of another operator (usually a parent or subsidiary) in the conduct or support of its own ground operations. In such cases, in order to maintain the currency of information contained in documents (and/or data) as specified in iii), an operator would typically have a process to provide operational input to the operator that produces the documents (and/or data) that are utilized in ground handling operations.

Refer to Guidance associated with ORG 2.1.1 located in ISM Section 1.

GRH 1.5.2 If the Operator utilizes an electronic system for the management and control of any documentation used directly in the conduct of ground handling operations, the Operator shall ensure the system provides for a scheduled generation of back-up files for such documents. (GM) ◀

Guidance

Refer to Guidance associated with ORG 2.1.2 located in ISM Section 1.

GRH 1.5.3 The Operator shall ensure documentation used in the conduct or support of ground handling operations:

- i) Contains legible and accurate information;
- ii) Is presented in a format that is appropriate for use by ground handling personnel;
- iii) If applicable, is accepted or approved by the Authority. ◀

1.6 Operational Manuals

GRH 1.6.1 The Operator shall have an Operations Manual, which may be issued in separate parts, that contains the operational policies, processes, procedures and other information necessary for ground handling personnel to perform their duties and be in compliance with applicable regulations, laws, rules and standards of the Operator. (GM)

Guidance

An operations manual typically includes guidance that addresses areas generic to all functions within the scope of ground handling operations, as well as parts of the manual that are specific to individual operational functions.

Because the scope of ground handling operations is broad and varies by operator, rather than publishing one OM just for ground handling, a smaller operator might choose to incorporate the relevant information into a larger, comprehensive OM.

An operator could also choose to issue the information in separate documents that are each specific to the various ground handling operational functions (e.g. passenger handling, baggage handling, aircraft handling). Each individual document would typically contain generic guidance that is applicable to all ground handling operational functions (e.g., organizational policies, general definitions), as well as guidance that is specific to the particular ground handling function or office location (e.g., process descriptions, standard operating procedures, references to the appropriate regulations and IATA manuals).

If an operator has external organizations conduct ground handling operations functions, such operator would then be expected to have a monitoring and control process to ensure each external organization either uses the OM of the operator or has its own published OM that fulfills operational safety, security and quality requirements of the operator.

GRH 1.6.2 The Operator shall ensure the current edition of the Operations Manual is available in a usable format at each location where ground handling operations are conducted. (GM)

Guidance

To achieve system-wide standardization, an operator would normally have a control process that ensures external service providers have operationally relevant parts of the OM available at applicable locations.

GRH 1.6.3 If the Operator transports dangerous goods as cargo, the Operator shall ensure a current edition of the IATA Dangerous Goods Regulations (DGR), the ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air (Technical Instructions), or equivalent documentation is accessible at each location where ground handling operations involving the acceptance or loading of dangerous goods as cargo are conducted. (GM)

Guidance

Most dangerous goods are typically transported as cargo. However, certain types of dangerous goods are permitted for transport in passenger or crew baggage if approved by the operator. The specifications in this provision are applicable to an operator that transports dangerous goods as cargo.

Acceptable equivalent documentation would typically contain information derived from the DGR or Technical Instructions, as well as the dangerous goods policies and procedures specific to the type(s) of operations being conducted at the location.

GRH 1.6.4 If the Operator transports dangerous goods as cargo, the Operator shall ensure the OM or an equivalent operational manual contains information that will permit ground handling personnel to carry out duties and responsibilities with respect to dangerous goods. Such information shall include, as a minimum:

- i) Action to be taken in the event of emergencies involving dangerous goods;

- ii) Details of the location and identification of cargo holds;
- iii) The maximum quantity of dry ice permitted in each compartment;
- iv) If radioactive material is transported, instructions for the loading of such dangerous goods in accordance with applicable requirements. (GM)

Guidance

Guidance may be found in DGR 9.5.

GRH1.6.5 If the Operator does *not* transport dangerous goods, the Operator shall ensure the OM contains the policies and associated guidance necessary to prevent dangerous goods from being inadvertently carried or loaded onto the aircraft. (GM)

Guidance

For a dangerous goods “no-carry” operator, guidance in the OM typically addresses vigilance with respect to hidden or inconspicuous dangerous goods, and includes an indicative list of items that could contain dangerous goods.

GRH 1.6.6 If the Operator conducts passenger flights, the Operator shall ensure a current edition of the IATA Dangerous Goods Regulations (DGR), the ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air (Technical Instructions), or equivalent documentation is accessible at locations where passenger check-in and/or boarding operations are conducted. (GM)

Guidance

Most dangerous goods are typically transported as cargo. However, certain types of dangerous goods are permitted for transport in passenger or crew baggage if approved by the operator.

Acceptable equivalent documentation would typically contain information derived from the DGR or Technical Instructions, as well as the dangerous goods policies and procedures specific to the type(s) of operations being conducted at the location. For example, at the passenger check-in and aircraft boarding areas, appropriate company documentation might describe dangerous goods permitted in passenger and crew baggage. Documentation may also include actions required by passenger agents with respect to items specifically not permitted in passenger baggage, and contain examples of dangerous goods hazard labels and procedures for addressing spills and/or leaks of unidentified substances.

Refer to DGR 2.3, which addresses dangerous goods associated with checked and cabin baggage.

To ensure system-wide standardization, an operator would normally have a control process to ensure external service providers have the DGR or equivalent documentation available at applicable locations.

GRH 1.6.7 If the Operator conducts passenger flights, the Operator shall ensure the OM or an equivalent operational manual contains information that will permit ground handling personnel to carry out duties and responsibilities with respect to dangerous goods. As a minimum, such information shall include procedures for passenger handling personnel to alert passengers that certain items of dangerous goods:

- i) Are specifically prohibited in hold baggage (e.g. spare lithium batteries);
- ii) Must be removed from cabin baggage when cabin baggage cannot be accommodated in the passenger cabin.

GRH 1.6.8 If the Operator conducts passenger flights, the Operator *should* ensure the OM or an equivalent operational manual contains information with respect to dangerous goods permitted in passenger and crew baggage. (GM)

Guidance

Certain items of dangerous goods are permitted in passenger or crew baggage if approved by the operator. Information contained in the operations manual (or equivalent) should address the following:

- Approval process
It is recommended that a single company policy be set out that identifies the items that have been approved and the person(s) or department(s) responsible for determining how dangerous goods in passenger baggage may be approved.
- Communication
It is recommended that the operator define how approvals for dangerous goods requiring operator approval are communicated to the airport(s) of departure. It is recommended that operators consider a process where such approval is included in the passenger electronic record.
- Limitations.
The operator manuals should specify any limitations or procedural requirements that may apply to particular commodities (e.g. inspection at check-in by passenger service agents and/or security).
- Codeshare
Where the operator has interline agreements with code share and/or alliance partners the operator should identify what the procedure is for obtaining the approval of the other airline(s) involved (e.g. by advising the passenger that they must obtain approval from the other operator).
- Awareness
The operator should ensure that all staff who have an interaction with passengers, (i.e. reservations agents, passenger service agents, cabin crew and flight crew) are made aware of the process employed to ensure that the operator approval process remains effective.

1.7 Records System

GRH 1.7.1 The Operator shall have a system for the management and control of ground handling records to ensure the content and retention of such records is in accordance with requirements of the Authority, as applicable, and to ensure operational records are subjected to standardized processes for:

- i) Identification;
- ii) Legibility;
- iii) Maintenance;
- iv) Retrieval;
- v) Protection and security;
- vi) Disposal or deletion (electronic records). ◀

Guidance

Refer to Guidance associated with ORG 2.2.1 located in ISM Section 1.

GRH 1.7.2 If the Operator utilizes an electronic system for the management and control of operational ground handling records, the Operator shall ensure the system provides for a scheduled generation of back-up record files. (GM) ◀

Guidance

Refer to Guidance associated with ORG 2.2.2 located in ISM Section 1.

1.8 (Intentionally open)

1.9 Quality Assurance Program

GRH 1.9.1 The Operator shall have a quality assurance program that provides for the auditing and evaluation of the management system and operational functions within the scope of ground handling operations at planned intervals to ensure the Operator is:

- i) Complying with applicable regulations and standards of the Operator;
- ii) Satisfying stated operational needs;
- iii) Identifying undesirable conditions and areas requiring improvement;
- iv) Identifying hazards to operations. [SMS] (GM) ◀

Guidance

Refer to the IRM for the definition of *Quality Assurance*.

Refer to Guidance associated with ORG 3.4.1 located in ISM Section 1 for typical audit program requirements.

Ideally, the specifications of this provision would also apply to external service providers that conduct outsourced operational functions.

A corporate quality assurance program that is applied to all operational areas of the company, including all functions within the scope of ground handling operations, satisfies this requirement.

Refer to the IATA Airport Handling Manual (AHM) 60 and 612, which contain guidance that addresses auditing of ground handling functions.

GRH 1.9.2 The Operator shall have a process for addressing findings resulting from audits of functions within ground handling operations, which ensures:

- i) Identification of root cause;
- ii) Development of corrective action, as appropriate, to address finding(s);
- iii) Implementation of corrective action in appropriate operational areas;
- iv) Evaluation of corrective action to determine effectiveness. ◀

GRH 1.9.3 The Operator shall have a process to ensure significant issues arising from audits of functions within the scope of ground handling operations are subject to management review in accordance with ORG 1.5.1 and, as applicable, ORG 1.5.2. [SMS] (GM) ◀

Guidance

Refer to Guidance associated with ORG 3.4.4 located in ISM Section 1.

1.10 Outsourcing and Product Quality Control

GRH 1.10.1 If the Operator has external service providers conduct outsourced operational functions within the scope of ground handling operations, the Operator shall have a process to ensure a contract or agreement is executed with such external service providers. Contracts or agreements shall identify measurable specifications that can be monitored by the Operator to ensure requirements that affect the safety and/or security of ground handling operations are being fulfilled by the service provider. (GM) ◀

Guidance

Refer to Guidance associated with ORG 3.5.1 located in ISM Section 1.

The requirement for a contract or agreement applies to outsourced functions within the scope of ground handling operations that affect the safety and security of operations, including special functions such as aircraft fueling and de-/anti-icing.

If a ground handling function is expected to be accomplished in accordance with specific industry standards, the agreement identifies and specifies the standards by exact name (e.g., aircraft fuel shall be delivered in accordance with the published standards of the IATA Fuel Quality Pool).

The AHM contains detailed guidance and examples of a standard ground handling agreement and a service level agreement. Additionally, IATA publishes a standard contract for the delivery of aircraft fuel.

GRH 1.10.2 If the Operator has external service providers conduct outsourced operational functions within the scope of ground handling operations, the Operator shall have processes to monitor such external service providers to ensure ground handling safety and security requirements are being fulfilled. (GM) ◀

Guidance

Refer to Guidance associated with ORG 3.5.2 located in ISM Section 1.

An external service provider that is on the ISAGO (IATA Safety Audit of Ground Operations) Registry for a particular station indicates such provider has been audited and is in conformity with ISAGO standards. The use of the ISAGO program is an acceptable method for some of the monitoring process for an external ground handling provider at a given station.

GRH 1.10.3 If the Operator has external service providers conduct outsourced operational functions within the scope of ground handling operations, the Operator *should* include auditing as a process for the monitoring of external service providers in accordance with GRH 1.10.2. ◀

GRH 1.10.4 The Operator *should* have a process to ensure products purchased or otherwise acquired from an external vendor or supplier, which directly affect operational safety or security, meet the product technical requirements specified by the Operator prior to being used in the conduct of ground handling operations. (GM) ◀

Guidance

Refer to Guidance associated with ORG 3.6.1 located in ISM Section 1.

1.11 Safety Management

Risk Management

GRH 1.11.1 The Operator *should* have processes implemented in the ground handling operations organization that include a combination of reactive and proactive methods for safety data collection and analysis to identify hazards that present existing or potential risks to aircraft operations. [SMS] (GM) ◀

Guidance

Refer to the IRM for the definitions of *Hazard (Aircraft Operations)* and *Safety Risk*.

Hazard identification is an element of the Safety Risk Management component of the SMS framework.

Refer to Guidance associated with ORG 3.1.1 located in ISM Section 1.

GRH 1.11.2 The Operator *should* have a safety risk assessment and mitigation program implemented in the ground handling operations organization that specifies processes to ensure:

- i) Hazards are analyzed to determine the existing and potential safety risks to aircraft operations;
- ii) Safety risks are assessed to determine the requirement for risk control action(s);

- iii) When required, risk mitigation actions are developed and implemented in ground handling operations. [SMS] (GM) ◀

Guidance

Risk assessment and mitigation is an element of the Safety Risk Management component of the SMS framework.

Refer to Guidance associated with ORG 3.1.2 located in ISM Section 1.

Operational Reporting

GRH 1.11.3 The Operator shall have an operational reporting system implemented in the ground handling operations organization that:

- i) Encourages and facilitates ground operations personnel to submit reports that identify safety hazards, expose safety deficiencies and raise safety concerns;
- ii) Includes analysis and ground operations management action to address operational deficiencies, hazards, incidents and concerns identified through the reporting system. [SMS] (GM) ◀

Guidance

Operational reporting is considered a *proactive* hazard identification activity in an SMS.

Refer to Guidance associated with ORG 3.1.3 located in ISM Section 1.

GRH 1.11.4 The Operator *should* have a confidential safety reporting system implemented within the ground handling operations organization in a manner that encourages and facilitates the reporting of events, hazards and/or concerns resulting from or associated with human performance in operations. [SMS] (GM) ◀

Guidance

A confidential safety reporting system is considered a *proactive* hazard identification activity in an SMS.

Refer to Guidance associated with ORG 3.1.4 located in ISM Section 1.

Safety Performance Monitoring and Management

GRH 1.11.5 The Operator *should* have processes implemented in the ground handling operations organization for setting performance measures as a means to monitor the safety performance of the organization and to validate the effectiveness of risk controls. [SMS] (GM) ◀

Guidance

Refer to the IRM for the definition of *Safety Assurance*.

Setting measurable safety objectives is included in the safety performance monitoring and measurement element of the Safety Assurance component of the SMS framework.

By setting performance measures, an operator is able to track and compare its operational performance against a target (i.e. the performance objective, typically expressed as a rate or number reduction) over a period of time (e.g. one year). Achievement of the target (or objective) would represent an improvement in the operational performance. The use of performance measures is an effective method to determine if desired safety outcomes are being achieved, and to focus attention on the performance of the organization in managing operational risks and maintaining compliance with relevant regulatory requirements.

Performance measures in ground handling operations might address, for example, different types of aircraft ground damage.

Refer to Guidance associated with ORG 3.2.1 located in ISM Section 1.

2 Training and Qualification

2.1 Training Program

GRH 2.1.1 The Operator shall have a process to ensure personnel who perform operational duties in functions within the scope of ground handling operations for the Operator, to include personnel of external service providers, complete:

- i) *Initial training* prior to being assigned to perform such operational duties;
- ii) *Recurrent training*, except recurrent training in dangerous goods as specified in GRH 2.2.1 or GRH 2.2.2, on a frequency in accordance with requirements of the regulatory authority, but *not less than once during every 36-month period*. (GM)

Guidance

Requirements for initial and recurrent training apply to all operational ground handling personnel who perform duties within the scope of ground handling operations.

GRH 2.1.2 The Operator shall have a process to ensure the content of training completed by ground handling operations personnel in accordance with GRH 2.1.1 is reviewed and updated to remain relevant, and provides the knowledge necessary to perform duties, execute procedures and operate equipment associated with specific ground handling functions and responsibilities, to include:

- i) Familiarization training on applicable regulations;
- ii) In-depth training on requirements, including policies, procedures and operating practices;
- iii) Training in human factors principles;
- iv) Safety training on associated operational hazards. (GM)

Guidance

The AHM contains guidance for the training of ground handling personnel.

Refer to the IRM for the definition of *Human Factors Principles*.

Refer to AHM 590, 591 and DGR 1.5, which address training for personnel that perform load control functions.

Refer to AHM 611, which addresses training for personnel that:

- Perform aircraft handling functions, to include aircraft loading;
- Operate a vehicle in the performance of duties in airside operations.

GRH 2.1.3 The Operator shall have a process to ensure training for personnel who perform operational duties in functions within the scope of ground handling operations for the Operator includes testing or evaluation by written, oral or practical means, as applicable, to satisfy the requirement for operational personnel to demonstrate adequate knowledge, competency or proficiency to perform duties, execute procedures or operate equipment.

GRH 2.1.4 The Operator shall ensure completion of required training by personnel who perform operational duties in functions within the scope of ground handling operations for the Operator is recorded and such records are retained in accordance with GRH 1.7.1.

2.2 Program Elements

GRH 2.2.1 If the Operator transports dangerous goods, the Operator shall have a process to ensure ground handling personnel receive dangerous goods training, to include *initial training* and *recurrent training*, on a frequency in accordance with requirements of the regulatory authority, but *not less than once within 24 months of previous training in dangerous goods*. Such training shall

be completed by personnel that perform operational duties in the following functions within the scope of ground handling operations:

- i) Passenger handling;
- ii) Baggage handling;
- iii) Aircraft loading;
- iv) Load control. (GM)

Guidance

Recurrent training in dangerous goods is completed within a validity period that expires 24 months from the previous training to ensure knowledge is current, unless a shorter period is defined by a competent authority. However, when such recurrent training is completed within the final 3 months of the 24-month validity period, the new validity period may extend from the date on which the recurrent training was completed until 24 months from the expiry date of the current validity period. If such recurrent training is completed *prior* to the final three months of the validity period, the new validity period would extend 24 months from the date the recurrent training was completed.

The curriculum for dangerous goods training for ground handling personnel will vary depending on specific responsibilities and duty function(s), but will typically address:

- General philosophy;
- Limitations;
- List of dangerous goods;
- Labeling and marking;
- Recognition of undeclared dangerous goods;
- Storage and loading procedures;
- Flight crew notification;
- Provisions for passengers and crew;
- Emergency procedures.

Refer to DGR 1.5 (Table 1.5.A, Minimum Requirements for Training Curricula) for detailed guidance that addresses dangerous goods training and subjects applicable to specific ground handling functions.

GRH 2.2.2 If the Operator does *not* transport dangerous goods, the Operator shall have a process to ensure ground handling personnel receive dangerous goods training, to include *initial training* and *recurrent training* on a frequency as specified in GRH 2.2.1. Such training shall be completed by personnel that perform operational duties in the following functions within the scope of ground handling operations:

- i) Passenger handling;
- ii) Baggage handling;
- iii) Aircraft loading;
- iv) Load control. (GM)

Guidance

When an operator does not transport dangerous goods (i.e. a “no-carry” operator), dangerous goods training is still required for ground handling personnel to ensure prohibited dangerous goods are recognized and are not loaded onto an aircraft.

Dangerous goods training would be structured to provide the requisite knowledge to permit ground handling personnel to recognize prohibited dangerous goods (whether labeled or not

labeled), ensure such dangerous goods are not inadvertently loaded on an aircraft and apply emergency action in the event of contamination or a spill. The curriculum for dangerous goods training for ground handling personnel will typically address:

- General philosophy;
- Limitations;
- Labeling and marking;
- Recognition of undeclared dangerous goods;
- Provisions for passengers and crew;
- Emergency procedures.

Refer to DGR 1.5 (Table 1.5.B, Minimum Requirements for Training Curricula for “No-carry” Operators), for detailed guidance that addresses dangerous goods training and subjects applicable to specific ground handling functions.

GRH 2.2.3 The Operator shall have a process to ensure ground handling personnel assigned to perform ground handling duties in airside operations for the Operator, to include the operation of ground support equipment, complete initial and recurrent airside safety training in accordance with GRH 2.1.1. (GM)

Guidance

Refer to AHM 611, which addresses training applicable to airside operations and safety.

GRH 2.2.4 The Operator shall have a process to ensure ground handling personnel assigned to perform aircraft fueling operations for the Operator complete initial and recurrent training in accordance with GRH 2.1.1.

