IS-BAO

An International Standard

for

Business Aircraft Operations

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Foreword

The IS-BAO - An International Standard for Business Aircraft Operations was developed by the business aviation and international helicopter communities for the benefit of those communities. The purpose is to promote global standardization and to assist operators in establishing quality flight operations using best practices of business aircraft and of commercial and non-commercial helicopter operations world-wide.

Although the IS-BAO was developed with the purpose of self-determination, other long term benefits are possible through development of an industry based third-party registration programme similar to the ISO - 9000 series (see Chapter 2.0). The business aviation and helicopter communities may also wish to promote the IS-BAO to regulators and standards setters as an acceptable basis for rulemaking.

While the IS-BAO is a set of standards that reflect business aviation best practices world-wide, a management process has been designed to ensure its long-term growth and development. The IS-BAO management process involves all IBAC member national and regional business aviation associations and international helicopter associations. It is under the direction of the IS-BAO Standards Board. It includes the submission of recommended revisions from participating operators and their national and regional associations, plus an annual review by the Standards Board.

The first draft of the IS-BAO was completed using a number of existing documents such as the NBAA Management Guide, the BAUA Generic Operations Manual and Canadian CAR 624 Standards. This first draft was then reviewed by a small group of operators who served as a focus group to confirm the benefits of the IS-BAO and provide preliminary comments on its structure and content. From these comments a second draft was developed. It was reviewed through a series of operator focus group meetings in North America and Europe and a standards integration meeting involving representatives from the focus groups. A third draft was then developed. It was presented at EBACE 2001 in Geneva and was then tested with operators in North America, Europe and South America. The feedback from the EBACE presentation and the operator tests was used to develop the final edition. It was approved by the IS-BAO Standards Board on December 10, 2001 who has since then managed it on behalf of the IBAC Governing Board. In that process, feedback has been gathered from users, auditors and subject matter experts. This feedback provides the basis for the annual update of the IS-BAO and related documents. In 2010 and 2011 IBAC worked with the Helicopter Association International (HAI), the British Helicopter Association (BHA) and the European Helicopter Association (EHA) to adapt the IS-BAO to include helicopter operations which resulted in the second edition of the IS-BAO.

The IS-BAO and accompanying Generic Company Operations Manual were developed for voluntary application by business aircraft operators. The IS-BAO is a performance based standard that provides for different implementation options, depending on the specific operation. For the helicopter community the HAI has developed and manages a set of “helicopter mission specific standards” to augment the IS-BAO.

Release and Disclaimer for Use of IS-BAO

The information contained in the IS-BAO – an International Standard for Business Aircraft Operations is subject to continuous review and reasonable efforts are made to ensure its contents are current. However, no one should act or rely on the basis of any such information without referring to the applicable laws in their particular jurisdiction and without obtaining appropriate professional advice. The International Business Aviation Council (IBAC) shall not be held responsible for any loss or damage caused in any way, including by errors, omissions, inaccuracy, interpretation or misinterpretation, whether negligent or not. IBAC hereby disclaims any and all liability to any person in respect of anything done or omitted to be done by any person purportedly in reliance on the IS-BAO.
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1. Purpose of the Standard

1.1 General

This publication represents an International Standard for Business Aircraft Operations (IS-BAO).

The primary purpose of the standard is to promote the harmonization of quality operating practices for business aircraft and helicopter operations on the international level. It constitutes “base line” requirements which operators should apply in structuring and staffing their organization and planning and conducting their operations.

The IS-BAO has been developed with the generally accepted principles of other international standards systems in mind. It also has been designed to be compatible with operator certification and a range of quality systems. The safety management systems (SMS) standards set out in Chapter 3 are, in particular, consistent with the ICAO SMS Framework.

Implementation of IS-BAO by operators may also serve to satisfy certain national regulatory requirements applied by States and their civil aviation authorities (CAAs). Operators remain responsible for ensuring that all applicable national requirements are met.

1.2 Applicability

The standards contained within this document are scalable such that an operator of any size, regardless of equipment or mission, can enhance their effectiveness and efficiency via IS-BAO implementation. Operators, both small and large, attest to the positive impact of the IS-BAO on their overall performance. The IS-BAO contains a set of standards and recommended practices that are based upon business aviation best practices, developed by the industry for the industry. The IS-BAO is designed to be flexible in nature so that operators can implement the requirements that pertain to their operations and set aside those that are not relevant.