GRH 2.2.5 The Operator shall have a process to ensure personnel assigned to perform aircraft ground de-/anti-icing operations complete initial and recurrent training in accordance with GRH 2.1.1. (GM)

Guidance

Refer to ICAO Doc 9640-AN/940, Chapter 13, which addresses training for personnel that conduct aircraft de-/anti-icing operations.

3 Ground Handling Operations

3.1 Passenger and Baggage Handling

GRH 3.1.1 If the Operator conducts passenger flights, the Operator shall ensure notices are displayed that warn passengers of the type of dangerous goods forbidden for transport aboard an aircraft. Such notices shall include visual examples and be displayed:

- i) Prominently and in sufficient number at each of the places at an airport where passengers are processed;
- ii) Clearly at any other location where passengers are checked in. **(GM)**

Guidance

Notices, sufficient in number, would be prominently displayed at places at an airport where passengers are processed, such as:

- Ticketing areas;
- Check-in areas;
- Boarding areas;
- Baggage claim areas.

Additionally, if passenger ticketing or check-in is accomplished using electronic means, dangerous goods information is presented in the appropriate electronic medium.

Notices may also be displayed in other locations where passengers are checked in, including areas not at an airport.

Guidance may be found in DGR 9.5.

GRH 3.1.2 If the Operator conducts passenger flights, the Operator shall ensure a process is in place that requires, when dangerous goods not permitted for carriage onboard the aircraft are discovered in passenger baggage, a report is made to the appropriate authority of the state of occurrence. **(GM)**

Guidance

Specifications of this provision are applicable to operators that do and do not transport dangerous goods.

Guidance may be found in DGR 2.3 and 9.6.

GRH 3.1.3 If the Operator conducts passenger flights and provides a capability for the passenger check-in process to be completed remotely (e.g. via the Internet), the Operator *should* ensure passengers are provided information that:

- i) Describes the types of dangerous goods that are forbidden for transport aboard an aircraft;
- ii) Is presented in a manner that does not allow completion of the check-in process until the passenger, or a person acting on behalf of the passenger, has acknowledged that they understand the restrictions on dangerous goods in baggage.

Guidance

Information presented to passengers may be in text or pictorial form.

Specifications in this provision become mandatory on 1 January 2013.

Guidance may be found in DGR 9.5.3.

GRH 3.1.4 If the Operator conducts passenger flights and provides a capability for the passenger check-in process to be completed at the airport by the passenger, but without the

involvement of any other person (e.g. automated check-in facility), the Operator *should* ensure passengers are provided information that:

- i) Describes the types of dangerous goods that are forbidden for transport aboard an aircraft;
- ii) Is presented in a manner that does not allow completion of the check-in process until the passenger has acknowledged that they understand the restrictions on dangerous goods in baggage.

Guidance

Information presented to passengers may be in text or pictorial form.

Specifications in this provision become mandatory on 1 January 2013.

Guidance may be found in DGR 9.5.3.

3.2 Airside Operations

GRH 3.2.1 The Operator shall ensure processes are in place that assure responsibility is assigned for the supervision of all airside operational activities.

GRH 3.2.2 The Operator shall ensure safety procedures are implemented during the conduct of all airside operational activities. (GM)

Guidance

Safety procedures typically address:

- The use of internationally recognized marshalling signals for communication among ground personnel for the movement of ground support equipment;
- If applicable, protection of passengers moving between the aircraft and the terminal building where the apron is utilized for passenger embarkation and disembarkation;
- Foreign object damage (FOD) prevention for apron areas that have aircraft parking or movement operations;
- Airside fire safety;
- The spillage of fluids and other materials in airside areas;
- An airside severe weather plan.

Guidance may be found in AHM 630, 631 and 635.

GRH 3.2.3 The Operator shall ensure safety procedures are implemented during arrival and departure aircraft ground movement operations. (GM)

Guidance

Aircraft ground movement safety procedures typically address:

- Signals used between ground personnel and the flight crew;
- Verbal phraseology used between ground personnel and the flight crew;
- Standard operating procedures in accordance with recommendations of the aircraft manufacturer(s) for aircraft pushback, power back, power out and/or tow-out, as applicable, for departure from the parking position, and for aircraft power-in and/or tow-in, as applicable, for arrival into the parking position.

Guidance may be found in AHM 631.

GRH 3.2.4 The Operator shall ensure procedures are in place for an inspection of the aircraft exterior and adjacent airside areas as appropriate prior to aircraft arrival and departure ground movement operations. (GM)

Guidance

Inspection procedures typically ensure:

- Surface condition of the apron is adequate to conduct aircraft movement operations;
- The apron is clear of items that might cause aircraft FOD;
- Aircraft servicing doors and panels are closed and secure (departure);
- Power cables and loading bridge are detached (departure);
- Equipment and vehicles are positioned clear of the aircraft movement path;
- Adequate clearance exists between the aircraft and facilities or fixed obstacles along the aircraft movement path;
- Chocks are removed from all wheels (departure).

Guidance may be found in AHM 631.

GRH 3.2.5 The Operator shall ensure procedures are in place for an inspection of the aircraft immediately prior to departure for the purpose of identifying, documenting and, as applicable, reporting external aircraft damage. (GM)

Guidance

To enhance the possibility of identifying all aircraft ground damage, such inspection typically takes place after most ground handling activities have been completed and at a point just prior to the time aircraft movement will commence for departure.

External damage deemed to have the potential to compromise the airworthiness of an aircraft would be reported to appropriately qualified maintenance personnel for evaluation and action, as appropriate.

GRH 3.2.6 The Operator shall ensure procedures are in place for securing an aircraft prior to overnight or layover parking. (GM)

Guidance

Securing procedures typically ensure aircraft:

- Are searched prior to parking to ensure no persons are onboard;
- Are parked only in secure areas within an airport operating area;
- Are parked under conditions that permit maximum security and protection;
- Doors are closed and locked and steps are removed while parked.

Guidance that addresses aircraft security may be found in AHM 051.

3.3 Load Control

GRH 3.3.1 The Operator shall ensure a Load Control system is in place that provides for:

- i) Aircraft weight and balance conditions that are correct and within limits;
- ii) Aircraft loaded in accordance with applicable regulations and specific loading instructions for the flight;
- iii) Dissemination of dangerous goods and other special load information applicable to each flight;
- iv) Information, to include last minute changes, that is in agreement with the actual load on the aircraft and presented on a final loadsheet. (GM)

Guidance

Refer to the IRM for the definitions of *Load*, *Load Control* and *Special Load*.

Load planning is important for ensuring accurate aircraft weight and balance. Such process entails, as a minimum:

- Assemblage of all data relating to the aircraft load (originating and en route stations);
- Planning of the load for ready accessibility;
- Planning of special loads according to restrictions, maximum quantities, separation and segregation requirements
- Consideration of center of gravity parameters affecting aircraft fuel consumption.

Guidance may be found in AHM 590.

GRH 3.3.2 The Operator shall have a process to ensure weight and balance calculations:

- i) Are based on current aircraft weight and balance data;
- ii) Take into account limitations of the manufacturer and Operator. (GM)

Guidance

Guidance may be found in AHM 590.

GRH 3.3.3 If the Operator conducts passenger flights, the Operator *should* ensure procedures are in place within the Load Control system to identify and address passenger loads that do not comply with conventional aircraft loading weight allowances. (GM)

Guidance

Certain passenger groups may fall outside weight allowances (e.g., sports teams, children) normally applied for weight and balance calculation. Adequate procedures within the system identify and account for such load situations to ensure accuracy in aircraft load calculations.

Guidance may be found in AHM 510 and 514.

GRH 3.3.4 If the Operator transports dangerous goods, the Operator shall ensure a process is in place to provide the pilot-in-command (PIC), as soon as practicable prior to departure of the aircraft, with a notification (NOTOC) that contains accurate information pertaining to dangerous goods onboard the aircraft. Such notification shall include the following:

- i) If applicable, Air Waybill number.
- ii) Proper shipping name and/or UN/ID number, and where required, technical name(s).
- iii) Classification, and for Class 1, division and compatibility group.
- iv) Packing group.
- v) Identified subsidiary risk(s).
- vi) For non-radioactive material, number of packages, exact loading location and, as required, net quantity or gross weight of each package, except:
 - a) For *UN 1845: carbon dioxide, solid (dry ice)*, UN number, proper shipping name, classification, total quantity in each aircraft hold and offload airport.
- vii) For radioactive material, number and category of packages, overpacks or freight containers, exact loading location and, as applicable, transport index and dimensions for each package.
- viii) Any restriction for transport on cargo aircraft only.
- ix) Offload airport.
- x) If applicable, dangerous goods transported under a state exemption.
- xi) If applicable, ULD identification number(s). (GM)

Guidance

Refer to the IRM for the definition of *NOTOC (Notification to Captain)*

Such notification is normally referred to as the NOTOC (notification to the captain), and includes information about all dangerous goods loaded on the aircraft.

The NOTOC also contains information:

- For use in emergency response to an accident or incident involving dangerous goods onboard;
- To provide to air traffic services in the event of an in-flight emergency.

In the event the NOTOC is of such a size as to make in-flight radiotelephony transmission impracticable in an emergency situation, a summary of the information is typically provided to the PIC (NOTOC Summary), which contains at least the quantities and classes or division of dangerous goods in each cargo compartment.

Guidance may be found in DGR 9.5.

GRH 3.3.5 The Operator shall ensure weight and balance records are retained for a period in accordance with requirements of the regulatory authority, but no less than three months.

GRH 3.3.6 If the Operator conducts passenger flights, the Operator *should* ensure procedures are in place for identification and communication to Load Control of:

- i) Hold baggage, individual or cumulative weights, that exceed normal allowances;
- ii) Gate delivery items, including individual or cumulative weights that exceed normal allowances;
- iii) Other non-normal items that must be considered in the load control process.

GRH 3.3.7 If the Operator transports dangerous goods, the Operator shall ensure the dangerous goods notification to the PIC (NOTOC) as specified in GRH 3.3.4:

- i) Includes an indication that the PIC has received the information;
- ii) Is readily accessible to the airports of last departure and next scheduled arrival until the flight has arrived at the destination airport. (GM)

Guidance

An indication of receipt by the PIC is typically the PIC's signature either on or with the NOTOC.

Guidance may be found in DGR 9.5.

3.4 Aircraft Loading

GRH 3.4.1 The Operator shall ensure procedures are in place that provide for aircraft to be loaded:

- i) In accordance with written loading instructions;
- ii) In a manner that satisfies weight and balance requirements. (GM)

Guidance

Guidance may be found in AHM 514, 519, 590 and 630.

GRH 3.4.2 If the Operator transports dangerous goods, the Operator shall ensure a qualified individual is designated to be responsible for the correct loading and securing of dangerous goods onboard the aircraft.

GRH 3.4.3 If the Operator transports dangerous goods, the Operator shall ensure procedures are in place for the loading and securing of dangerous goods on an aircraft in a manner that:

- i) Prevents damage to packages and containers during aircraft loading and unloading;
- ii) Provides for separation and segregation in accordance with applicable requirements;
- iii) Prevents any movement in the aircraft. (GM)

Guidance

Refer to DGR 9.3, which contains guidance that addresses the loading and securing of dangerous goods.

GRH 3.4.4 If the Operator transports dangerous goods, the Operator shall ensure procedures are in place that assure, when a dangerous goods package or shipment appears to be damaged or leaking:

- i) The package or shipment is prevented from being loaded into an aircraft;
- ii) If already loaded, the package or shipment is removed from an aircraft;
- iii) In the case of leakage, an evaluation is conducted to identify and prevent from transport any baggage, cargo, transport devices or other items that may have become contaminated. (GM)

Guidance

Refer to DGR 9.2, 9.3 and 9.4, which contain guidance that addresses apparent damage to dangerous goods shipments.

GRH 3.4.5 If the Operator transports dangerous goods, the Operator shall ensure procedures are in place that require, when an aircraft has been contaminated by dangerous goods leakage:

- i) Hazardous contamination is removed from the aircraft without delay;
- ii) In the case of radioactive contamination, arrangements are made to take the aircraft out of service for evaluation by appropriately qualified personnel.

GRH 3.4.6 If the Operator transports revenue or non-revenue cargo, the Operator shall ensure a process is in place that requires, when undeclared or mis-declared dangerous goods are discovered in cargo during aircraft loading, a report is made to the appropriate authority of the state of occurrence. (GM)

Guidance

Specifications of this provision are applicable to operators that do and do not transport dangerous goods.

Guidance may be found in DGR 9.6.

GRH 3.4.7 (Intentionally open)

GRH 3.4.8 If the Operator conducts passenger flights, the Operator shall ensure procedures are in place that prevent shipments labeled "Cargo Aircraft Only" from being loaded onto an aircraft for a passenger flight.

GRH 3.4.9 (Intentionally open)

GRH 3.4.10 If the Operator conducts passenger flights and transports dangerous goods, the Operator shall ensure procedures are in place that prevent dangerous goods from being carried in an aircraft cabin occupied by passengers, except as permitted by the Authority or the IATA DGR. (GM)

Guidance

In general, dangerous goods are prohibited from being transported in an aircraft cabin occupied by passengers. Limitations and exceptions are specified in DGR Section 2.

GRH 3.4.11 If the Operator transports dangerous goods, the Operator shall ensure procedures are in place that prevent dangerous goods from being carried on the aircraft flight deck, except as permitted by the Authority or the IATA DGR. (GM)

Guidance

In general, dangerous goods are prohibited from being transported on the flight deck of an aircraft. Limitations and exceptions are specified in DGR Section 2.

GRH 3.4.12 If the Operator conducts passenger flights and transports revenue or non-revenue cargo and/or mail in the passenger seats of the aircraft cabin, the Operator shall ensure aircraft loading procedures are in place that assure such packages or shipments:

- i) Are secured by a safety belt or restraint device having enough strength to eliminate the possibility of shifting under all normal anticipated flight and ground conditions;
- ii) Are packaged or covered in a manner to avoid possible injury to passengers and cabin crew members;
- iii) Do not impose any load on the seats that exceeds the load limitation for the seats;
- iv) Do not restrict access to or use of any required emergency or regular exit, or aisle(s) in the cabin;
- v) Do not obscure any passenger's view of the seat belt sign, no smoking sign or required exit sign.

GRH 3.4.13 If the Operator conducts passenger flights and does *not* transport revenue cargo, non-revenue cargo and/or mail, the Operator shall ensure procedures are in place to identify items of cargo or mail that are not permitted for transport and prevent such items from being loaded onto an aircraft for a passenger flight.

3.5 Ground Support Equipment

GRH 3.5.1 The Operator *should* ensure practices and procedures are in place for the operation of ground support equipment used in aircraft handling operations that assure such equipment is operated in a manner that prevents damage to the aircraft and injury to personnel. (GM)

Guidance

Operating practices and procedures are designed to ensure:

- Standard operating procedures, applicable to specific location, are followed by drivers (or operators) of each type of ground support equipment;
- Personnel do not operate vehicles or equipment while using hand-held portable electronic devices unless a suitable "hands free" capability exists and is utilized;
- Equipment is used only for its intended purpose;
- Unserviceable equipment is clearly identified and removed from operations;
- Equipment is never moved across the path of taxiing aircraft or passengers walking between an aircraft and the terminal;
- Safety cones are placed on the apron to mark hazard areas;
- An equipment restraint line is marked or displayed on the apron;
- Equipment is positioned behind the equipment restraint line with parking brakes applied prior to any aircraft movement (departure and arrival on the apron);
- The parking brake is always applied, with gear selector in park or neutral, when equipment is parked away from or positioned at the aircraft;
- The passenger loading bridge is in the fully retracted position prior to aircraft arrival and departure;

- Equipment (including the loading bridge) is not moved toward an arriving aircraft until it has come to a complete stop, chocks are positioned, engines are shut down, anti-collision beacons are switched off and, if applicable, ground-to-flight deck communication has been established (exception: external power may be connected to the aircraft, if necessary);
- Prior to equipment movement, a guide person, visible to the driver (or operator), is in position to accurately judge clearances and communicate guidance using hand signals;
- Equipment movement does not commence or is halted, if the driver (or operator) does not have or loses visual contact with a guide person;
- Equipment or vehicles are not moved into hazard areas associated with the aircraft type;
- A brake check is accomplished prior to entering an equipment restraint area;
- Motorized equipment make a full stop as a brake check before entering the equipment restraint area and again before reaching the aircraft side;
- Equipment, when approaching or leaving an aircraft, is not driven faster than walking speed;
- Stabilizers, when fitted on equipment, are deployed when equipment is positioned at the aircraft;
- Equipment with elevating devices is not driven in the elevated position, except for final positioning at the aircraft;
- Equipment is not removed from an aircraft cabin access door unless the driver (or operator) has advised appropriate persons on the aircraft and on the ramp;
- Equipment is not removed from a position at an aircraft cabin access door until the door has been closed and secured by an authorized person or a highly visible safety device has been placed across an open door.

Guidance may be found in AHM 630.

GRH 3.5.2 The Operator *should* ensure a process is in place that assures only qualified and authorized personnel are permitted to operate ground support equipment. (GM)

Guidance

Refer to AHM 630, which addresses the operation of GSE.

GRH 3.5.3 The Operator shall ensure a program is in place for the maintenance of ground support equipment, which assures such equipment remains serviceable and in good mechanical condition. (GM)

Guidance

Guidance may be found in AHM 630.

GRH 3.5.4 The Operator shall ensure a process is in place for recording maintenance completed on ground support equipment.

3.6 Airside Event Response and Reporting

GRH 3.6.1 The Operator shall ensure an emergency management plan is in place for responding to accidents or other emergencies that may occur during aircraft ground handling operations. (GM)

Guidance

An emergency management plan may also be known as a crisis or contingency management plan. It is a control mechanism to manage response procedures to a very serious situation (i.e.,

crisis) prior to that situation becoming a disaster. Control is achieved through preparation and the capability to implement emergency actions in a timely manner.

Typical elements of an emergency management plan include ownership, crisis management team, communication and a control center.

To ensure continuing effectiveness, testing of an emergency management plan is undertaken periodically against various crisis scenarios.

Guidance may be found in AHM 620.

GRH 3.6.2 The Operator shall ensure procedures are in place for responding to emergencies that require the evacuation of an aircraft during the conduct of ground handling operations. (GM)

Guidance

Guidance may be found in AHM 633.

GRH 3.6.3 The Operator shall ensure procedures are in place for response to ground handling incidents.

GRH 3.6.4 The Operator *should* ensure a process is in place for the retention of records of accidents and incidents associated with aircraft ground handling operations.

GRH 3.6.5 The Operator shall ensure a process is in place that requires dangerous goods accidents or incidents to be reported to the appropriate authority of the State of the Operator and the state in which the accident or incident occurred, and such reports are in accordance with the reporting requirements of the appropriate authorities. (GM)

Guidance

Specifications of this provision are applicable to operators that do and do not transport dangerous goods.

Guidance may be found in DGR 9.6.

4 Special Aircraft Ground Handling Operations

4.1 Aircraft Fueling

GRH 4.1.1 The Operator shall have a process to ensure fuel suppliers are maintaining standards of fuel safety and quality acceptable to the Operator and fuel delivered and loaded onto aircraft is:

- i) Free from contamination;
- ii) Of the correct grade and specification for each aircraft type. (GM)

Guidance

The process ensures fuel is stored, handled and serviced in accordance with accepted standards.

Approved fuel specifications are contained in each aircraft manual.

To ensure fuel corresponds to the specifications and grade of product necessary for the applicable aircraft type(s), a control process at each location where the operator has aircraft fueling operations is necessary. Such process ensures the existence of periodic inspections of critical aspects of the fuel supply system at each applicable location, to include, as a minimum:

- Fuel facilities;
- Safety and quality procedures;
- Performance levels of personnel.

Additional guidance may be found in the IFQP (IATA Fuel Quality Pool) Quality and Safety Procedures.

GRH 4.1.2 The Operator shall ensure, during fueling operations with passengers or crew onboard the aircraft, procedures are in place that provide for the designation of a person with responsibility for fueling operations and specify the method(s) by which that responsible person:

- i) Communicates with the flight crew or other qualified persons onboard the aircraft;
- ii) Provides notification to the flight crew or other qualified personnel onboard the aircraft and/or other appropriate personnel engaged in aircraft ground handling activities when fueling is about to begin and has been completed unless an equivalent procedural means has been established to ensure the flight and/or cabin crew are aware of fueling operations and are in a position to effect an expeditious evacuation of the aircraft, if necessary;
- iii) Provides notification to the flight crew or other qualified personnel onboard the aircraft when a hazardous condition or situation has been determined to exist. (GM)

Guidance

Ground handling personnel, including those who provide aircraft fuel servicing, are to be properly trained and have a clear understanding of all required communication procedures and have the ability to execute such procedures in an expeditious manner should a dangerous situation develop.

The specification in item ii) may be satisfied by **either**:

- Equivalent procedural means, acceptable to the State and applicable authorities, that would permit the flight crew or other qualified persons to be aware of the start and completion of fueling operations, **or**
- Procedures established by the operator that would ensure authorized personnel onboard the aircraft are continuously in a position to effect an expeditious evacuation of the aircraft for any reason, including a fuel spill or fire.

A suitable method of communication with the flight crew or other qualified persons onboard the aircraft includes use of the aircraft inter-communication system, direct person-to-person contact

or other methods that ensure direct and timely communication. Use of the aircraft inter-communication system to maintain continuous two-way communication during fueling operations is not a requirement.

Additional guidance may be found in AHM 175 and 631, as well as the ICAO Airport Services Manual, Document 9137 (ASM), Part 1.

GRH 4.1.3 The Operator shall ensure procedures are in place for fueling operations with passengers or crew onboard the aircraft that provide for, in the event of a fuel spill, immediate and follow-up actions to assure:

- i) Fueling is stopped;
- ii) Appropriate ground response personnel or airport fire service is summoned, as applicable;
- iii) Notification of the flight crew or other qualified persons onboard the aircraft.

GRH 4.1.4 The Operator *should* ensure, during fueling operations with passengers or crew onboard the aircraft, procedures are in place that establish a fueling safety zone and specify restrictions and limitations for the use of devices, conduct of activities and operation of vehicles and ground support equipment within the safety zone. (GM)

Guidance

Procedures typically specify a fueling safety zone that encompasses the area on the ramp within a 3 m (10 ft) radius around the aircraft fueling receptacles, tank vents and around the fueling equipment.

Procedures also restrict equipment performing aircraft servicing functions from being positioned within a 3 m (10 foot) radius of aircraft fuel vent openings.

Limitations and restrictions in a fueling safety zone typically preclude the use or activation of:

- Items that could be sources of ignition or fire (e.g., matches, welding equipment, flashbulbs);
- Portable electronic devices with proper separation distance from aircraft fuel vents and/or fueling equipment (e.g., mobile telephones, portable radios, pagers).

Guidance may be found in AHM 175 and 630, as well as the ICAO ASM, Part 1.

GRH 4.1.5 The Operator shall ensure safety procedures associated with aircraft fueling operations are in place that assure, during fueling operations with passengers or crew onboard the aircraft:

- i) The ground area beneath aircraft exit doors that have been designated for rapid deplaning or emergency evacuation is kept clear of obstructions;
- ii) Where a boarding bridge is in use, an interior access path is maintained from the aircraft to the terminal;
- iii) Where a passenger boarding bridge is not in use, aircraft passenger steps or an alternate means of emergency evacuation is in place.

Guidance

Guidance may be found in AHM 175 and 630, as well as the ICAO ASM, Part 1.

GRH 4.1.6 The Operator *should* ensure safety procedures associated with aircraft fueling operations are in place that assure, during fueling operations with passengers or crew onboard the aircraft:

- i) Establishment of a bonding connection between the fueling vehicle and aircraft to provide for dissipation of electrical energy that may develop;

- ii) A prohibition from connecting or disconnecting electrical equipment to the aircraft;
- iii) Provisions for operation of the aircraft APU;
- iv) Prevention of damage to the fuel hose;
- v) A requirement for the cessation of aircraft fueling when it is determined lightning is a threat. (GM)

Guidance

Guidance may be found in AHM 175 and 630.

GRH 4.1.7 The Operator shall ensure, during aircraft fueling operations:

- i) Fire extinguishing equipment suitable for at least initial intervention in the event of a fuel fire is readily available, and personnel have been trained in the use of such equipment;
- ii) Procedures are in place for quickly summoning the rescue and fire fighting service in the event of a fire or major fuel spill. (GM)

Guidance

Guidance may be found in AHM 175 and 630.

4.2 Aircraft De-/Anti-icing

GRH 4.2.1 If the Operator has the potential to operate commercial flights from any airport with conditions conducive to ground aircraft icing, the Operator shall have a De-/Anti-icing Program, which is approved by the Authority, if applicable, and, as a minimum:

- i) Ensures adherence to the Clean Aircraft Concept;
- ii) Defines responsibilities within the Program;
- iii) Addresses applicable locations within the route network;
- iv) Defines areas of responsibility;
- v) Specifies technical and operational requirements;
- vi) Specifies training and qualification requirements;
- vii) Is applicable to external service providers that perform de-/anti-icing functions for the Operator. (GM)

Guidance

Refer to the IRM for the definition of *Clean Aircraft Concept*.

A de-/anti-icing program covers all locations where flights might be conducted and that have the potential for ground icing conditions, and defines all areas of responsibility pertaining to aircraft de-icing and anti-icing, including functions conducted by external ground handling service providers.

If the operator has a regional route network that does not include any airports that have the potential for ground icing conditions, the Operations Manual would have a statement that specifically prohibit flights to any airports where there is a possibility of ground icing conditions.

The program requires all persons involved in ground de-icing and anti-icing activities to be trained and qualified in the procedures, communications and limitations of each area of responsibility.

If any de-/anti-icing functions will be conducted by external ground handling agents or service providers, the program describes and defines specific control processes that ensure all de-icing and anti-icing requirements of the operator are fulfilled by external service providers.

Additional guidance may be found in ICAO Doc 9640-AN/940, Manual of Aircraft Ground De-icing/Anti-icing Operations, Chapter 7, and in the AEA Recommendations for De-icing/Anti-icing of Aircraft on the Ground.

GRH 4.2.2 If the Operator has a De-/Anti-icing Program, the Operator shall ensure policies and procedures are in place that result in:

- i) Standardized methods of fluid application;
- ii) Compliance with specific aircraft limitations;
- iii) A clean aircraft through proper treatment of applicable surfaces. (GM)

Guidance

Policies and procedures define equipment for and methods of applying de-icing and anti-icing fluid to produce an aircraft free of contamination (clean aircraft).

Procedures specify a sequence for fluid application to the applicable aircraft surfaces and define specific methods and techniques for applying fluid to each individual surface.

Procedures provide limitations that are to be observed to successfully complete the process, including correct fluid mixtures, fluid temperatures and nozzle pressure.

Additional guidance may be found in ICAO Doc 9640-AN/940, Manual of Aircraft Ground De-icing/Anti-icing Operations, Chapter 11.

GRH 4.2.3 If the Operator has a De-/Anti-icing Program, the Operator *should* have a process to ensure the availability and use of adequate facilities and equipment for aircraft de-/anti-icing operations at applicable locations.

GRH 4.2.4 If the Operator has a De-/Anti-icing Program, the Operator shall ensure fluids used in de-icing and anti-icing operations are:

- i) Stored, handled and applied in accordance with criteria established by the Operator, fluid manufacturer and aircraft manufacturer;
- ii) Manufactured in accordance with ISO specifications. (GM)

Guidance

To be effective, fluids used in the de-/anti-icing process are required to meet use criteria established by the operator, fluid manufacturer and aircraft manufacturer. Additionally, fluids are to be manufactured in accordance with ISO specifications.

There is a means for ensuring the appropriate types of fluids (Types I, II, III or IV) are utilized in the proper manner for conditions under which de-icing and anti-icing operations are being conducted, each diluted as required to achieve desired results.

Procedures ensure fluids are handled in accordance with recommendations of the fluid manufacturer and effectiveness is not degraded due to contamination.

Additional guidance may be found in ICAO Doc 9640-AN/940, Manual of Aircraft Ground De-icing/Anti-icing Operations, Chapter 11.

GRH 4.2.5 If the Operator has a De-/Anti-icing Program, the Operator shall ensure procedures are in place for ground handling personnel to communicate with the flight crew to assure:

- i) The aircraft is properly configured prior to beginning the de-/anti-icing process;
- ii) The flight crew receives all necessary information relevant to fluid(s) applied to the aircraft surfaces;
- iii) The flight crew receives confirmation of a clean aircraft;
- iv) The flight crew receives an "all clear" signal at the completion of the de-/anti-icing process and prior to aircraft movement. (GM)

Guidance

Procedures define all communication necessary between ground handling personnel and the flight crew prior to and after completion of the de-/anti-icing process.



Communication procedures require ground handling personnel to provide the flight crew with final information about the process that verifies the aircraft is in compliance with the Clean Aircraft Concept.

Additional guidance may be found in ICAO Doc 9640-AN/940, Manual of Aircraft Ground De-icing/Anti-icing Operations, Chapter 10.

SECTION 7 – CARGO OPERATIONS (CGO)

Applicability

Section 7 addresses functions within the scope of cargo handling operations, and is applicable to an operator that transports revenue or non-revenue cargo and/or mail. COMAT (Company Material) is non-revenue cargo.

In this section, non-revenue cargo and mail are addressed in the same way as revenue cargo for the purposes of handling, loading, securing and transporting.

Individual provisions in this section begin with a conditional phrase (“If the Operator...”) and are applicable to an operator that meets the condition(s) stated in the phrase.

Functions within the scope of cargo handling operations include:

- Cargo and mail acceptance;
- Cargo and mail handling;
- ULD loading/build-up;
- Application of required security measures.

The loading of cargo into the aircraft is addressed in Section 6, Ground Handling Operations (GRH).

Where an operator outsources the performance of functions within the scope of cargo operations to external service providers, the operator retains overall responsibility for such functions, and must demonstrate processes for monitoring applicable external service providers in accordance with CGO 1.10.2.

Security specifications applicable to functions within the scope of cargo operations are located in Section 8 of this manual.

General Guidance

Definitions of technical terms used in this ISM Section 7, as well as the meaning of abbreviations and acronyms, are found in the IATA Reference Manual for Audit Programs (IRM).

1 Management and Control

1.1 Management System

CGO 1.1.1 If the Operator transports revenue cargo, the Operator shall have a management system that ensures control of cargo operations and the management of safety and security outcomes. (GM) ◀

Guidance

Refer to the IRM for the definitions of *Cargo*, *Operations*, *Operator* and *State*. The definition of *Cargo* includes definitions for revenue cargo and non-revenue cargo.

Applicable authorities as specified in item iii) refers to authorities that may have jurisdiction over international operations conducted by the Operator over the high seas or within a foreign country.

Refer to Guidance associated with ORG 1.1.1 located in ISM Section 1.

CGO 1.1.2 If the Operator transports revenue cargo, the Operator shall have a manager with appropriate qualifications and authority who:

- i) Has the authority and responsibility for the management and supervision of functions and activities within the scope of cargo operations;

- ii) Is accountable to senior management for ensuring the safety and security of cargo operations. ◀

1.2 Authorities and Responsibilities

CGO 1.2.1 If the Operator transports revenue cargo, the Operator shall ensure the management system defines the authorities and responsibilities of management and non-management personnel that perform functions relevant to the safety or security of cargo operations. The management system shall also specify:

- i) The levels of management with the authority to make decisions that affect the safety and/or security of cargo operations;
- ii) Responsibilities for ensuring cargo operations are conducted in accordance with applicable regulations and standards of the Operator. (GM) ◀

Guidance

Refer to Guidance associated with ORG 1.3.1 located in ISM Section 1.

CGO 1.2.2 If the Operator transports revenue cargo, the Operator shall have a process for the delegation of duties within the management system for cargo operations that ensures managerial continuity is maintained when operational managers, including nominated post holders, if applicable, are absent from the workplace. (GM) ◀

Guidance

Refer to the IRM for the definition of *Post Holder*.

Refer to Guidance associated with ORG 1.3.2 located in ISM Section 1.

1.3 Communication

CGO 1.3.1 If the Operator transports revenue cargo, the Operator shall have a communication system that enables an effective exchange of information relevant to the conduct of cargo operations throughout the management system for cargo operations and among operational personnel. (GM) ◀

Guidance

Refer to Guidance associated with ORG 1.4.1 located in ISM Section 1.

Specific means of communication between management and operational cargo handling personnel may include:

- Email, Internet;
- Safety or operational reporting system;
- Communiqués (letters, memos, bulletins);
- Publications (newsletters, magazines).

If email is used as an official medium for communication operational personnel, the process is typically formalized by the operator to ensure control and effectiveness.

1.4 Provision of Resources

CGO 1.4.1 If the Operator transports revenue cargo, the Operator shall ensure the existence of the necessary facilities, workspace, equipment and supporting services, as well as work environment, to satisfy cargo operations safety and security requirements. (GM) ◀

Guidance

Conformity with CGO 1.4.1 does not require specifications to be *documented* by an operator.

Refer to Guidance associated with ORG 1.6.1 located in ISM Section 1.

The Operator would typically have a monitoring and control process to ensure each external cargo operations service provider meets the specifications of this provision.

CGO 1.4.2 If the Operator transports revenue cargo, the Operator shall ensure positions within the cargo operations organization that affect safety or security of operations are filled by personnel on the basis of knowledge, skills, training and experience appropriate for the position. (GM) ◀

Guidance

Refer to Guidance associated with ORG 1.6.2 located in ISM Section 1.

A corporate personnel selection policy that applies to all operational areas of the company, including cargo operations, serves to satisfy this requirement.

An operator would typically have a monitoring and control process to ensure each external cargo operations service provider meets the specifications of this provision.

1.5 Documentation System

CGO 1.5.1 If the Operator transports revenue cargo, the Operator shall have a system for the management and control of documentation and/or data used directly in the conduct or support of cargo operations, to include:

- i) A means of identifying the version of cargo operational documents;
- ii) A distribution process that ensures availability of the current version of the applicable Operations Manual to appropriate personnel in all areas where cargo operations are conducted;
- iii) Review and revision as necessary to maintain the currency of information contained in documents;
- iv) A means of document retention that permits easy reference and accessibility;
- v) Identification and control of obsolete and/or reproduced documents;
- vi) Reception of documentation and/or data from external sources to ensure information is received in time to satisfy operational requirements;
- vii) Retention and dissemination of documentation received from external sources. (GM) ◀

Guidance

If the operator outsources operational functions within the scope of cargo operations, the distribution process for the Operations Manual as specified in ii) would include external service providers.

Refer to Guidance associated with ORG 2.1.1 located in ISM Section 1.

CGO 1.5.2 If the Operator transports revenue cargo and utilizes an electronic system for the management and control of any documentation used directly in the conduct of cargo operations, the Operator shall ensure the system provides for a scheduled generation of back-up files for such documents. (GM) ◀

Guidance

Refer to Guidance associated with ORG 2.1.2 located in ISM Section 1.

CGO 1.5.3 If the Operator transports revenue cargo, the Operator shall have a process to ensure documentation used in the conduct or support of cargo operations:

- i) Contains legible and accurate information;
- ii) Is presented in a format that is appropriate for use by cargo operations personnel;
- iii) If applicable, is accepted or approved by the Authority. ◀

1.6 Operational Manuals

CGO 1.6.1 If the Operator transports revenue or non-revenue cargo, the Operator shall have an Operations Manual (OM), which may be issued in separate parts, that contains the operational policies, processes, procedures and other information necessary to ensure compliance with applicable regulations, laws, rules and standards of the Operator. The content of the OM shall contain standards and guidance that addresses the acceptance, handling, loading, securing and transporting of cargo as specified in **Table 7.1**. (GM)

Guidance

This provision is applicable to an operator that transports non-revenue cargo. COMAT is non-revenue cargo.

An OM may include guidance that addresses areas generic to all functions within the scope of cargo operations; other parts of the manual may be specific to individual operational functions.

Because the scope of cargo operations is broad and varies by operator, rather than publishing a separate OM dedicated to cargo operations (e.g. a Cargo Operations Manual), an operator might choose to publish all guidance for cargo operations in a section of an OM that addresses other types of operations (e.g. maintenance management manual for an operator that transports only COMAT).

An operator could also choose to issue the information in separate documents that are each specific to the various cargo operations functions (e.g., safety and security, acceptance, physical handling, documentation, identification, storage and stowage, preparation for flight). Each individual document would typically contain generic guidance that is applicable to all cargo operations functions (e.g., organizational policies, general definitions), as well as guidance that is specific to the particular function or office location (e.g., process descriptions, standard operating procedures, references to the appropriate regulations and IATA manuals).

If an operator has external organizations conduct cargo operations functions, such an operator would then be expected to have a monitoring and control process to ensure each external organization either uses the OM of the operator or has its own published operations manual that fulfills operational safety, security and quality requirements of the operator.

CGO 1.6.2 If the Operator transports revenue or non-revenue cargo, and also transports dangerous goods, the Operator shall ensure a copy of the current edition of the IATA Dangerous Goods Regulations (DGR) or the ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air (Technical Instructions), including addenda as appropriate, is available at each location where revenue or non-revenue cargo operations are conducted and dangerous goods are accepted. (GM)

Guidance

Cargo operations would include acceptance of any cargo, to include small packages that would be shipped as cargo.

A monitoring process is typically in place to ensure each external cargo operations service provider has a copy of the DGR or ICAO Technical Instructions available as specified.

Other relevant manuals, to include the IATA Live Animals Regulations (LAR), IATA Airport Handling Manual (AHM) and IATA Perishable Cargo Regulations (PCR), may also be available.

The DGR is based on the ICAO Technical Instructions and is designed for ease of use in operations. However, in some jurisdictions it may be a requirement to have the ICAO Technical Instructions available in accordance with local regulations.

When required, DGR addenda are issued to notify of any amendments or corrections to the current edition of the Dangerous Goods Regulations. It may include any corrigenda issued by ICAO to the current edition of the Technical Instructions.

CGO 1.6.3 If the Operator transports revenue or non-revenue cargo, but does *not* transport dangerous goods, the Operator shall ensure the OM contains the policies and associated guidance necessary to prevent dangerous goods from being inadvertently loaded onto the aircraft. (GM)

Guidance

For a dangerous goods “no-carry” operator, guidance in the OM typically addresses vigilance with respect to hidden or inconspicuous dangerous goods, and includes an indicative list of items that could contain dangerous goods.

1.7 Records System

CGO 1.7.1 If the Operator transports revenue cargo, the Operator shall have a system for the management and control of operational records to ensure the content and retention of such records is in accordance with requirements of the Authority, as applicable, and to ensure operational records are subjected to standardized processes for:

- i) Identification;
- ii) Legibility;
- iii) Maintenance;
- iv) Retention and retrieval;
- v) Protection and security;
- vi) Disposal or deletion (electronic records). (GM) ◀

Guidance

Refer to Guidance associated with ORG 2.2.1 located in ISM Section 1.

CGO 1.7.2 If the Operator transports revenue cargo and utilizes an electronic system for the management of records, the Operator shall ensure the system provides for a scheduled generation of back-up record files. (GM) ◀

Guidance

Refer to Guidance associated with ORG 2.2.2 located in ISM Section 1.

1.8 (Intentionally open)

1.9 Quality Assurance Program

CGO 1.9.1 If the Operator transports revenue or non-revenue cargo, the Operator shall have a quality assurance program that provides for the auditing and evaluation of the management system and functions within the scope of cargo operations at planned intervals to ensure the Operator is:

- i) Complying with regulatory and internal requirements;
- ii) Satisfying stated operational needs;
- iii) Identifying undesirable conditions and areas requiring improvement;
- iv) Identifying hazards to operations. [SMS] (GM) ◀

Guidance

Refer to the IRM for the definition of *Quality Assurance*.