The IS-BAO contains some standards and recommended practices that apply to all operators and others that apply only to either fixed wing operators or rotary wing operators. Some of the requirements refer specifically to aeroplanes or helicopters and as well the aeroplane specific requirements have an “A” suffix to the element of item number and the helicopter specific items have an “H” suffix. Also, some of the general provisions would not be applicable where the operator does not engage in that activity.

Single pilot guidance material in Appendix B was initially developed to specifically address the application of the IS-BAO standards to very light jets and other technically advanced aircraft. It has since been modified to include single pilot helicopter considerations. This supplement is accompanied by a single pilot generic operations manual which is included in the IS-BAO e-document suite. For helicopter operators the HAI has developed a set of mission specific standards some of which include single pilot considerations.

Operators are encouraged to implement the standard contained in this publication. It is designed as an industry standard intended to foster universal application of best practices. Adoption of IS-BAO by an organization is the organization’s choice. However, in the interest of international harmonization, States and regional bodies considering establishing new requirements for business aircraft operations or revising existing requirements are equally encouraged to consider the standard in their rule and standards-making activities.
1.3 Registration

Operators that have purchased and adopted the IS-BAO have the option of having the organization registered with the International Business Aviation Council (IBAC). To be registered the operator must arrange for a third party audit by an accredited IS-BAO auditor. Operators that successfully demonstrate conformity with IS-BAO will receive a Certificate of Registration from IBAC.

The Certificate of Registration is an attractive, professional document suitable for mounting so that the staff, passengers and other customers will be aware that the organization meets a highly professional industry code of practice. A second certificate, or additional certificates to be carried in aircraft as proof of registration, are available for a nominal fee.

1.3.2 IS-BAO standards are designed to enable a registrant to progress from a strong foundation of conformance to SMS principles and compliance with international standards to a system that demonstrates goal-directed continuing performance. The program leads the operator from establishment of beginning principles to a sustainable SMS and operations program through a number of steps. Audits conducted normally every two years ensures conformance and provides valuable feedback to the operation. Audits concentrate on SMS development. For IS-BAO SMS evaluation purposes, the stages of maturity of an SMS are:

a. Stage One – Confirms that the SMS infrastructure is established and that safety management activities are appropriately targeted. All supporting standards have been established.

b. Stage Two – Ensures that safety management activities are appropriately targeted and that safety risks are being effectively managed. This is the baseline that meets the requirements specified in IS-BAO Section 3.2, Safety Management System Requirements.

c. Stage Three – Verifies that safety management activities are fully integrated into the operator’s business and that a positive safety culture is being sustained. To learn more see IBAC’s webpage about IS-BAO Stage Three Cultural Attributes.

1.3.3 The IS-BAO registration system is progressive in nature, requiring registrants to achieve and maintain SMS program standards. A registrant is required to progress to and maintain at least Stage Two to remain registered. Stage Three is an optional but desirable level of achievement for operators. Other features of the registration program are:

a. The Certificate of Registration is normally issued for a period of two years from the end of the month in which the audit was completed, unless otherwise specified.

b. Operators who have demonstrated a high degree SMS maturity and sustainability during a Stage Three audit may, upon recommendation by the auditor, be granted registration for a three-year period.

c. If a registration renewal audit is conducted within the 90-day period prior to expiry of the operator’s registration, the Certificate of Registration will be renewed for the full period from the original expiry date.

d. Registrations that have lapsed for more than six months will be treated as initial applications, unless an extension has been previously approved.

e. During the period Jan 1 to Jun 30 initial and renewal audits may be performed, at the discretion of the operator and the auditor, in accordance either with the standards of the previous year or the current year. However, after July 1 audits must be conducted in accordance with the current year standards.
2. Introduction

2.1 Need for IS-BAO

It is the role of the International Civil Aviation Organization (ICAO) to promote global harmonization of aviation safety standards. It is readily accepted that it is neither in the interest of safety nor the economic well-being of operators for variations in international standards to exist. Variations in safety standards can result in confusion and safety deficiencies and have imposed unnecessary financial burdens on operators. For example, unique aircraft equipment requirements can put operators at an economic disadvantage compared with operators in other States. This constrains the potential of the aviation community and the operation of individual organizations.

More importantly, the development and implementation of one common standard for aircraft operations will serve to enhance aviation safety and will provide the opportunity to implement modern best practices. Implementation of a common standard internationally will assist organizations in allocation of their resources to safety programmes having the most tangible benefits. It is for these reasons, the need to ensure safe aircraft operations and to encourage the growth and development of aviation that the IS-BAO has been developed.