Refer to Guidance associated with ORG 3.4.1 located in ISM Section 1.

A corporate quality assurance program that is applied to all areas of the company associated with the conduct of revenue and/or non-revenue cargo operations will also satisfy this requirement.

CGO 1.9.2 If the Operator transports revenue or non-revenue cargo, the Operator shall have a process for addressing findings resulting from audits of functions within the scope of cargo operations, which ensures:

- i) Identification of root cause(s);
- ii) Development of corrective action, as appropriate to address finding(s);
- iii) Implementation of corrective action in appropriate operational areas;
- iv) Evaluation of corrective action to determine effectiveness. ◀

CGO 1.9.3 If the Operator transports revenue or non-revenue cargo, the Operator shall have a process to ensure significant issues arising from audits of functions within the scope of cargo operations are subject to management review in accordance with ORG 1.5.1 and, as applicable, ORG 1.5.2. [SMS] (GM) ◀

Guidance

Refer to Guidance associated with ORG 3.4.4 located in ISM Section 1.

1.10 Outsourcing and Product Quality Control

CGO 1.10.1 If the Operator transports revenue or non-revenue cargo and/or mail, and has external service providers conduct outsourced operational functions within the scope of cargo handling operations, the Operator shall have processes to ensure a contract or agreement is executed with such external service providers. Contracts or agreements shall identify measurable specifications that can be monitored by the Operator to ensure cargo requirements that affect the safety and/or security of aircraft operations are being fulfilled by the service provider. (GM) ◀

Guidance

Refer to the IRM for the definition of *Outsourcing*.

COMAT is non-revenue cargo.

Refer to the Applicability box at the beginning of this section for the functions within the scope of cargo handling operations.

The requirement for a cargo handling contract or agreement applies to *all* operational functions within the scope of cargo handling operations that are outsourced.

The AHM contains detailed guidance and examples of a standard ground handling agreement and a service level agreement, both of which may be utilized in whole or in part to cover cargo operations.

CGO 1.10.2 If the Operator transports revenue or non-revenue cargo and/or mail, and has external service providers conduct outsourced operational functions within the scope of cargo handling operations, the Operator shall have a process to monitor such external service providers to ensure cargo requirements that affect the safety and security of aircraft operations are being fulfilled. (GM) ◀

Guidance

Refer to Guidance associated with ORG 3.5.2 located in ISM Section 1.

CGO 1.10.3 If the Operator transports revenue or non-revenue cargo and/or mail, and has external service providers conduct outsourced operational functions within the scope of cargo handling operations, the Operator *should* include auditing as a process for the monitoring of external service providers in accordance with CGO 1.10.2. ◀

1.11 Safety Management

Risk Management

CGO 1.11.1 If the Operator transports revenue cargo, the Operator *should* have processes implemented in cargo operations that include a combination of reactive and proactive methods for safety data collection and analysis to identify hazards that present existing or potential risks to aircraft operations. [SMS] (GM) ◀

Guidance

Refer to the IRM for the definitions of *Hazard (Aircraft Operations)* and *Safety Risk*.

Hazard identification is an element of the Safety Risk Management component of the SMS framework.

Refer to Guidance associated with ORG 3.1.1 located in ISM Section 1.

CGO 1.11.2 If the Operator transports revenue cargo, the Operator *should* have a safety risk assessment and mitigation program implemented in cargo operations that specifies processes to ensure:

- i) Hazards are analyzed to determine the existing and potential safety risks to aircraft operations;
- ii) Safety risks are assessed to determine the requirement for risk control action(s);
- iii) When required, risk mitigation actions are developed and implemented in cargo operations. [SMS] (GM) ◀

Guidance

Risk assessment and mitigation is an element of the Safety Risk Management component of the SMS framework.

Refer to Guidance associated with ORG 3.1.2 located in ISM Section 1.

Operational Reporting

CGO 1.11.3 If the Operator transports revenue cargo, the Operator shall have an operational reporting system implemented in the cargo operations organization that:

- i) Encourages and facilitates cargo operations personnel to submit reports that identify safety hazards, expose safety deficiencies and raise safety concerns;
- ii) Includes analysis and cargo operations management action to address operational deficiencies, hazards, incidents and concerns identified through the reporting system. [SMS] (GM) ◀

Guidance

Operational reporting is considered a *proactive* hazard identification activity in an SMS.

Refer to Guidance associated with ORG 3.1.3 located in ISM Section 1.

CGO 1.11.4 If the Operator transports revenue cargo, the Operator *should* have a confidential safety reporting system implemented within the cargo operations organization in a manner that encourages and facilitates the reporting of events, hazards and/or concerns resulting from or associated with human performance in operations. [SMS] (GM) ◀

Guidance

A confidential safety reporting system is considered a *proactive* hazard identification activity in an SMS.

Refer to Guidance associated with ORG 3.1.4 located in ISM Section 1.

Safety Performance Monitoring and Management

CGO 1.11.5 If the Operator transports revenue cargo, the Operator *should* have processes implemented in the cargo operations organization for setting performance measures as a means to monitor the safety performance of the organization and to validate the effectiveness of risk controls. [SMS] (GM) ◀

Guidance

Refer to the IRM for the definition of *Safety Assurance*.

Setting measurable safety objectives is included in the safety performance monitoring and measurement element of the Safety Assurance component of the SMS framework.

By setting performance measures, an operator is able to track and compare its operational performance against a target (i.e. the performance objective, typically expressed as a rate or number reduction) over a period of time (e.g. one year). Achievement of the target (or objective) would represent an improvement in the operational performance. The use of performance measures is an effective method to determine if desired safety outcomes are being achieved, and to focus attention on the performance of the organization in managing operational risks and maintaining compliance with relevant regulatory requirements.

Refer to Guidance associated with ORG 3.2.1 located in ISM Section 1.

2 Training and Qualification

2.1 Training Program

CGO 2.1.1 If the Operator transports revenue or non-revenue cargo and/or mail, the Operator shall have a process to ensure personnel that perform operational duties in functions within the scope of cargo (revenue or non-revenue) handling operations for the Operator, to include personnel of external service providers, complete initial and recurrent training. Such training shall provide the knowledge necessary to perform duties, execute procedures and operate equipment associated with specific cargo handling functions and responsibilities, and include:

- i) Familiarization training on applicable regulations;
- ii) In-depth training on requirements, including policies, procedures and operating practices;
- iii) Safety training on associated operational hazards;
- iv) Training in human factors principles. (GM)

Guidance

COMAT is non-revenue cargo.

Refer to the Applicability box at the beginning of this section for the functions within the scope of cargo handling operations.

Requirements for initial and recurrent training apply to all personnel that perform duties within the scope of cargo handling operations for an operator, both at the main base and external office locations where such operations are conducted. Training for security requirements includes access control at both landside and airside facilities and cargo security procedures in accordance with requirements of the State of Flight Departure and/or the State of Flight Arrival, as applicable.

CGO 2.1.2 If the Operator transports revenue or non-revenue cargo and/or mail, the Operator shall have a process to ensure the structure and content of training completed by cargo operations personnel in accordance with CGO 2.1.1 is reviewed and updated to remain relevant and current.

CGO 2.1.3 If the Operator transports revenue or non-revenue cargo and/or mail, the Operator shall have a process to ensure personnel that perform operational duties in functions within the scope of cargo handling operations for the Operator complete initial training in accordance with CGO 2.1.1 to become qualified prior to being assigned to perform such duties.

CGO 2.1.4 If the Operator transports revenue or non-revenue cargo and/or mail, the Operator shall have a process to ensure personnel that perform operational duties in functions within the scope of cargo handling operations for the Operator complete recurrent training in accordance with CGO 2.1.1 to remain qualified to perform such duties. Recurrent training, except recurrent training in dangerous goods as specified in CGO 2.2.1, CGO 2.2.2 or CGO 2.2.3, shall be completed on a frequency in accordance with requirements of the regulatory authority, but *not less than once during every 36-month period*.

CGO 2.1.5 If the Operator transports revenue or non-revenue cargo and/or mail, the Operator shall have a process to ensure training for personnel that perform operational duties within the scope of cargo handling operations for the Operator includes testing or evaluation by written, oral or practical means, as applicable, to satisfy the requirement for operational personnel to demonstrate adequate knowledge, competency or proficiency to perform duties, execute procedures or operate equipment.

CGO 2.1.6 If the Operator transports revenue or non-revenue cargo and/or mail, the Operator shall have a process to ensure completion of required training by personnel that perform operational duties within the scope of cargo handling operations for the Operator is recorded and such records retained in accordance with CGO 1.7.1.

2.2 Program Elements

CGO 2.2.1 If the Operator transports revenue cargo, and also transports dangerous goods, the Operator shall have a process to ensure personnel assigned the responsibility for accepting dangerous goods complete dangerous goods training, to include *initial training* and *recurrent training*, on a frequency in accordance with requirements of the regulatory authority, but *not less than once within 24 months of previous training in dangerous goods*. Such training shall address, as a minimum:

- i) General philosophy;
- ii) Limitations;
- iii) General requirements for shippers;
- iv) Classification;
- v) List of dangerous goods;
- vi) General packing requirements;
- vii) Packing instructions;
- viii) Labeling and marking;
- ix) Shipper's declaration and other relevant documentation;
- x) Acceptance procedures;
- xi) Recognition of undeclared dangerous goods;
- xii) Storage and loading procedures;
- xiii) Flight crew notification;
- xiv) Provisions for passengers and/or crew;
- xv) Emergency procedures. (GM)

Guidance

Recurrent training in dangerous goods is completed within a validity period that expires 24 months from the previous training to ensure knowledge is current, unless a shorter period is defined by a competent authority. However, when such recurrent training is completed within the final 3 months of the 24-month validity period, the new validity period may extend from the date on which the recurrent training was completed until 24 months from the expiry date of the current validity period. If such recurrent training is completed *prior* to the final three months of the validity period, the new validity period would extend 24 months from the date the recurrent training was completed.

Subjects included in the curriculum for dangerous goods training for cargo handling personnel will vary depending on specific responsibilities and duty function(s). For the purpose of dangerous goods training, cargo handling functions generally break down into three groupings:

- Acceptance of cargo;
- Handling, storage and build-up of cargo;
- Provision of required information to load planning.

Refer to DGR 1.5 (Table 1.5.A, Minimum Requirements for Training Curricula), for detailed guidance that addresses dangerous goods training and subjects applicable to specific cargo handling functions.

CGO 2.2.2 If the Operator transports revenue or non-revenue cargo and/or mail, and does not transport dangerous goods, the Operator shall have a process to ensure personnel assigned the responsibility for accepting or handling any cargo and/or mail complete dangerous goods training,

to include *initial training* and *recurrent training*, on a frequency in accordance with CGO 2.2.1. Such training shall address, as a minimum:

- i) General philosophy;
- ii) Limitations;
- iii) Labeling and marking;
- iv) For personnel that accept cargo, shipper's declarations and other relevant documentation;
- v) Recognition of undeclared dangerous goods;
- vi) Provisions for passengers and/or crew;
- vii) Emergency procedures. (GM)

Guidance

COMAT is non-revenue cargo.

When an operator does not transport dangerous goods (i.e. a "no-carry" operator), dangerous goods training is still required for cargo operations personnel to ensure declared and undeclared dangerous goods are recognized and prohibited from being carried or loaded onto an aircraft.

Dangerous goods training is structured to provide the requisite knowledge to permit cargo operations personnel to recognize dangerous goods, whether labeled or not labeled, and to prevent such dangerous goods from being inadvertently accepted and/or planned for loading into an aircraft.

Refer to DGR 1.5 (Table 1.5.B, Minimum Requirements for Training Curricula for "No-carry" Operators), for detailed guidance that addresses dangerous goods training and subjects applicable to specific cargo handling functions.

CGO 2.2.3 If the Operator transports revenue or non-revenue cargo and/or mail, the Operator shall have a process to ensure personnel assigned the responsibility for handling, storing or loading such cargo and/or mail on or into unit load devices (ULDs) or onto the aircraft receive dangerous goods training, to include *initial training* and *recurrent training*, on a frequency in accordance with CGO 2.2.1. Such training shall address, as a minimum:

- i) General philosophy;
- ii) Limitations
- iii) Labeling and marking;
- iv) Recognition of undeclared dangerous goods;
- v) Storage and loading procedures;
- vi) Flight crew notification;
- vii) Provisions for passengers and/or crew;
- viii) Emergency procedures. (GM)

Guidance

Refer to the IRM for the definition of *Unit Load Device (ULD)*, which addresses certified and non-certified units.

Refer to DGR 1.5 (Table 1.5.A, Minimum Requirements for Training Curricula), for detailed guidance that addresses dangerous goods training and subjects applicable to personnel with responsibilities for handling, storing and loading cargo.

CGO 2.2.4 If the Operator transports revenue cargo, the Operator *should* have a process to ensure cargo operations personnel assigned to operate equipment in the performance of their



duties in cargo operations are trained and qualified to operate the equipment associated with those duties.

3 Acceptance and Handling

3.1 General Cargo

CGO 3.1.1 If the Operator transports revenue or non-revenue cargo and/or mail, the Operator shall have a process to ensure such shipments accepted for transport:

- i) If revenue cargo and/or mail, are in compliance with standards in the OM as specified in CGO 1.6.1;
- ii) If interline cargo, are in compliance with IATA interline cargo requirements
- iii) If non-revenue cargo, are in compliance with the OM or equivalent document as specified in CGO 1.6.1. (GM)

Guidance

COMAT is non-revenue cargo.

Shipments of cargo or mail are accepted under the terms of the OM, which typically specifies procedures to ensure acceptance personnel verify the cargo (revenue or non-revenue) has been packed in a manner:

- For safe transport with ordinary care in handling;
- To preclude injury or damage to any person, cargo or property.

It is expected that interline cargo also complies with the applicable requirements of the receiving operator(s).

Refer to the IATA manual "The Complete Cargo Conference" for guidance pertaining to interline cargo requirement.

CGO 3.1.2 (Intentionally open)

CGO 3.1.3 If the Operator transports revenue or non-revenue cargo and utilizes scales to determine the weight of cargo, the Operator shall have a process to ensure scales are periodically checked and calibrated, and such actions are recorded and retained in accordance with applicable regulations. (GM)

Guidance

Such scales might be referred to as weigh bridges.

Accuracy in cargo weights is a critical safety factor and is monitored by many states. Records of scale checking and calibration are typically made available to the applicable authority for review, if requested.

Guidance may be found in AHM 534.

CGO 3.1.4 If the Operator transports revenue cargo, the Operator *should* have a process to ensure cargo terminals are equipped with specifically configured facilities appropriate for storage of dangerous goods, radioactive material and other special cargo, such as human remains, live animals, perishables, valuable cargo and fragile goods. (GM)

Guidance

Such items may have separation requirements as specified in the appropriate IATA manual(s) and, additionally, may be governed by local rules or regulations. Information relative to storage of cargo is included in the OM.

3.2 Dangerous Goods

CGO 3.2.1 If the Operator transports revenue or non-revenue cargo and/or mail, and also transports dangerous goods, the Operator shall have a Dangerous Goods Acceptance Checklist that reflects applicable requirements contained in the current dangerous goods regulations. (GM)

Guidance

Sample checklists for non-radioactive shipments, radioactive shipments and dry ice (carbon dioxide, solid) are found in the back of the DGR.

Refer to DGR 9.1.3 for guidance that addresses the Dangerous Goods Acceptance Checklist.

CGO 3.2.2 If the Operator transports revenue or non-revenue cargo and/or mail, and also transports dangerous goods, the Operator shall have procedures to ensure the use of a Dangerous Goods Acceptance Checklist as specified in CGO 3.2.1 to verify:

- i) Package(s), overpack(s) or freight containers, as applicable, are correctly marked and labeled;
- ii) The Shipper's Declaration for Dangerous Goods, if required, or other documentation complies with the requirements of the current edition of the DGR. (GM)

Guidance

Refer to DGR 9.1.3 for guidance that addresses use of the Dangerous Goods Acceptance Checklist.

CGO 3.2.3 If the Operator transports revenue or non-revenue cargo and/or mail, and also transports dangerous goods, the Operator shall have procedures to ensure the Dangerous Goods Acceptance Checklist and shipper documentation, to include the Shipper's Declaration for Dangerous Goods, if required, and information to the pilot-in-command, are retained for a minimum period of three months after the flight on which the dangerous goods were transported. (GM)

Guidance

A minimum of one copy of each document associated with each dangerous goods shipment is retained on file for three months or, if required by the State of Flight Departure, a longer period of time.

Each shipment that requires a Shipper's Declaration for Dangerous Goods is accompanied by the appropriate information, which is immediately available to all relevant personnel, to include the pilot-in-command, for use in an emergency response to accidents and incidents involving dangerous goods.

Emergency response information may be found in The Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods (ICAO Doc 9481- AN/928), or in any other document that provides similar information concerning dangerous goods on board.

Refer to DGR, 9.5.1.2, for guidance that addresses dangerous goods emergency response.

CGO 3.2.4 If the Operator transports revenue or non-revenue cargo and/or mail, and also transports dangerous goods, the Operator shall have procedures to ensure any package, overpack, freight container, or ULD containing dangerous goods is inspected and is not accepted, unless:

- i) Properly marked and labeled;
- ii) There is no leakage;
- iii) Its integrity has not been compromised. (GM)

Guidance

Detailed instructions for acceptance and handling of dangerous goods are contained in DGR Section 9. This information is not to be interpreted as requiring an operator to accept or transport a particular article or substance, or as preventing an operator from imposing special requirements on the transport of a particular article or substance.

CGO 3.2.5 If the Operator transports revenue or non-revenue cargo on or in ULDs, and also transports dangerous goods, the Operator shall have procedures to ensure ULDs containing dangerous goods have a dangerous goods tag that:

- i) Is marked with the class or division number(s) of such dangerous goods;
- ii) If a ULD contains packages bearing a “Cargo Aircraft Only” label, indicates the ULD can only be loaded onto a cargo aircraft. (GM)

Guidance

The need for procedures would normally apply to any operator that accepts dangerous goods for transport on or in ULDs to ensure:

- The types of dangerous goods contained in ULDs, as well as any associated restrictions, are accurately displayed on the exterior of the ULD;
- ULDs are only loaded onto aircraft that are compatible with the load and associated restrictions.

CGO 3.2.6 – 3.2.7 (Intentionally open)

CGO 3.2.8 If the Operator transports revenue or non-revenue cargo, and also transports dangerous goods, the Operator shall have a process to ensure, when dangerous goods hazard and handling labels are discovered to be lost, illegible or detached from shipments subsequent to the time of acceptance, such labels are replaced in accordance with the information provided on the Shippers Declaration for Dangerous Goods. Such requirement for the replacement of labels shall not apply where labels are found to be missing or illegible at the time of acceptance. (GM)

Guidance

Guidance may be found in DGR Section 9.

CGO 3.2.9 If the Operator transports revenue or non-revenue cargo, and also transports dangerous goods, the Operator shall have procedures that ensure English, in addition to the language required by the State of Origin, is used for markings and transport documents related to the shipment of dangerous goods. (GM)

Guidance

Refer to the IRM for the definition of *State of Origin*.

Guidance may be found in DGR Sections 2 and 7.

CGO 3.2.10 If the Operator transports revenue or non-revenue cargo, and also transports dangerous goods, the Operator shall have procedures that ensure dangerous goods are separated from other cargo or incompatible materials in accordance with published category restrictions. (GM)

Guidance

Loading requirements contained in DGR, 9.3.2 and Table 9.3.A, primarily address dangerous goods compatibility restrictions on an aircraft. Similar separation requirements are a consideration for stowage of these materials in the cargo building and during transport to the aircraft.

CGO 3.2.11 If the Operator transports revenue cargo, the Operator shall ensure, at locations where the operator accepts cargo shipments, notices providing information about dangerous goods transportation are prominently displayed. (GM)

Guidance

Where the acceptance of cargo is outsourced to a ground services provider, the provider is responsible for the display of dangerous goods information notices. However, ultimate

responsibility for the safe transportation of dangerous goods, whether cargo is accepted by the operator or a ground services provider, always remains with the operator.

CGO 3.2.12 If the Operator transports revenue or non-revenue cargo, and also transports dangerous goods, the Operator shall have procedures to ensure any dangerous goods shipment that appears to be damaged or leaking:

- i) Is not to be loaded on or into a ULD or delivered to an aircraft;
- ii) Is safely removed from the ULD (or other transport device) by the Provider or other relevant authority, and safe disposal arranged;
- iii) In the case of leakage, an evaluation is conducted to ensure the remainder of the shipment is in proper condition for transport by air and that no other package, cargo, ULD, other transport device has been contaminated or damaged.

CGO 3.2.13 If the Operator conducts cargo flights utilizing cargo aircraft, and also transports dangerous goods, the Operator shall have procedures to ensure packages or overpacks containing dangerous goods, and bearing a "Cargo Aircraft Only" label, except those specifically excluded, are transported on cargo aircraft **either**:

- i) In a Class C compartment, **or**
- ii) In a ULD container equipped with a fire detection/suppression system equivalent to that required by the certification requirements of a Class C compartment as determined by the relevant authority, **or**
- iii) In such a manner that in the event of an emergency involving such packages or overpacks, a crew member or other authorized person can access those packages or overpacks, and can handle and, where size and weight permit, separate such items from other cargo.

Guidance

Refer to the IRM for the definition of *Cargo Compartment*, which includes definitions of compartment types by classification.

CGO 3.2.14 If the Operator transports revenue or non-revenue cargo, and also transports dangerous goods, the Operator shall have procedures that ensure information on dangerous goods to be loaded on a flight is communicated to the load control system. Information to be communicated shall include the following:

- i) If applicable, Air Waybill number.
- ii) Proper shipping name and/or UN/ID number, and where required, technical name(s).
- iii) Classification, and for Class 1, division and compatibility group.
- iv) Packing group.
- v) Identified subsidiary risks.
- vi) For non-radioactive material, number of packages, exact loading location and, as applicable, net quantity or gross weight of each package, except:
 - a) for *UN 1845: carbon dioxide, solid (dry ice)*, UN number, proper shipping name, classification, total quantity in each aircraft hold and offload airport.
- vii) For radioactive material, number and category of packages, overpacks or freight containers, exact loading locations and, as applicable, transport index and dimensions for each package.
- viii) Any restriction for transport on cargo aircraft only.
- ix) Offload airport.

- x) If applicable, dangerous goods transported under a state exemption.
- xi) If applicable, ULD identification number(s).

Guidance

Refer to the IRM for the definition of *Load Control*.

CGO 3.2.15 – 3.2.16 (Intentionally open)

CGO 3.2.17 If the Operator transports revenue or non-revenue cargo and/or mail, the Operator shall have a process to ensure dangerous goods accidents or incidents are reported to the appropriate authorities of the State of the Operator and the state in which the accident or incident occurred, and such reports are in accordance with the reporting requirements of the appropriate authorities.

CGO 3.2.18 If the Operator transports revenue or non-revenue cargo and/or mail, the Operator shall have a process to ensure, when undeclared or mis-declared dangerous goods are discovered in cargo, a report is made to the appropriate authorities of the State of the Operator and the state in which the event occurred.

3.3 Live Animals and Perishables

CGO 3.3.1 If the Operator transports live animal and/or perishable cargo shipments, the Operator shall have procedures that ensure live animal and/or perishable cargo shipments are accepted and handled in accordance with requirements specified in the OM. (GM)

Guidance

Live animal handling procedures and specific responsibilities of an operator with regard to required documentation, acceptance, containers, animal welfare, compliance with all regulations, storage and loading and liability are addressed in the IATA LAR and IATA PCR. Additional requirements may be mandated by the State of Flight Departure, the State of Flight Arrival and/or the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

CGO 3.3.2 If the Operator transports live animal cargo shipments, the Operator *should* have procedures that ensure:

- i) The acceptance and handling of live animals is in accordance with requirements of the IATA Live Animal Regulations (LAR);
- ii) The IATA Live Animals Acceptance Check List, or equivalent, is utilized for the acceptance of live animal shipments. (GM)

Guidance

The IATA Live Animals Acceptance Checklist is recommended as an effective reference in assisting shippers, agents and operators in preparing live animal shipments for air transportation.

CGO 3.3.3 If the Operator transports perishable cargo shipments, the Operator *should* have procedures that ensure acceptance and handling of perishable cargo shipments is in accordance with requirements of the IATA Perishable Cargo Regulations (PCR) and other applicable regulations. (GM)

Guidance

The handling procedures for handling perishable goods and specific responsibilities of an operator with regard to documentation, packaging and classification are addressed in the PCR. Additional requirements may be mandated by local regulatory requirement.

CGO 3.3.4 If the Operator transports live animal cargo shipments, the Operator *should* have procedures that ensure live animal shipments are accompanied by the shipper's certification or equivalent, as well as other required documents. (GM)

Guidance

Documentation required for live animal shipments includes the shipper's certification, air waybill and, in some situations, CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora). Some states have additional requirements, which may include health certificates, export or import permits. Refer to guidance contained in the IATA LAR, 2.2.

CGO 3.3.5 If the Operator transports perishable cargo shipments, the Operator *should* have procedures that ensure the acceptance and handling of perishable cargo shipments are in accordance with requirements of applicable authorities. (GM)

Guidance

Documentation requirements for perishables are detailed in the PCR. Additional requirements may be mandated by local regulatory authorities.

3.4 Other Special Cargo

CGO 3.4.1 If the Operator transports special cargo shipments such as human remains, valuable cargo, fragile goods, oversized cargo and heavy cargo, the Operator shall have procedures that ensure such special cargo shipments are accepted and handled in accordance with standards specified in the OM. (GM)

Guidance

Guidance for the handling of human remains can be found in the IATA TACT Rules and the IATA Airport Handling Manual.

Oversized and heavy cargo refers to items that are larger or heavier than can be accommodated on or in a ULD. Standards for handling these items are found in the OM as well as in the Weight and Balance Manual for each aircraft type.

Prior arrangements and specific handling requirements generally apply to all types of special cargo and are incorporated into the OM, including those items identified in this provision, but also emergency medical supplies, live human organs and diplomatic shipments.

3.5 Unit Load Device (ULD)

CGO 3.5.1 If the Operator transports revenue or non-revenue cargo utilizing ULDs, the Operator shall ensure ULDs, whether loaded or empty, are inspected for airworthiness and serviceability when received or prior to acceptance for transport in accordance with procedures specified in the OM. (GM)

Guidance

Certified and non-certified ULDs have different specifications and documentation requirements. Differences in damage limitations also occur between ULDs of the same manufacturer as well as between the different manufacturers. The maximum allowable damage for each specific ULD is stated in the applicable Component Maintenance Manual (CMM) issued by the Manufacturer. Some airlines impose more stringent limits than the CMM. These differences may vary in each state or flight safety jurisdiction. ULDs, including containers, pallets and nets or straps that do not comply with the appropriate regulations are not transported on a commercial flight. An exception may be made for damaged ULDs being transported to a repair facility, but only if there is no danger of damage to the aircraft.

Non-certified ULDs are not considered removable aircraft holds and may only be loaded into aircraft holds that are compartment restraint certified.

Guidance may be found in the applicable chapter of the IATA ULD Technical Manual (UTM).

CGO 3.5.2 If the Operator transports revenue or non-revenue cargo utilizing ULDs, the Operator shall have procedures that ensure ULDs, when accepted and/or loaded for transport, meet safety requirements pertaining to the loading and securing of cargo. (GM)

Guidance

Detailed instructions for the safe loading and securing of cargo are contained in the UTM. The data includes the use of pallets, nets, straps and containers, and also information regarding ULD center of gravity (CG) offset limits.

Each state may have additional or varying regulations and specifications.

3.6 Combi Aircraft Operations

CGO 3.6.1 If the Operator conducts combi aircraft operations, the Operator shall ensure procedures are in place for loading such aircraft, and such procedures shall be in accordance with, as applicable, requirements of the aircraft manufacturer, supplemental type certificate (STC) holder and/or data approved by the Authority. (GM)

Guidance

Refer to the IRM for the definitions of *Cargo Restraint System*, *Combi (Combined Passenger and Cargo) Aircraft Operations* and *Supplemental Type Certificate (STC) Holder*.

Procedures would typically ensure passengers seated on the same deck and forward of the cargo are protected through provision of an adequate buffer and/or cargo restraint system.

Table 7.1 – Operations Manual Content Specifications

The content of the Operations Manual shall contain standards and guidance that address the acceptance and handling of revenue cargo, to include, as applicable to type(s) of shipments transported by the Operator:

- i) Compliance or conformity with:
 - a) Applicable laws, regulations and rules, including civil aviation cargo security programs;
 - b) Industry standard operating procedures for each aspect of cargo acceptance and handling.
- ii) Response to abnormal or emergency situations:
 - a) Leakage or spillage of suspected dangerous goods;
 - b) Suspected bomb or explosives;
 - c) Damaged or leaking cargo;
 - d) Other emergencies.
- iii) Cargo acceptance and handling, including conditions of carriage:
 - a) General cargo;
 - b) Security requirements;
 - c) Dangerous goods;
 - d) Live animals;
 - e) Other special cargo:
 - Perishable cargo;
 - Human remains;
 - Outsized and heavy cargo;
 - Fragile goods.
 - f) Mail;
 - g) Valuable cargo;
- iv) Requirements associated with the transport of ULDs.

SECTION 8 – SECURITY MANAGEMENT (SEC)

Applicability

Section 8 addresses the management of operational security in accordance with requirements of an airline Security Program. This section is applicable to all operators.

Individual provisions or sub-specifications within a provision that:

- Begin with a conditional phrase (“If the Operator...”) are applicable if the operator meets the condition(s) stated in the phrase.
- Do not begin with a conditional phrase are applicable to all operators unless determined otherwise by the Auditor.

Where operational security functions are outsourced to external service providers, an operator retains responsibility for the conduct of such functions and will have processes to monitor applicable external service providers in accordance with SEC 1.11.2 to ensure requirements that affect the security of operations are being fulfilled.

In the case of provisions that specify operational security functions conducted by external organizations not under the control of the Operator, the Operator will ensure security controls are implemented as necessary to prevent unlawful interference.

General Guidance

Definitions of technical terms used in this ISM Section 8, as well as the meaning of abbreviations and acronyms, are found in the IATA Reference Manual for Audit Programs (IRM).

1 Management and Control

1.1 Management System

SEC 1.1.1 The Operator shall have a security management system that ensures:

- i) Supervision and control of functions and activities associated with the Security Program;
- ii) Compliance with security standards of the Operator and requirements of the civil aviation security program of the State and, if applicable, other relevant states. (GM)

Guidance

Refer to the ITRM for the definitions of *Operator*, *Security Management System (SeMS)*, *Security Program* and *State*.

An operator’s security management system is structured to ensure the most efficient and effective application of the Security Program.

The management system is typically documented in the form of a manual or other appropriate controlled medium, and includes detailed descriptions of the structure, individual responsibilities, available resources and processes in place to effectively manage security operations and ensure operator is in compliance with the requirements of the civil aviation security program of the State and, if applicable, other relevant states.

A security management system that is in conformity with the IOSA Standards and Recommended Practices (ISARPs) will generally meet the criteria for a *Security Management System (SeMS)* as documented in the IATA Security Manual. SeMS provides an operator with a structured and standardized approach to the management of operational security.

Core elements and sub-elements of a security management system are generally considered to include the following:

- Senior management and corporate commitment
 - Appointment of a Head of Security
 - Security department organizational structure
- Resource Management
 - Staff selection process
 - Staff performance assessment process
 - Establishment of a security personnel training program
 - Security awareness training program
 - Management of service providers
- Threat Assessment and Risk Management Activity
 - Identification of risks and threats
 - Threat assessment
 - Risk management
- Management of Emergencies and Incidents (Resilience)
 - Emergency preparedness and response
 - Crisis and contingency management plans
 - Security incident management
- Quality Control and Assurance
 - Corrective actions mechanisms
 - Oversight of external service providers
- Aviation Security Program
 - Documented security processes and procedures

Individual airlines may group or break down the above elements and sub-elements in different ways, in accordance with their own SeMS structure.

Refer to Guidance associated with ORG 1.1.1 located in ISM Section 1.

SEC 1.1.2 The Operator shall have a management official designated as the head of security with direct access to the highest level of management within the organization. Such management official, regardless of reporting structure, shall have the responsibility, and thus be accountable, for ensuring the implementation and maintenance of the Security Program. (GM)

Guidance

Refer to the ITRM for the definitions of *Accountability* and *Responsibility*.

Based on the size, structure and complexity of an operator's organization, the position of head of security could be filled by a management individual that has responsibilities that are in addition to security. However the organization is structured, it is important that one management official is the designated focal point for security management on behalf of the operator.

To be effective, the head of security typically has a professional security background and/or be familiar with aircraft and airline operations.

The head of security would typically:

- Have a direct line of access to the chief executive and board of directors for communicating critical security information should the need arise;
- Be able to carry out assigned responsibilities as spelled out in the Security Program without hindrance.

The head of security is generally assigned responsibility for:

- Formulation of an overall security policy for senior management acceptance;
- The development and promulgation of security standards and practices to provide line management with direction and control;
- Establishing a clear order of command in the security structure;
- Ensuring effectiveness of security program by regular evaluation and inspection;
- Effective liaison with governments, authorities and law enforcement agencies;
- Ensuring an effective risk analysis, threat assessment and response capability;
- Initiating special security measures during periods/instances of increased threat;
- Providing specialized advice to senior and line management in all security functions, protection, intelligence, information and investigation.

An operator may choose to assign responsibility for some of the functions listed above to other senior managers that have an equivalent level of authority.

SEC 1.1.3 The Operator *should* have a corporate security policy that states the commitment of the organization to a culture that has security as a fundamental operational priority. Such policy *should* be communicated throughout the organization and commit the organization to:

- i) The provision of resources necessary for the successful implementation of the policy;
- ii) Compliance with applicable regulations and standards of the Operator;
- iii) The promotion of security awareness and the establishment of a security culture;
- iv) The establishment of security objectives and security performance standards;
- v) Continual improvement of the security management system;
- vi) Periodic review of the policy to ensure continuing relevance to the organization. (GM)

Guidance

The security policy of an organization typically expresses the clear and genuine commitment by senior management to the establishment of a security culture. Such policy also defines the organization's fundamental approach toward security and how security is expected to be viewed by employees and external service providers.

Additional elements incorporated into a security policy might include:

- The adoption of industry best practices for security management;
- Continual management review and improvement of the SeMS and security culture;
- The development of objectives for the measurement of security performance;
- Imperatives for including operational security in the description of duties and responsibilities of senior and front line management;
- The promotion of a non-punitive reporting system that encourages the reporting of inadvertent human error;
- Communication processes that ensure a free flow of information throughout the organization.

1.2 Security Program

SEC 1.2.1 The Operator shall have a formal Security Program that includes:

- i) The requirements of the civil aviation security program of the State;
- ii) Applicable requirements of other states where operations are conducted;
- iii) The security policy and standards of the Operator. (GM)

Guidance

An operator is required to have a Security Program in order to:

- Protect customers, personnel and assets from any act of unlawful interference or related unlawful act;
- Provide directions on security measures required;
- Comply with regulatory requirements.

The Security Program provides a structure for security policy and awareness, which flows from senior management to all levels of operational personnel within the organization. The documented Security Program, as a minimum, specifies or makes reference to other documents that specify:

- Airline security policy and objectives;
- Means for achieving these objectives including establishing a security department;
- Structure and responsibilities of the security department;
- Security responsibilities of operational personnel, handling agents and other contractors;
- Minimum and contingency protective measures;
- Risk analysis, threat assessment and counter measures.

Some security programs may be constructed so as to meet multiple local regulations. In such cases, the program may not actually define security policies and standards, but rather reference various local requirements contained in separate documents.

In addition to stating responsibilities of the designated head of security, the Security Program specifies responsibilities of other personnel that perform operational security functions within the organization.

1.3 Authorities and Responsibilities

SEC 1.3.1 The Operator shall ensure the security management system defines the authorities and responsibilities of management and non-management personnel as defined under the Security Program, and specifies:

- i) The levels of management with the authority to make decisions that affect the operational security;
- ii) Responsibilities for ensuring security functions are performed and procedures are implemented in accordance with applicable regulations and standards of the Operator. (GM) ◀

Guidance

Refer to Guidance associated with ORG 1.3.1 located in ISM Section 1.

SEC 1.3.2 The Operator shall have a process for delegation of duties within the security management system that ensures managerial continuity is maintained when managers with operational security responsibilities are absent from the workplace. (GM) ◀

Guidance

Refer to Guidance associated with ORG 1.3.2 located in ISM Section 1.

Such plan addresses responsibilities associated with management system positions (not individuals) under the Security Program and ensures proper management of operational security functions is always in place.

SEC 1.3.3 The Operator shall ensure a delegation of authority and assignment of responsibility within the security management system for liaison with applicable aviation security authorities and other relevant external entities. (GM) ◀

Guidance

Although motives might be different, all stakeholders share a similar interest in ensuring the security of the aviation industry. However, the potential problem of gaps or overlap in responsibilities and/or coverage may exist when more than one entity is handling security. It is crucial for state, airport and airline security officials to establish clear jurisdictional boundaries to ensure all entities understand where their respective jurisdictions begin and end.

Whereas gaps in security create obvious problems and expose the entire aviation infrastructure to threats, the presence of unnecessary overlap by different security groups can also lead to problems. Without proper coordination, the presence of multiple entities providing security services could lead to inaccurate assumptions that might, in fact, result in unintended gaps in the security web due to a reduction of services. Also, multiple groups doing the same job could lead to conflicts of authority, which would detract from the required focus on aviation security.

It is important that there is effective communication between airport security and airline security management. An Airline Operators Committee typically offers a viable platform for airlines and an airport authority to express their respective views on security and identify areas of deficiency. Such committee might also serve as a useful forum for coordination between airlines and airports to develop and implement a seamless security system with no gaps and appropriate overlap.

With regards to state involvement, the creation of an Airport Security Committee (ASC) might be suggested since the group would focus solely on security and address only security issues. An ASC typically reports (formally or informally) to the National Civil Aviation Security Committee.

Air carriers are advised to participate in both the Airline Operators Committee and the ASC, either directly or via representation by other carriers or stakeholders.

1.4 Communication

SEC 1.4.1 The Operator shall have a communication system that enables an exchange of information relevant to operational security throughout the management system and in all locations or areas where operations are conducted. (GM) ◀

Guidance

Because of the de-centralized nature of an operator's business, it may be advisable to develop, at least in part, an electronic system for the dissemination of security information. Any system would have to be able to address the varying degree of urgency with which security information needs to be circulated.

Security Intranet Site

A corporate security department website is one method of disseminating security information to operational personnel. Different levels of access would be required in order to control the access to restricted information to those with a "need to know."

Corporate Manual System

An operator's manuals and regulations are the formal system of coordinating and communicating the policies, procedures and significant guidance necessary to ensure the operator's mission is carried out in a consistent and integrated manner.

Security Bulletins

Security bulletins, typically issued by the corporate security department, might specify action or contain general informational. Issuance of bulletins electronically (e.g. email) is an efficient means of ensuring all personnel with a "need to know" are made aware of new or amended security information in a timely manner.

Information included in a security bulletin might include:

- Subject;
- Issuance date;

- Effective date (if applicable);
- Expiration date (if applicable);
- Informational content;
- When applicable, action required;
- Response acknowledging receipt and implementation of required actions if required.

Refer to Guidance associated with ORG 1.4.1 located in ISM Section 1.