A list of the benefits of IS-BAO is contained on the IBAC website at: [http://www.ibac.org/is_bao/is-bao-benefits](http://www.ibac.org/is_bao/is-bao-benefits). In addition, a study completed by an independent safety analyst shows that the IS-BAO ‘code of practice’ has a considerable potential to reduce accidents. The analyst reviewed 297 accidents over a five year period and assessed them against the provisions of the safety standard to make a judgment regarding the potential that the accident would have been prevented if the organization had implemented the IS-BAO. To view the report see: [http://www.ibac.org/Files/Safety/Woodhouse_Report_V11.pdf](http://www.ibac.org/Files/Safety/Woodhouse_Report_V11.pdf).

2.2 Linkage with International Standards

Implementation of the IS-BAO will also have secondary benefits for operators, as the IS-BAO framework is similar to other international standards systems. For example, an organization that wishes to be registered as compliant with the ISO 9000 Standards must document the procedures and processes it has adopted to ensure quality in all aspects of the organization’s operations, and must arrange to be audited by an accredited independent (third party) registrar organization. If the organization’s quality systems documentation and implementation are found to meet the requirements of the applicable ISO 9000 series standards, the registrar grants registration and lists the organization as an organization with certified quality systems. All purchasers of the organization’s products can accept the third party registration as evidence that the organization’s quality systems meet the applicable ISO 9000 series requirements.

Such third-party registration schemes provide a number of benefits. Registration demonstrates that an operator has implemented an adequate quality system for the products it offers or provides. By this, better internal commitment, as well as enhanced user confidence, may be achieved.

Many aircraft manufacturing and repair organizations and some flight operations have embarked on ISO registration to satisfy internal organization requirements and to facilitate marketing internationally. IS-BAO is designed to be specifically applicable to business aviation and to commercial and non-commercial helicopter operations and may be a beneficial aviation specific alternative to current generic standards, or perhaps as a first step before going to ISO registration.
Some civil aviation authorities have already adopted and tailored this philosophy and approach in their aviation safety regulatory frameworks. They have done this by requiring operators to establish and maintain safety management systems, the objective of which is to prevent accidents and incidents.

2.3 Safety Management Philosophy

While the IS-BAO has been developed primarily to establish a common international standard for business aircraft and helicopter operations, it has an operator’s safety management systems as its cornerstone. An operator can use their SMS to identify hazards faced by their organization and to analyse the associated risks. The mitigation developed to eliminate the hazards or to manage the risks to an acceptable level should then be incorporated into the programs, systems, processes and procedures established to meet the requirements of the other twelve IS-BAO chapters. Through their safety assurance processes the operator then tracks these to ensure that they are appropriate and effective.

2.4 IS-BAO Structure

2.4.1 General

The IS-BAO is composed of a series of chapters that present the standards and recommended practices that have been derived from existing ICAO Standards and Recommended Practices (SARPS), national civil aviation regulations and business aircraft and helicopter association best practices. They are considered to be the norm of well-managed progressive business aviation flight departments or helicopter operators.

The chapters of the IS-BAO present the standards that the operators who choose to use the standard shall meet. The terms “shall” and “must” are used to indicate a standard that must be met, and the term “should” is used to indicate a recommended practice. The recommended practices, which are shown in *italics*, are also presented for the operator's consideration.

A comprehensive Safety Management System (SMS) Toolkit is available to facilitate development of that system.

The guidance material presented in Appendix B, IS-BAO Implementation Guide (IG), was developed to assist operators in meeting the standards, but is not the only acceptable means of doing so. Operators are free to develop their individual means of compliance should they wish to do so. While the terms “shall” and “must” are used in the IG that is presented as examples of text that operators may use, it must be understood that this is advisory material.

Additional reference documents are listed or hyperlinked.

In addition, the HAI mission specific standards are available for helicopters. Operators should see the HAI Website for further information on these standards.

2.4.2 Formatting

In the body of the document the standards are shown in normal type font and recommended practices are shown in *italic type font*. Document titles are also in *italic type font*. Sections that have been revised in this edition are marked with a sidebar.
2.5 Language of the Standard

As English is the accepted international language of aviation, and is by policy the language of the International Business Aviation Council, the IS-BAO is published in that language. The terminology and English language spelling used by ICAO has been used in this document.

2.6 Translation into Other Languages

National or regional associations that are members of IBAC or affiliates of IBAC members may, with the written permission of IBAC, translate the IS-BAO into their national language. In such cases they shall ensure accuracy of the translation and include a statement in the Preface that the "definitive" text for the IS-BAO is the English language version.