1.5 Provision of Resources

SEC 1.5.1 The Operator shall ensure the existence of the necessary facilities, workspace, equipment and supporting services, as well as work environment, to satisfy operational requirements of the Security Program. (GM) ◀

Guidance

Refer to Guidance associated with ORG 1.6.1 located in ISM Section 1.

SEC 1.5.2 The Operator shall ensure management and non-management positions that require the performance of functions within the scope of the Security Program, to include positions within the organization of the Operator and, if applicable, service providers selected by the Operator to conduct operational security functions, are filled by personnel on the basis of knowledge, skills, training and experience appropriate for the position. (GM) ◀

Guidance

To ensure appropriate credentials for personnel selected to security positions, a minimum level of competence, experience, skill and required training is typically specified in the position selection prerequisites. In addition, a process normally exists to verify that personnel currently holding positions within the Security Program continue to meet stated requirements.

Refer to Guidance associated with ORG 1.6.2 located in ISM Section 1.

SEC 1.5.3 The Operator shall ensure a process has been established that requires operational security personnel in the organization of the Operator and, if applicable, service providers selected by the Operator to conduct operational security functions, to be subjected to pre-employment and recurring background checks in accordance with requirements of applicable aviation security authorities. The requirement for a background check shall be applicable to personnel who:

- i) Engage in the implementation of security controls;
- ii) Have unescorted access to the security restricted area of an airport. (GM)

Guidance

Refer to the ITRM for the definition of *Security Control*.

A background check is not limited to a focus on the criminal past of a candidate, but is more comprehensive, to include, as a minimum:

- Criminal record check;
- Previous employment history;
- Personal references;
- Education and training.

National legislation on civil liberties and protection of personal information will greatly influence the limits placed on an employer when performing pre-employment background checks. An employer is not permitted to deviate from the laws of the country where the hiring process is taking place.

In the pre-employment process, it is important for an operator to explain to a candidate what information will be researched, and to avoid future legal action, a candidate typically signs a waiver that authorizes the pre-employment investigation. Refusal of such consent ought to disqualify a candidate from consideration for a position.

In order to facilitate the background check process, the application form to be completed by a candidate for a position would include, as a minimum:

- Full name;
- Date and place of birth;
- National identification number, if applicable (e.g. social security or similar number);
- Previous residence (last 10 years);
- Previous employers, to include:
 - Complete address;
 - Immediate supervisor;
 - Reason for leaving.
- Details of court convictions, including road traffic offenses or violations.

1.6 Documentation System

SEC 1.6.1 The Operator shall have a system for the management and control of documentation and/or data used directly in the conduct or support of operations under the Security Program, to include:

- i) A means of identifying the version of operational security documents;
- ii) A controlled distribution process that ensures on-time availability of the current version of the Security Manual in areas of the operation where security measures are implemented;
- iii) Procedures for the identification, dissemination and disposal of security sensitive information;
- iv) Review and revision as necessary to maintain the currency of information contained in documents;
- v) A method for issuing temporary or emergency revisions;
- vi) Retention of documents that permits easy reference and accessibility;
- vii) Identification and control of obsolete and/or reproduced documents;
- viii) Retention and dissemination of documentation received from external sources, to include manuals and documents from applicable regulatory authorities. (GM) ◀

Guidance

Refer to Guidance associated with ORG 2.1.1 located in ISM Section 1.

SEC 1.6.2 If the Operator utilizes an electronic system for the management and control of any documentation used directly in the conduct of operations under the Security Program, the Operator shall ensure the system provides for a scheduled generation of back-up files for such documents. (GM) ◀

Guidance

Refer to Guidance associated with ORG 2.1.2 located in ISM Section 1.

SEC 1.6.3 The Operator shall have processes to ensure documentation used in the implementation of the Security Program:

- i) Is readily identifiable and accessible to applicable operational personnel;

- ii) Contains legible and accurate information;
- iii) Is presented in a format appropriate for use by operational personnel. ◀

SEC 1.6.4 If the Operator has external service providers conduct outsourced operational security functions, the Operator shall have a process to ensure such external service providers receive information regarding security directives and instructions as soon as possible and in a manner that meets requirements of the Security Program.

1.7 Security Manual

SEC 1.7.1 The Operator shall have a Security Manual that provides guidance for the implementation of the Security Program(s), the content of which shall address areas specified in **Table 8.1**. The Security Manual may be issued in separate parts and shall contain the policies, procedures and other guidance or information to:

- i) Ensure applicable personnel have the direction necessary to implement security measures;
- ii) Provide additional security measures that can be implemented during a time of an increased threat as determined by a state;
- iii) Meet requirements of the civil aviation security program of all states served by the Operator. (GM)

Guidance

An operator may have more than one security manual (e.g. where flights are conducted into a particular state that mandates a unique security program that is applicable only to operations in that state).

Table 8.1, item x), refers to security controls specified in the Security Manual that would be implemented to identify items in carry-on or hold baggage that could pose a risk to aircraft operations. Such items would include any device capable of generating electromagnetic pulse or other malevolent signals that could interfere with critical aircraft electrical and/or navigation systems. Also included may be items that could be used as a timer, power supply or detonator for an improvised explosive device.

During times of elevated threat levels, security controls may be applied to certain items that are innocuous by themselves (e.g. mobile phones, watches), but become serious threats if found with other materials that could be put together to form an improvised explosive device.

Table 8.1, item xiii), refers to technology or equipment specified in the Security Manual for use in screening processes. In certain locations, particularly foreign stations, where the implementation of security functions is the responsibility of a third party, the operator will still be required to ensure equipment and/or technology used by such third parties is compliant with requirements of the operator and State of the Operator.

1.8 Records System

SEC 1.8.1 The Operator shall have a system for the management and control of operational security records to ensure the content and retention of such records is in accordance with requirements of the aviation security authority of the State, as applicable, and to ensure operational records are subjected to standardized processes for:

- i) Identification;
- ii) Legibility;
- iii) Maintenance;
- iv) Retrieval;
- v) Protection and security;

- vi) Disposal, deletion (electronic records) and archiving. (GM) ◀

Guidance

Some security records could contain sensitive or restricted information that, while not classified, could be detrimental to aviation security if publically released. Such restricted information is typically defined, usually in conjunction with specific handling procedures, by the State or the operator.

Typical handling procedures for records containing sensitive or restricted information ensure:

- When not in the physical possession of an authorized person, records are stored in a secure container such as a locked file cabinet or drawer;
- A review is conducted periodically (typically once per year) to identify records that are no longer valid and to ensure such records are destroyed in a manner that precludes recognition or reconstruction of the information.

Refer to Guidance associated with ORG 2.2.1 located in ISM Section 1.

SEC 1.8.2 If the Operator utilizes an electronic system for the management and control of records, the Operator shall ensure the system provides for a scheduled generation of back-up record files. (GM) ◀

Guidance

Refer to Guidance associated with ORG 2.2.2 located in ISM Section 1.

1.9 Management Review

SEC 1.9.1 The Operator *should* have a security review committee for the purpose of ensuring:

- i) Senior management oversight of security in operations;
- ii) Continual improvement of the security management system;
- iii) Security threats are being identified and controlled;
- iv) The promotion of security awareness. (GM)

Guidance

A security review committee, which might have a different name with each operator, would ideally be chaired by the Accountable Executive or designated security official, and typically includes the head of security, other members of senior management and representatives from the major operational areas.

A security review committee typically meets at least every two months to review the security performance in operations, address security concerns, provide feedback and instructions to the operating units, and set priorities for sub-teams. It may be useful to have more frequent meetings in the first year of establishment to create an awareness of the committee throughout the organization.

1.10 Quality Assurance/Quality Control Programs

Quality Assurance

SEC 1.10.1 The Operator shall have a quality assurance program that provides for the auditing and evaluation of the management system and operational security functions at planned intervals to ensure the organization is:

- i) Complying with the Security Program;
- ii) Achieving Security Program objectives;
- iii) Properly applying security standards. (GM) ◀

Guidance

Refer to the ITRM for the definition of *Quality Assurance*.

The person responsible for the security operation is accountable for the implementation of a quality assurance program, which includes the various standards set out within an operator's Security Program. The quality assurance program takes into consideration the standards set by other states to achieve specific requirements as the result of their respective risk analyses and threat assessments.

Quality Assurance refers to all forms of security protection and prevention that involve the operator, handling agents, personnel, passengers and the carriage of cargo and aircraft stores. It also incorporates an examination of the actions or inactions of airports and other agencies, which, although not directly "touching" the airline, could impact on the security of the operator.

To achieve the set objectives of the Security Program, it is necessary to introduce a means of measuring the efficiency and effectiveness of the security operation and to note any deficiencies.

Quality assurance can be achieved by conducting security audits of all line operations at base and overseas stations. There are two main purposes for conducting a security audit:

- To ensure operator personnel, handling agents and contractors are properly implementing the Security Program;
- To ensure the Security Program is achieving the set objectives.

Audits may be complemented by quality control mechanisms, to include:

- Security surveys to identify the operator security needs;
- Security tests to evaluate the effectiveness of specific aviation security measures and procedures;
- Security exercises to evaluate the effectiveness of the emergency response plan.

Refer to Guidance associated with ORG 3.4.1 located in ISM Section 1.

SEC 1.10.2 The Operator shall have a process for addressing findings resulting from audits of operational security functions that ensures:

- i) Identification of root cause(s);
- ii) Development of corrective action, as appropriate, to address findings;
- iii) Implementation of corrective action in appropriate operational security area(s);
- iv) Evaluation of corrective action to determine effectiveness. ◀

SEC 1.10.3 The Operator shall have a process to ensure significant issues arising from quality assurance audits of operational security functions are subject to a regular review by senior security management. (GM) ◀

Guidance

The Head of Security is responsible for the distribution of audit reports, the content of which is sensitive in nature. Reports are generally made available only to senior managers who have security responsibilities. Other employees, even those who have duties in security functions, would not have access to security reports. However, to ensure employee awareness of security issues, the Head of Security would normally provide report summaries.

The summaries would include the strength and weaknesses of each respective area audited, to include recommendations from the auditors. Also included would be an overall management evaluation of the audit as well as an assessment of the performance of the audited area. To ensure balance, both positive and negative aspects are included.

Audit summaries would also include comments regarding the likelihood of changes to security measures based on the audit results, to include an estimated time period for the implementation of such changes.

Auditor recommendations contained in a report provide the basis for possible changes within the system. However, for various reasons, the adoption or implementation of recommendations made by auditors may not always be feasible. Therefore, the determination of a need for corrective or preventive action, and the actual implementation of such action, would typically be coordinated between the Head of Security and those operational managers directly responsible for the safety and security of operations.

Refer to Guidance associated with ORG 3.4.4 located in ISM Section 1.

Quality Control

SEC 1.10.4 The Operator shall have a process for conducting periodic or event-driven security surveys that identify needs and weaknesses of the Security Program, including operational security procedures and infrastructure. (GM)

Guidance

A security survey is method for evaluating airport and airline operations to determine their vulnerability to acts of unlawful interference, such as hijacking, sabotage or terrorist attack, and to develop recommended protective measures based on the identified needs and commensurate with the threat level.

Surveys of security measures are necessary to ensure the adequacy and continued effectiveness of security programs, and further ensure such measures and procedures remain in compliance with the appropriate legislation.

Surveys conclude with the production of a comprehensive written confidential technical report outlining in detail the findings and recommendations of the survey.

The depth and scope of the survey typically encompasses all features that affect aviation security.

SEC 1.10.5 If required by the aviation security authority, the Operator shall have a process for conducting security tests that assess effectiveness and proper implementation of security controls of which the Operator is in direct control. (GM)

Guidance

A security test is a simulated act of unlawful interference against existing security measures, carried out covertly by persons with an inert explosive device or weapon concealed in their baggage or on their person. Tests are also sometimes performed in cargo shipments and aircraft.

A security test only demonstrates whether a security measure or control was effective as it was being applied at the place and time of the test. It is often difficult to determine with confidence whether test “failures” are due to flaws in a security measure, inadequate application of a security measure (e.g., poor supervision, insufficient training) or a combination of both. Therefore, the use of tests as a means of improving security compliance could be problematic.

Tests may be used for ensuring alertness of security personnel, which might be considered with caution because the results of testing could degrade the motivation of such personnel.

An effective testing program ensures the administration of tests:

- Are within the State’s law;
- Do not jeopardize the safety of people;
- Do not jeopardize the safety of aircraft or airport facilities;
- Do not damage property;
- Do not alarm or inconvenience the public and persons or organizations not being tested;

- Includes notification of applicable police authorities and other security agencies.

Furthermore, tests are conducted:

- In accordance with a schedule;
- Without prior notification to the operating or supervisory personnel (management, however, is made aware);
- Utilizing clearly marked test pieces (decoys);
- By qualified personnel who are in possession of documentation authorizing such testing.

Technology advances have made it possible to test screening equipment and the performance of equipment operators without physically introducing threat items (or decoys). Threat Image Projection (TIP) is a software program that can be installed in X-ray screening equipment. The TIP program has the capability for inserting simulated images of threat items into the actual X-ray image display, thus providing a test for the equipment operator in detecting the item as if it were a real threat item.

SEC 1.10.6 If required and/or authorized by the aviation security authority, the Operator shall have a process to perform or participate in periodic operational security exercises in order to:

- i) Evaluate the effectiveness of procedures designed for response to security incidents;
- ii) Practice implementation of security procedures by applicable personnel;
- iii) Evaluate the usefulness and serviceability of security equipment. (GM)

Guidance

To ensure the effectiveness of the security emergency response plan:

- A full-scale airport emergency exercise is conducted at intervals recommended not to exceed two years;
- Partial emergency exercises in intervening years are conducted to ensure any deficiencies found during the previous full-scale exercise have been corrected;
- Deficiencies discovered as a result of any implementation of the plan, whether simulated or actual, are analyzed and corrected.

The conduct of a full-scale airport emergency exercise requires cooperation and approval from airport and possibly other relevant authorities. If obtaining such approval is not possible, an operator may revert to an alternate process, such as a table-top exercise, to meet this requirement.

1.11 Outsourcing and Product Quality Control

SEC 1.11.1 If the Operator has external service providers conduct outsourced operational security functions, the Operator shall have a process to ensure a contract or agreement is executed with such external service providers. (GM) ◀

Guidance

Refer to the ITRM for the definition of *Outsourcing*.

The process ensures compliance with formal instructions that have been supplied to service providers pursuant to contractual obligations. Contractors and/or service providers that deliver security services required under the Security Program receive planned inspections and/or audits by the operator.

An operator obtains a written undertaking that ensures service providers are familiar and comply with standards of the operator and local regulatory requirements.

Contracts or agreements may include measurable performance specifications (perhaps in a supplemental service level agreement) that can be monitored by the Operator to ensure requirements of the Security Program are being fulfilled by a service provider.

Security training by personnel of service providers is typically one particular area of focus by an operator.

The use of a registered ISAGO provider typically signifies that the provider is in conformity with basic industry security requirements.

Refer to Guidance associated with ORG 3.5.1 located in ISM Section 1.

SEC 1.11.2 If the Operator has external service providers conduct outsourced operational security functions, the Operator shall have processes to monitor such external service providers to ensure compliance with:

- i) The Security Program of the Operator;
- ii) Requirements of applicable aviation security authorities. (GM) ◀

Guidance

In general, external service providers, in delivering services for an operator, would be required to comply with security regulations applicable at the location where security operations are conducted. Examples of activities that might be used to verify such compliance include:

- Periodic quality assurance audits of providers conducted by the operator using either corporate or local resources;
- Reports submitted to the operator by the provider detailing self-audit schedules and results;
- Quality control functions (e.g. security surveys/tests) conducted jointly by the operator and provider.

The use of a registered ISAGO provider typically signifies that the provider is in conformity with basic industry security requirements.

Refer to Guidance associated with ORG 3.5.2 located in ISM Section 1.

SEC 1.11.3 (Intentionally open)

SEC 1.11.4 This Provision is suspended while under the IOSA Standards Special Review Process, as per IPM ED 4, Section 1, Figure 1.4.

SEC 1.11.5 The Operator *should* have processes to ensure equipment or other operational products related to the implementation of security controls that are purchased or otherwise acquired from an external vendor or supplier meet the product technical requirements specified by the Operator or relevant states prior to being used in the conduct of operations under the Security Program. (GM) ◀

Guidance

Equipment used to implement security controls typically must be approved or certified by the State of the Operator or the state where the equipment will be operated.

Refer to Guidance associated with ORG 3.6.1 located in ISM Section 1.

1.12 Operational Reporting

SEC 1.12.1 The Operator *should* have an operational reporting system that encourages and facilitates personnel to report security incidents and threats, identify security deficiencies, and raise security concerns. (GM) ◀

Guidance

Refer to the ITRM for the definition of *Security Threat*.

Frontline personnel, such as flight or cabin crew members, maintenance technicians and ground handling personnel are exposed to security situations as part of their everyday activities. An operational security reporting system provides such personnel with a means to report real or potential security threats or any other security concerns so they may be brought to the attention of the head of security and other relevant managers.

The effectiveness of a reporting system is determined by a basic requirement for safeguarding information. Typically, individuals will continue to provide information only when there is confidence that such information will be used only for the purpose of improving operational security, and will never be compromised or used against them.

A system that encourages and promotes reporting from personnel might include:

- A process that provides absolute protection of confidentiality;
- A process that provides for review by corporate security personnel;
- An articulated policy that encourages reporting of security incidents or events, even if resulting from human error;
- A shared responsibility between personnel (or, if applicable, respective professional associations) and management to promote the confidentiality of the reporting system;
- A process for secure de-identification of reports;
- A tracking process of action taken in response to reports;
- A process to provide feedback to the reporter, when appropriate;
- A communication process for ensuring front line operational personnel, as well as other relevant personnel, are apprised of potential security issues through dissemination of de-identified report information.

Refer to ORG 3.1.3 and ORG 3.1.4 located in ISM Section 1, which address operational safety reporting systems.

SEC 1.12.2 The Operator *should* have a process to ensure security incidents and acts of unlawful interference that have been reported by personnel in accordance with SEC 1.12.1 are reviewed by operational and security management to ensure:

- i) Root cause is identified;
- ii) Corrective action is determined;
- iii) When applicable, corrective action is implemented and monitored to ensure effectiveness in preventing future incidents.

Guidance

An effective system provides for a review and analysis of each report to determine whether a real security threat or deficiency exists, and if so, ensures development and implementation of appropriate action by responsible management to correct the situation.

2 Training and Qualification

2.1 Training Program

SEC 2.1.1 The Security Program of the Operator shall specify a security training program that includes initial and recurrent training, which shall be in accordance with requirements of the civil aviation security program of the State and applicable requirements of other states where operations are conducted. The security training program shall have a balanced curriculum of theoretical and practical training to ensure:

- i) Personnel, employed by or under the control of the Operator who implement security controls, have the competence to perform their duties;
- ii) Crew members and frontline ground handling personnel are able to act in the most appropriate manner to minimize the consequences of acts of unlawful interference and/or disruptive passenger behavior. (GM)

Guidance

Intensive training for personnel who are employed within the security organization of an operator will, in addition to their general experience, enable them to develop the expertise required to advise line management on all aspects of the security program. There are several classifications of aviation security training:

Personnel Training

This may be sub-divided into training for line managers/supervisors, aircrew, ramp workers, cargo personnel and other personnel who are directly involved in the implementation of security measures and thereby require an awareness of obligations to the Security Program.

Crew Training

In the past, the focus of crew security training in response to an unlawful seizure (hijacking) of an aircraft was passive resistance, delay and compliance with the demands of hijackers. Today, with the emergence of a "new breed" of suicide terrorists who intend to seize an aircraft and use it as a weapon of mass murder, crew security training focuses on the necessity for the flight crew to maintain control of the flight deck.

The security training program is typically integrated into the normal training curriculum for operational personnel, and need not be stand-alone training.

SEC 2.1.2 If the Operator has operational security functions conducted by external service providers selected by the Operator (outsourcing), the Operator shall have a process to ensure such external service providers have a security training program that is acceptable to the Operator and in accordance with training requirements of:

- i) The Security Program of the Operator;
- ii) The civil aviation security program of the State and, if applicable, other states where operations are conducted.

SEC 2.1.3 The Operator shall ensure personnel who perform security functions, crew members and appropriate operational personnel, as specified in SEC 2.1.1, complete initial security training prior to being assigned to operational duties that involve aviation security responsibilities.

SEC 2.1.4 The Operator shall ensure personnel who perform security functions, crew members and appropriate operational personnel, as specified in SEC 2.1.1, complete recurrent security training on a frequency in accordance with requirements of the security program of the State and, if applicable, other states where operations are conducted, but not less than a frequency specified by the Operator as necessary to maintain effectiveness in performing operational duties that involve aviation security responsibilities.

SEC 2.1.5 If the Operator manages or operates a security screening system, the Operator shall ensure personnel who manage or operate the screening system:

- i) Are certified in accordance with requirements of the applicable aviation security authority;
- ii) Complete initial and recurrent training, which shall include training in the identification of explosives, weapons or other dangerous items or devices.

SEC 2.1.6 The security training program of the Operator shall include a process for reviewing and updating or revising security training courses to ensure:

- i) Continual improvement of curriculum and content and applicability to the operational environment;
- ii) Incorporation of regulatory amendments or operational changes.

SEC 2.1.7 The Operator shall ensure the completion of required security training by operational personnel is documented and retained in a records system in accordance with SEC 1.8.1.

SEC 2.1.8 The Operator shall ensure operational personnel complete security awareness training that focuses on preventative measures and techniques in relation to passengers, baggage, cargo, mail, equipment, stores and supplies intended for transport on aircraft, as applicable, and permits such personnel to contribute to the prevention of acts of sabotage and other forms of unlawful interference. (GM)

Guidance

Security awareness training applies to the protection of assets from internal and external interference and the necessity of ensuring all personnel have a positive attitude to security. The focus of training to achieve such awareness will vary by region or company and may be influenced by cultural, religious and other factors. Such training is typically tailored to promote an organizational security culture and to be effective in the environment in which it is to apply. Some operators, depending on the individual organizational structure, may find it more appropriate to have multiple security awareness training courses developed specifically for each operating area.

3 Security Operations

3.1 Access Control

SEC 3.1.1 The Operator shall ensure an identification verification system is in place that prevents personnel and vehicles from unauthorized access into airport airside areas and security restricted areas that are under the control of the Operator. Such identification system shall include:

- i) Designated checkpoints where identification is verified before access is permitted;
- ii) A requirement for authorized personnel to prominently display an identification badge.
(GM)

Guidance

It is recommended that all persons working at the airport be required to prominently display (preferably on outer clothing) an identification permit (badge or card) issued by one organization approved for that purpose by the responsible authority. The requirement to have and prominently display an identification permit applies to all personnel who work in or have access to security restricted areas used for, among other things, aircraft maintenance, aircraft servicing (e.g., catering) and aircraft, cargo, baggage and passenger handling.

The responsible authority provides guidance for the design and the management of the airport permit system. The use of several different styles of identification permits at an airport is not recommended because it could lead to confusion in the administration of the identification program. If used in conjunction with an automated access control system, an identification permit can be equipped with an electronically readable code for controlled entry (or perhaps exit).

Ideally, all permits are issued through a central security authority at each airport in accordance with policies and procedural guidelines established by the appropriate authority for security. Strict control and accounting procedures are a requirement. The use of an electronic database is an effective method for recording and controlling identification permits, including lost, stolen or cancelled permits.

At larger airports consideration is to be given to the subdivision of security restricted areas into zones. In such case, identification permits would be designed to differentiate zonal access and make obvious (e.g., numerical, alphabetical or color coding) to which zone a particular person is authorized to have access.

Compliance with airport requirements for personnel access control measures and security access permit would typically result in conformity with specifications in this provision.

SEC 3.1.2 The Operator shall ensure measures are in place that provide for the control and supervision of the movement of personnel and vehicles to and from the aircraft in security restricted areas and prevent unauthorized access to the aircraft. (GM)

Guidance

The first line of defense against unauthorized access to aircraft is the safeguarding of the landside/airside boundary. Within this boundary, there is also a dependency on security measures that are taken at the aircraft and in the immediate vicinity.

Aircraft on the ground can be centers of considerable activity. Procedures are in place to ensure airline personnel intercept any person identified as having no need to be on board or near the aircraft.

Aircraft in service are not to be left unattended. Precautions are taken to prevent unauthorized access to aircraft that are not in service and are parked and unattended. All external doors are locked, all stairs and loading bridges are removed and any steps left near the aircraft are immobilized.

Passengers boarding or disembarking from flights using the apron are to be observed when passing from the terminal building to the aircraft to prevent infiltration by potential hijackers or, in extreme cases, to guard against attack from surrounding areas. Such measures are applied whether the passengers are walking or are being transported in vehicles.

Particular care is taken to ensure only crew members, authorized representatives and officials, and bona fide passengers are permitted access to the aircraft.

SEC 3.1.3 The Operator shall ensure measures are in place to prevent the introduction of unauthorized weapons, explosives or other dangerous devices or items on board an aircraft by persons other than passengers. (GM)

Guidance

An effective method to deter or detect illegal access to aircraft is the implementation of frequent but irregularly timed patrols by security personnel. This is particularly important when operations are at their lowest levels and aprons and hangar areas are least frequented. Such patrols are normally conducted by airport personnel.

Additional measures to prevent unauthorized access to passenger aircraft may include:

- Parking aircraft in a well-lit area; adding security lighting, if necessary;
- When possible, parking aircraft in an observable area;
- Parking aircraft away from fences or buildings that might provide easier access;
- For aircraft parked overnight, depending on the perceived risk at the location, applying a tamper-evident seal to all exterior doors or verifying the identity of all persons who access the aircraft to ensure a legitimate reason for accessing the aircraft;
- For aircraft parked remotely from a loading bridge:
 - Closing all exterior doors and exterior hatches of the aircraft;
 - Removing all stairs;
 - Ensuring no portable stairs, lift devices or passenger transfer vehicles are in the immediate vicinity of the aircraft.
- For aircraft parked with access to a loading bridge:
 - Closing all exterior hatches of the aircraft;
 - Closing all exterior doors of the aircraft not served by a bridge;
 - Locking the door between the terminal and the bridge;
 - Ensuring no portable stairs, lift devices or passenger transfer vehicles are in the immediate vicinity of the aircraft;
 - Locking or keeping under constant surveillance doors that provide access to the bridge from the apron or retracting the bridgehead from the aircraft and deactivating the bridgehead positioning controls.

SEC 3.1.4 If the Operator conducts passenger flights, the Operator shall ensure procedures are in place to ensure any items left behind by disembarking passengers from transit flights are removed from the aircraft or otherwise addressed appropriately before the departure of the aircraft for an *international* passenger flight at an airport that is deemed by the Operator or the appropriate authority to be under an increased security threat. (GM)

Guidance

The operator or the State of the Operator, through a threat assessment, will determine which airports are considered at a higher security threat and require the removal of cabin articles, including carry-on baggage, at transit stops.

At airports assessed to be under increased threat, measures are implemented to search the cabin during the aircraft transit period to prevent disembarking passengers from leaving any article on board.

The operator may allow passengers to disembark during the transit period and then have the cabin searched.

If the operator opts to have transit passengers remain on board the aircraft during the transit stop, such passengers remaining on board should be asked to positively identify their belongings, perhaps by placing them on their laps, while the security check or search is performed.

Any articles found are treated as suspect and appropriate measures are taken to remove them from the aircraft.

SEC 3.1.5 If the Operator conducts operations in a cargo facility, the Operator shall ensure security measures are implemented in such cargo facilities(s) in accordance with standards in the Operations Manual (OM) and with requirements of the applicable civil aviation security program. (GM) **Guidance**

Security measures that address landside and airside facility access for vehicles and personnel, as well as the protection of cargo and mail so as to prevent acts of unlawful interference, would normally be contained in the OM. Such measures address requirements of applicable regulatory and airport authorities, as appropriate.

SEC 3.1.6 If the Operator conducts operations in a cargo facility, the Operator shall ensure procedures are in place for persons and vehicles with access to security restricted areas in or around any cargo facility to be subjected to security controls.

SEC 3.1.7 (Intentionally open)

3.2 Aircraft Security

SEC 3.2.1 If the Operator conducts international flights, the Operator shall ensure procedures are in place for the conduct of an aircraft security check or an aircraft security search at the originating location of an international flight when required by the relevant national authorities. (GM)

Guidance

Refer to the ITRM for the definition of *International Flights*.

The requirement for the conduct of, and the need for, a security check or a security search is based upon a security risk assessment accomplished by the Operator and/or the relevant national authorities.

Trained and competent security personnel, aircraft crew members or other qualified personnel typically conduct searches and checks of aircraft.

In addition to an aircraft security check prior to the commencement of each international flight, a regular search of an aircraft for suspected explosive devices and/or weapons is conducted when an aircraft is put into service following maintenance or after an overnight stop.

Guidance material is available by the operator for aircraft preflight checks and searches under normal circumstances, higher threat situations, and emergency situations.

As a general rule, the security checks would include:

- An inspection of the exterior of the aircraft, with special attention to wheel bays and technical areas;
- A comprehensive inspection of the interior of the aircraft, including the passenger cabin area, seats, overhead luggage lockers, toilets, galleys and other technical areas such as the flight deck. The focus is on areas that are readily accessible without the use of

common tools. To facilitate the search, panels that can be sealed are sealed, to show their integrity has not been compromised.

A security search is a more thorough than a security check, and includes an in-depth inspection of the interior and exterior of the aircraft.

To promote competent security searches, it is recommended that aircraft security search checklists be made available for each type and configuration of aircraft. When the checklist is completed, it is signed by the person responsible for the inspection and is retained on file at the station where the inspection took place.

To be effective, aircraft checks and searches are typically carried out in good lighting conditions, or personnel performing such activities are provided with lighting sufficient for the purpose.

Aircraft access control is typically imposed prior to commencing a search, and the search is normally conducted with the minimum number of persons on board. Such measures would be taken to ensure devices are not introduced into the aircraft once it has been cleared. Control of access is then typically maintained until the aircraft doors are closed prior to flight departure.

SEC 3.2.2 The Operator shall ensure the immediate availability of procedures and associated checklist(s), applicable to each aircraft type, to be used for an aircraft bomb search or inspection to discover concealed weapons, explosives, or other dangerous devices when sabotage or other type of unlawful interference is suspected. Such procedures shall contain:

- i) Guidance for the course of action to be taken if a bomb or suspicious object is found;
- ii) Least risk location(s) for a bomb or explosives specific to each passenger aircraft type, if so designated by the manufacturer. (GM)

Guidance

In order to address the need to conduct a timely search or inspection of an aircraft, a checklist or other form of guidance (e.g., Bomb Threat Search Checklist, Aircraft Search Instructions) applicable to each aircraft type is immediately available, either located on board the aircraft or readily accessible through other means, for use by the flight and cabin crew or other qualified personnel. Such checklist or instructions assist qualified personnel in carrying out a systematic search of the flight deck and/or cabin during flight to identify suspected or potentially dangerous devices or explosives. Instructions specific to the passenger aircraft type specify predetermined structurally safe locations to move suspected dangerous or potentially explosive articles, if found. (Note: some aircraft types may not have designated least risk locations.)

The capability to undertake a systematic search for such items on board a cargo aircraft may be difficult due to limited access to many parts of the aircraft in flight. Opening containers and accessing pallets of cargo in flight also may not be possible and the availability of flight crew or other trained personnel to undertake such a search may be limited.

SEC 3.2.3 The Operator shall have appropriate measures in place to ensure unauthorized persons are prevented from entering the flight deck. (GM)

Guidance

Refer to ISM Section 2 (FLT), Subsection 3.13, *Flight Deck, Passenger Cabin, Cargo Compartment Coordination* for provisions that specify onboard flight deck security procedures.

3.3 Carriage of Weapons

SEC 3.3.1 If the carriage of weapons on board an aircraft for a passenger flight by law enforcement officers and other authorized persons acting in the performance of their duties is approved by the Operator, the State and/or other applicable authorities, the Operator shall have a policy and procedures, in accordance with the laws of the state(s) involved, for such carriage of weapons on board an aircraft. (GM)

Guidance

A weapon would be any instrument of attack or defense in combat that is normally prohibited from being carried on board an aircraft by a passenger.

The carriage of weapons on board aircraft by law enforcement officers and other authorized persons is governed by the laws of the states involved.

There have been instances of weapons having been forcibly removed from law enforcement officers or other authorized persons on board an aircraft by individuals who subsequently used the weapons to commit acts of unlawful interference. Therefore, states ensure the carriage of weapons is permitted only under strictly controlled conditions. Appropriate rules, regulations or other implementing instructions normally specify the procedures to be applied.

Local requirements and bilateral agreements will typically dictate the specifics of procedures.

SEC 3.3.2 If the carriage of weapons on board an aircraft for a passenger flight is approved as specified in SEC 3.3.1, the Operator shall have a procedure to ensure the pilot-in-command is notified prior to the commencement of a flight. If permitted by the states involved, such notification shall include the number and seat locations of authorized armed persons on board the aircraft.

SEC 3.3.3 If a weapon that is not in the possession of a law enforcement officer or other authorized person in the performance of their duty is approved for carriage on board an aircraft for a passenger flight by the Operator, the State and the state(s) involved in such transport, the Operator shall have procedures for such carriage of a weapon, to ensure:

- i) An authorized and duly qualified person has determined the weapon is not loaded;
- ii) The weapon is stowed in a place that is inaccessible to any unauthorized person during flight;
- iii) The carriage of a weapon is legally permitted by all state(s) involved, including the State and state(s) of flight departure, transit and arrival. (GM)

Guidance

With the approval of the operator, the following procedures are typically implemented for any weapon carried as hold baggage:

- Prior to acceptance, the passenger or other authorized and duly qualified person determines that the weapon is not loaded;
- The weapon is transported in a sturdy container to prevent any possible damage during the flight;
- Ammunition is securely boxed and carried separately from the weapon;
- Weapons and ammunition are stowed in an area that is inaccessible to any unauthorized person while the aircraft is in flight; such weapons are not be carried on the flight deck or retained by any crew member;
- A lockable tamper-proof container located in the aircraft hold is used for this purpose;
- The pilot-in-command is notified when weapons and ammunition are carried on the aircraft;
- Transit and transfer stations are advised and ensure the integrity of such items;
- At the final destination, when required by the State of Flight Arrival, security procedures are implemented to return the weapons and/or ammunition to the passenger;
- Where the weapon is stowed in a baggage compartment (or hold) that is accessible to persons during flight:
 - the compartment door(s) remain closed and are monitored during the flight;
 - the weapon is packed separately from any ammunition;

- the weapon is stowed in the compartment in a manner that access is obstructed (or impeded) by other baggage.

3.4 Passengers, Supernumeraries, Cargo Attendants and Cabin Baggage

SEC 3.4.1 If the Operator conducts passenger flights, the Operator shall have a process to ensure originating passengers and their cabin baggage are subjected to screening prior to boarding a passenger aircraft for;

- i) An international flight;
- ii) As required by the applicable aviation security authority, a domestic flight. (GM)

Guidance

Refer to the ITRM for the definition of *Domestic Flights*.

The effective screening of all passengers and their cabin baggage is recognized as an essential element in achieving a safe and secure operation, and forms part of the passenger handling procedures contained in the Airline Security Program.

Technical equipment used for the screening of persons and baggage has certain limitations. Archway metal detectors and hand-held metal detectors, for example, cannot detect non-metallic weapons and explosives. Even conventional X-ray equipment does not always image or define explosive material effectively. To compensate for such limitations, or to introduce a random element into the selection process, it may be advisable to conduct an additional search of passengers and cabin baggage after they have been screened. The additional screening can be performed by hand or by technical means, such as explosive trace detection (ETD), full-body X-ray, explosive particle or vapor detection portals and/or other approved advanced technological methods.

Specific guidelines and procedures are developed and training given to personnel, for addressing persons with special needs. As a minimum, this includes instructions on what actions to take for the following classes of persons:

- Babies in pushchairs and children (requires consent of an adult);
- Pregnant women;
- Disabled persons;
- Passengers in wheelchairs;
- Persons with medical conditions [e.g., limbs in plaster];
- Passengers with religious reasons that prevent the hand search of them or their baggage;
- Transsexuals;
- Other special local criteria.

SEC 3.4.2 If the Operator transports supernumeraries, the Operator shall have a process to ensure such personnel and their personal belongings are subjected to screening or other appropriate security controls prior to boarding the aircraft. (GM)

Guidance

Refer to the ITRM for the definition of *Supernumerary*.

SEC 3.4.3 If the Operator conducts passenger flights, the Operator shall have a process to ensure transfer and transit passengers and their cabin baggage **either**:

- i) Are subjected to screening prior to boarding a passenger aircraft, **or**

- ii) Have been screened to an appropriate level at the point of origin and subsequently protected from unauthorized interference from the point of screening at the originating airport to the departing aircraft at the transfer or transit airport. (GM)

Guidance

Refer to the ITRM for the definition of *Unauthorized Interference*.

Transit and transfer passengers and their cabin baggage may not require screening prior to admission to an airport sterile area if, in the judgment of the appropriate authority for security, the standard of screening en route and at the airport of embarkation is equal or comparable to that of the admitting state. However, measures ought to be established to ensure transit or transfer passengers do not take unauthorized articles on board an aircraft.

SEC 3.4.4 If the Operator conducts passenger flights, the Operator shall have a process to ensure passengers and their cabin baggage are subjected to additional security controls in accordance with requirements of the applicable aviation security authority when flights are under an increased security threat. (GM)

Guidance

In the case of a general (i.e. non-specific) *intermediate* threat level, in addition to the baseline passenger and carry-on screening procedures, the following additional measures may be implemented:

- Continuous random searching of passengers by hand (or by approved technological methods) either at the departure gate (where airport facilities permit) or other suitable location(s).
- Continuous random searching of cabin baggage by hand (or by approved technological means) either at the departure gate (where airport facilities permit) or other suitable location(s).

In the case of a general (i.e. non-specific) *high* threat level, additional measures such as the following may be introduced:

- All departing passengers are searched again by hand or screened with metal detection equipment at the departure gate before being permitted to board the aircraft;
- All cabin baggage is subjected to an additional search by hand or by X-ray equipment, either at the departure gate (where airport facilities permit) or other suitable location(s), before being permitted to be carried on board the aircraft.

If a threat is specific to a certain object (e.g. liquid explosives), then more specific countermeasures than above would need to be implemented.

To facilitate additional screening, earlier close-out of passenger check-in operations is a consideration.

SEC 3.4.5 If the Operator conducts passenger flights, the Operator shall have a process to ensure passengers and their cabin baggage, which have already been subjected to screening, are:

- i) Protected from unauthorized interference from the point of screening until they board a passenger aircraft;
- ii) Subjected to re-screening if the potential for unauthorized interference has been determined to exist. (GM)

Guidance

If the design of the airport permits, to ensure separation from departing passengers who have been subjected to screening, arriving passengers disembark from an aircraft either:

- On a level different from the departure boarding area, or

- Through an area isolated from the departure boarding area; or
- Into an area of the airport dedicated to arriving passengers only.

If physical means to avoid contact between departing and arriving passengers is not possible, passenger mix may be prevented by restricting access to the departure lounge until all arriving passengers have cleared the area. This solution may not be possible in large airport terminals with many gates close to each other.

The major concern regarding the sterility of arriving passengers will most likely be associated with flights that have originated in states where screening requirements are considered to be inadequate by the State of Flight Arrival. In order to limit the disruption of passenger flow within a terminal, consideration might be given to assigning the disembarkation of all such flights to a common sector or area of the airport or terminal that can be cordoned off and/or monitored by security personnel. Where passengers are arriving from a state where screening is considered by the State of Flight Arrival to be equal or better, arriving and departing passengers can mix.

In order to limit the disruption of passenger flow within a terminal, consideration might be given to assigning the disembarkation of all such flights to a common sector or area of the airport or terminal that can be cordoned off and/or monitored by security personnel.

SEC 3.4.6 If the Operator conducts passenger flights, the Operator shall have a process to ensure, at each transit airport:

- i) The integrity of the security system is protected from unlawful interference;
- ii) Transit passengers and their cabin baggage are protected from unauthorized interference. (GM)

Guidance

Special precautions taken to control transfer and transit passengers and their baggage include surveillance of transit areas (arrival/departure halls) and baggage storage and sorting areas. Where transit or transfer passengers have access to hold baggage or baggage collection areas, re-screening is necessary before re-boarding or having any contact with other screened passengers. The objective is to ensure transit and transfer passengers do not mix with unscreened passengers.

SEC 3.4.7 The Operator shall have a policy and procedures to refuse transportation to any person that does not consent to a search of his or her person or property in accordance with the Security Program, to include a physically impaired person that requires a wheelchair or has an orthopedic or implanted electronic device. (GM)

Guidance

Persons who refuse to undergo screening before boarding or entering an aircraft are denied boarding and not allowed to pass the point of search. Additionally, such persons, or others who might be denied passage for other security reasons, are referred to policing authority officials, if required by law.

3.5 Special Category Passengers

SEC 3.5.1 If the Operator conducts passenger flights, the Operator shall have a policy and a process to ensure procedures are in place for the transport of potentially disruptive passengers who are obliged to travel because they have been the subject of judicial or administrative proceedings; such procedures shall incorporate risk assessment measures. (GM)

Guidance

Refer to the ITRM for the definitions of *Deportee* and *Inadmissible Passenger*.

Airlines that have transported people who have been refused entry to a state can be called upon to return such person(s) to the port of embarkation. Such removal is accompanied by a judicial order of removal.

Those responsible within the organization of an operator for compliance with judicial orders (e.g., station managers) inform the pilot-in-command and cabin crew at the point of embarkation. Transit and destination airports also need to be advised that such a person is being carried. The original operator advises all other operators involved in the transport of the inadmissible passenger to their final destination.

The following information is provided to the originating operator, as well as subsequent operators:

- Name and sex of the person identified as the deportee; reason for deportation (nature of crime);
- Willingness or unwillingness to travel by air;
- Whether the person has attempted to escape custody;
- Whether the person has any history of violence;
- Whether the person has a history of self-harm;
- Whether members of the person's family are booked on the same flight;
- Whether the person is likely to be the target of harm during the transportation;
- Identity of escorts (if required);
- The mental and/or physical state of the person;
- Wanted status of the person (by any other authority);
- Other information that would allow an operator to assess the risk of endangering the security of the flight;
- Special conditions and precautions for transport of the person, if any.

SEC 3.5.2 If the Operator conducts passenger flights, the Operator shall have a process to ensure measures are in place that provide for the safety of an aircraft when passengers are to be transported who are obliged to travel because they have been the subject of judicial or administrative proceedings. (GM)

Guidance

The carriage of persons travelling by virtue of the provisions of a judicial or custodial order on a commercial flight is a common occurrence. Such persons are subject to strict controls by an operator, as they could represent a risk to the safety of a flight. Provisions for heightened security arrangements are included in the Security Program of an operator.

To ensure the safety of a flight, an operator has an assessment process to determine whether uplift of a passenger is refused or if an escort is necessary. Accordingly, there is a well-defined escort policy, which also is provided to the appropriate immigration authorities. Females travelling under the provisions of a judicial order may require a female escorting officer as a member of the escort team.

Special provisions exist for flights where transportation of multiple inadmissible passengers is required.

Although a person is involved in travel in response to a judicial or custodial order, while in flight, such passenger is always under the control of the pilot-in-command of the aircraft.

SEC 3.5.3 If the Operator conducts passenger flights, the Operator shall have a process to ensure procedures are in place for the notification of the pilot-in-command, prior to the commencement of a flight, when passengers are to be transported who are obliged to travel because they have been the subject of judicial or administrative proceedings.

3.6 Hold Baggage

SEC 3.6.1 If the Operator conducts international passenger flights, the Operator shall have a process to ensure originating hold baggage is subjected to screening prior to being loaded into an aircraft for an international passenger flight. (GM)

Guidance

All checked baggage loaded on international flights is examined by certified screeners using approved screening methods. Each State will have varying regulations and requirements, but typically approved screening methods include:

- Explosive detection systems (EDS);
- Explosive trace detection (ETD);
- Xray;
- Physical search;
- Canine.

Where the state delegates screening to the operator, or where the foreign host government does not perform screening to the standard required, the operator is responsible for ensuring all checked baggage is screened to the appropriate level and meets the requirements of the State of the Operator.

In the event of an increased threat, the operator, based on risk assessment, may direct supplementary screening procedures as appropriate to counter the threat.

SEC 3.6.2 If the Operator conducts passenger flights, the Operator *should* have a process to ensure originating hold baggage is subjected to screening prior to being loaded into an aircraft for a *domestic* passenger flight.

SEC 3.6.3 If the Operator conducts passenger flights, the Operator shall have a process to ensure hold baggage to be transported on an *international* passenger flight is protected from unauthorized interference from the point it is screened or accepted into the care of the Operator, whichever is earlier, until departure of the aircraft transporting the baggage.

SEC 3.6.4 If the Operator conducts passenger flights, the Operator shall have a process to ensure procedures are in place to prevent the transport of baggage of passengers that are not on board the aircraft for an *international* flight unless such baggage is identified as unaccompanied and subjected to appropriate security control based on risk assessment. (GM)

Guidance

An operator typically has a system in place to identify a passenger who fails to board a flight after check-in or fails to re-board a flight at a transit stop. In an effort to reduce the risk, the aviation industry initially introduced a system where passengers identified their bags before loading. That system can still be invoked at remote locations, if no other procedure exists.

A system is in place to verify and confirm, before a flight departs, that only the baggage of boarded passengers has been uplifted.

Applicable primarily to flights operated solely for the purpose of transporting passengers on a charter basis (e.g. executive charters, VIP charters), if permitted by the State, the requirement for passenger baggage reconciliation procedures may be rescinded. Additionally, as permitted by the State, baggage reconciliation procedures could be rescinded:

- For specific passengers designated as VIPs (e.g. heads of state) who are being transported on scheduled passenger flights;
- When baggage and passengers are separated for reasons beyond the control of the passengers (e.g. involuntary offloading due to an oversold flight, weather diversions, operational aircraft change, passenger re-routing, weight restrictions).

SEC 3.6.5 (Intentionally open)

SEC 3.6.6 If the Operator conducts passenger flights, the Operator shall have a process to ensure procedures are in place to prevent items of hold baggage from being transported on an international passenger flight unless such items have been:

- i) Individually identified as accompanied or unaccompanied baggage;
- ii) Screened to the applicable standard and accepted for carriage on that flight by the Operator.

SEC 3.6.7 If the Operator conducts passenger flights, the Operator shall have a process to ensure procedures are in place to record hold baggage that has met criteria in accordance with SEC 3.6.6 and has been authorized by a person appointed by the Operator for transport on an *international* passenger flight.

SEC 3.6.8 If the Operator conducts passenger flights, the Operator shall have a process to ensure secure storage areas have been established where mishandled passenger baggage may be held until forwarded, claimed or disposed of in accordance with local laws. (GM)

Guidance

Refer to the ITRM for definitions of *Mishandled Baggage*, *Unidentified Baggage* and *Unclaimed Baggage*.

Mishandled baggage is usually the result of the baggage having:

- Been incorrectly tagged;
- Arrived without a tag;
- Missed a connecting flight;
- Been carried on the wrong flight.

Such baggage is held in a locked and secure storage cage or room. Access and key control is properly supervised and the baggage subjected to additional screening before being loaded into an aircraft.

Unclaimed baggage is kept for a period of time, as prescribed by the local authority, and disposed of through that authority as unclaimed property.

The process for forwarding mishandled baggage is described in:

- IATA Resolution 743a;
- IATA Recommended Practice 1743g, *Marking of Expedite Baggage for Security Control*.

SEC 3.6.9 If the Operator conducts passenger flights, the Operator shall have a process to ensure shipments checked in as baggage by courier services for transport on an international passenger flight are screened. (GM)

Guidance

Courier service is an operation whereby shipments tendered by one or more shippers are transported as the baggage of a courier passenger on board a scheduled airline flight under normal passenger hold baggage documentation.

This provision refers to a person who is employed by a courier service operator and travels as a passenger or crew member and checks a courier shipment in as hold baggage, which then is screened under the same requirements that apply to all hold baggage.

SEC 3.6.10 If the Operator conducts passenger flights, the Operator shall have a process to ensure transfer hold baggage for an international passenger flight **either**:

- i) Is subjected to screening prior being loaded into an aircraft, **or**

- ii) Has been screened at the point of origin and subsequently protected from unauthorized interference from the point of screening at the originating airport to the departing aircraft at the transfer airport.

SEC 3.6.11 If the Operator conducts passenger flights, the Operator *should* have a process to ensure transfer hold baggage for a domestic passenger flight **either**:

- i) Is subjected to screening prior being loaded into an aircraft, **or**
- ii) Has been screened at the point of origin and subsequently protected from unauthorized interference from the point of screening at the originating airport to the departing aircraft at the transfer airport.

3.7 Cargo and Mail

SEC 3.7.1 If the Operator transports revenue or non-revenue cargo and/or mail on passenger flights, the Operator shall have a process to ensure cargo and/or mail shipments for transport on passenger flights are subjected to the appropriate security controls, including screening where practicable, as established by the applicable state(s). (GM)

Guidance

Refer to the ITRM for the definition of *Cargo*, which includes definitions for revenue cargo and non-revenue cargo.

ICAO requirements specify the application of security controls to cargo and mail shipments tendered for transportation on commercial passenger flights. States may mandate additional measures, which could include a requirement for application of regulated agent or known shipper/consignor programs.

Additional details of a comprehensive cargo security program may be found in the IATA Security Manual.

SEC 3.7.2 If the Operator conducts cargo flights utilizing cargo aircraft, the Operator shall have a process to ensure cargo and/or mail shipments for transport on a cargo aircraft are subjected to the security requirements of the applicable state(s). (GM)

Guidance

ICAO requirements specify that states ensure security controls are applied to cargo and mail for transportation on cargo aircraft, with such controls determined on the basis of a security threat assessment by the relevant national authorities. Although security requirements and/or recommendations may vary from state to state, cargo operators would typically be in compliance with the requirements of the State of Flight Departure.

SEC 3.7.3 If the Operator transports revenue or non-revenue cargo and/or mail on passenger flights, the Operator shall have processes to ensure cargo and/or mail for transport on passenger flights is protected from unauthorized interference from the point security screening or other security controls are applied until departure of the aircraft. (GM)

Guidance

Specifications in this provision are applicable to the transport of revenue and non-revenue cargo and/or mail.

When cargo and/or mail has been screened by a regulated agent or known shipper/consignor prior to acceptance by the operator, the operator, among other protective actions, would typically examine the documentation and check the shipment for evidence of tampering prior to loading onto the aircraft.

SEC 3.7.4 If the Operator transports revenue cargo and/or mail on passenger flights, and if the Operator accepts cargo and/or mail from a regulated agent or known shipper/consignor at any

location, the Operator shall have a process to ensure, in such locations, cargo and/or mail is not accepted for transport on a passenger flight unless:

- i) Shipments have been subjected to appropriate security controls through a known shipper/consignor program or by the Operator, and thus have become known cargo;
- ii) The application of security controls has been confirmed or accounted for by the Operator or a regulated agent. (GM)

Guidance

Refer to the ITRM for the definitions of *Known Cargo* and *Unknown Cargo*.

States typically determine what constitutes “appropriate security controls.” Some states may not permit acceptance of cargo or mail from other than regulated agents and/or known shippers/consignors.

As part of its Security Program, an operator may consider a cargo shipment accepted from a regulated agent and/or known shipper/consignor as meeting required security provisions *unless such shipment is identified as unknown cargo*.

Additional guidance may be found in the IATA Security Manual.

SEC 3.7.5 If the Operator transports revenue cargo and/or mail on passenger flights, and if the Operator accepts cargo and/or mail from a regulated agent at any location, the Operator shall have a process to ensure, in such locations, cargo and/or mail for transport on a passenger flight is not accepted from a regulated agent unless such regulated agent is approved by the relevant state(s), regulatory authority(ies) or designee(s).

SEC 3.7.6 If the Operator transports revenue or non-revenue cargo and/or mail on passenger flights, the Operator shall have a process to ensure *security controls appropriate for unknown cargo* are applied to any cargo and/or mail for transport on a passenger flight that is either tendered by *other than* a regulated agent or known shipper/consignor (unknown cargo) or is identified as unknown cargo by a regulated agent or known shipper/consignor. Such process shall ensure such unknown cargo:

- i) Is accompanied by documentation that identifies and details the contents of the shipment;
- ii) Is subjected to a physical search or screening either by electronic or other means. (GM)

Guidance

ICAO requirements specify that cargo and mail is to be accounted for by a regulated agent program or be subjected to appropriate security controls. Individual states determine what constitutes “appropriate security controls.” Some states may not permit acceptance of cargo or mail from other than regulated agents/known consignors.

Additional guidance may be found in the IATA Security Manual.

SEC 3.7.7 If the Operator transports revenue or non-revenue cargo and/or mail on passenger flights, and if the Operator accepts cargo and/or mail at any location where cargo security is not accounted for through a regulated agent and/or known shipper/consignor program, the Operator shall have a process to ensure, in such locations, cargo and/or mail shipments transported on a passenger flight are subjected to the application of appropriate security controls to make the shipments known cargo and:

- i) The application of security controls is confirmed and accounted for by the Operator;
- ii) Security controls are in compliance with:
 - a) The state where such shipments are accepted;
 - b) Other states with requirements applicable to such shipments. (GM)

Guidance

It is recommended that consideration be given to implementation of a cargo security regime that meets or exceeds the recommendations of IATA Cargo Services Conference (CSC) RP 1630 and/or the IATA Security Manual.

ICAO requirements specify that cargo and mail is to be accounted for through a regulated agent or known shipper/consignor program or subjected to appropriate security controls. Individual states determine what constitutes “appropriate security controls.” Some states do not require implementation of a regulated agent or known shipper/consignor program. Ideally, an operator would have a program in place that is consistent with recommendations contained in IATA CSC RP 1630 and/or the IATA Security Manual.

Typically, screening is the preferred type of security controls applied to cargo shipments.

SEC 3.7.8 (Intentionally open)

SEC 3.7.9 If the Operator transports revenue or non-revenue cargo on passenger flights, the Operator shall have a process to ensure known cargo shipments presented for transport on a passenger flight are:

- i) Delivered by an employee or nominated person of either the known shipper/consignor, regulated agent or the Operator;
- ii) Free from any signs of tampering;
- iii) Presented with all required information (paper or electronic) that corresponds to the cargo being delivered;
- iv) Subjected to additional security controls as required by risk assessment;
- v) Protected from unauthorized access after acceptance. (GM)

Guidance

The IATA Security Manual outlines specific provisions covering the basic acceptance of all known cargo to be carried on commercial passenger flights. These provisions are in addition to the baseline requirements of ICAO Annex 17.

The CSC RP 1630 contains guidance related to the required information and a standard consignment security declaration in paper and electronic format.

Known cargo, when presented to an operator for transport on an aircraft, has by definition been subjected to appropriate security controls by a regulated agent, operator or known shipper/consignor. An operator, as a minimum, implements the steps specified in this provision to maintain or protect the “known” status of the shipment from the time the shipment is accepted until it is finally loaded into an aircraft.

If for some reason a shipment is not properly maintained or protected in its known status, the shipment then reverts to unknown cargo. In such case, the operator, in order to return the shipment to known cargo status, would have to ensure the shipment is again subjected to the appropriate security controls.

3.8 In-flight, Catering and Other Supplies

SEC 3.8.1 If the Operator conducts passenger flights, the Operator shall have a process to ensure in-flight, catering and/or other supplies intended for transport on a passenger flight are subjected to appropriate security controls as established by the applicable state(s), and are thereafter protected until loaded onto the aircraft. (GM)

Guidance

Catering supplies are frequently prepared by an external service provider at an off-airport location.

Additional guidance may be found in the IATA Security Manual.

3.9 General Protection

SEC 3.9.1 The Operator shall have a process to ensure cargo, mail, baggage, supplies and/or any other material intended for transport on an aircraft, which is moved about or stored at the airport prior to being loaded into an aircraft, is protected from unauthorized interference. (GM)

Guidance

Protection measures might include sealing, visual monitoring or any other method that will detect or physically prevent unauthorized interference.

SEC 3.9.2 The Operator shall have a process to ensure merchandise and supplies introduced into security restricted areas are subject to appropriate security controls, which may include screening. (GM)

Guidance

Protection measures might include sealing, visual monitoring or any other method that will detect or physically prevent unauthorized interference.

4 Security Threat and Contingency Management

4.1 Threat Management

SEC 4.1.1 The Operator shall have a process to identify security threats directed against the Operator, to include:

- i) Assessment of associated risks;
- ii) Development of appropriate response measures. (GM)

Guidance

Procedures would typically include instructions for communicating security threats to persons responsible for making decisions and taking action, as well as providing advice to the flight crew. Means of communication and details of telephone numbers, emergency radio channels and contact persons would be readily available to ensure a response to threats without delay.

SEC 4.1.2 The Operator shall have a process to ensure the implementation of appropriate security measures in response to:

- i) Security threats directed against the Operator;
- ii) Threat levels issued by applicable aviation security authorities. (GM)

Guidance

The contingency plan for response to an increased threat to operations is included in the Security Program.

An assessment of increased threat could come from the authorities or from an operator's own threat assessment process.

Procedures typically set out the increase in security measures appropriate to counter a situation of increased threat, as well as methods used to communicate any changes in threat level to the flight crew, operational personnel, management and overseas stations. There is also normally a verification process to ensure required measures have been implemented without delay.

4.2 Contingency Planning

SEC 4.2.1 The Operator shall have a contingency plan that provides for a comprehensive and managed response to aviation security incidents. (GM)

Guidance

The primary objective of a contingency plan is the protection of life and property and the resumption of normal operations. The secondary objective is investigation to determine if the crisis was an accident or a crime; the latter typically requires those found responsible to be taken into custody.

4.3 Investigation and Notification

SEC 4.3.1 The Operator shall have a process for the investigation of incidents involving:

- i) Threats or acts of unlawful interference;
- ii) Failure of implementation of security controls.

SEC 4.3.2 The Operator shall have a process that ensures notification of the applicable aviation security authorities when unlawful interference against the Operator has occurred. (GM)

Guidance

Procedures are in place to immediately notify local security and civil aviation authorities and to provide information relevant to threats and events of unlawful interference. Contact information and checklists for this purpose are readily available.



Standards and Recommended Practices

Procedures typically specify an initial verbal notification followed by a written notification.

Table 8.1 – Security Manual Content Specifications

The content of the Security Manual shall address:

- i) Definitions of technical terms associated with the Security Program;
- ii) Authority of the Security Program;
- iii) Applicability of the Security Program;
- iv) Recruitment and training of operational security personnel;
- v) If applicable, security of checked baggage;
- vi) Security in restricted areas;
- vii) Threat assessment;
- viii) Movement of aircraft and, if applicable, evacuation of passengers following bomb alerts;
- ix) Security crisis management plans at airports;
- x) Scrutiny of electronic items in the aircraft cabin and in checked baggage (based on threat level);
- xi) If applicable, segregation of departing passengers in airport facilities;
- xii) Public awareness of security;
- xiii) Detection equipment and technology;
- xiv) If applicable, passenger risk assessment and enhanced screening;
- xv) Security of cargo, express parcels and mail;
- xvi) Screening of checked baggage;
- xvii) If applicable, one-stop security;
- xviii) If applicable, measures for addressing unruly passengers.



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