2.7 Implementation Considerations

2.7.1 Overview

The IS-BAO includes extensive guidance material that is designed to assist operators to integrate the standards into their operation. However, as the standards provide a comprehensive framework for managing the safety, security, efficiency and effectiveness of the entire operation, it must be understood that a degree of effort is required. The first thing that an operator should do is to review the IS-BAO and related documents in order to acquire a good understanding of them. When this has been achieved, an implementation plan can be developed and the work commenced. After implementation is completed operators may undergo an audit by an accredited IS-BAO Auditor and become registered as being in conformity with the IS-BAO standards.

Some operators have concluded that they did not have the time or resources to undertake implementation on their own and chose to engage an implementation support service organization to assist them. All of these considerations will be discussed in detail.

2.7.2 IS-BAO Standards

The IS-BAO standards themselves are contained in sections 3 through 15 of this document. These standards are largely performance based. That is, they describe “what” must be achieved, rather than “how” things must be done. This allows operators, including owner operators, to develop processes, procedures, systems, programs and manuals that are appropriate to their individual operation. In this context:

a. A policy is a written course of action to guide and determine present and future decisions;
b. A process is a set of interrelated activities that use resources to transform inputs into outputs;
c. A procedure is a series of steps followed in a methodical manner to complete an activity – what shall be done and by whom, when, where, and how it shall be completed; what materials, equipment, and documentation shall be used, and how it shall be controlled;
d. A system is a set of interrelated elements; and

e. A program is a set of arrangements that are intended to achieve a specific purpose.

While the standards include most of the usual subjects addressed in similar standards, the one significant difference is the requirement for operators to develop a safety management system (SMS). An SMS is an evolution of the traditional flight safety program that incorporates some of the principles found in quality systems.
The SMS is the cornerstone of the IS-BAO and the element that makes the other performance based standards effective. It must be understood that the SMS is not a stand-alone system - it is in fact intrinsically linked to all of the standards. It is a system where operators identify the hazards and associated safety-risks that are inherent in their individual operation and then develop appropriate strategies, to either eliminate the hazards or reduce the level of risk to an acceptable level. These strategies are then tracked to ensure that the mitigation is appropriate and effective. The tracking system also allows operators to identify latent or emerging safety-risks and deal with them before an occurrence. More information related to SMS is available in the IBAC SMS Toolkit and the IHST SMS Toolkit and the references cited in IG 3.2 of the IS-BAO.

While the IS-BAO standards are based on “best practices” initially derived from the approximately 100 flight departments that were involved in the development process, they are also structured to meet the standards and recommended practices established by ICAO in Annex I Personnel Licensing, Annex 6 Part II Operation of Aircraft, International General Aviation – Aeroplanes, and Annex 6 Part III International Operations Helicopters, plus other related annexes and manuals. In several cases notations are made in the standards to provide for operators to choose to meet their national standards for operations within their domestic airspace. However, operators who chose to do so must be aware that they are required to meet the applicable international or State rules when operating outside of their domestic airspace.

2.7.3 Implementation Guidance Material

Guidance material in the IG is cross-referenced to the applicable standard. For example, the standard for safety management systems is contained in section 3.2. IG 3.2 then presents guidance material for the development of the operator’s safety management system. Additionally, IG 3.2 provides reference to the SMS Toolkit and other guidance material for developing a safety management system. In numerous instances, rather than reproduce material from other sources, it is referenced as guidance material. For example, in IG 6.1, several sources of guidance material for development of standard operating procedures are referenced.

As notable guidance material is identified, reference to it is included in the IS-BAO Newsletters. This information is sent via e-mail to all IS-BAO holders and is also posted on the IBAC web site at http://www.ibac.org/is_bao/newsletter.

Additional policy information is available on the IBAC website. Policy letters can be found through the following link: http://www.ibac.org/is_bao/policies.

2.7.4 Determining Implementation Strategy

Once an understanding of the IS-BAO system and related requirements has been developed the next step in the process is for the operator to determine:

a. what is already in place,
b. what processes, procedures, programs, systems and documentation need to be modified, and
c. what needs to be developed?

Experience has shown that many operators have a good percentage of the processes, procedures, systems, programs and documentation already in place. There may be a need to fine tune some, to make more extensive modification to some and to establish others. It must be stressed that a basic concept of the IS-BAO is that the processes, procedures, systems, programs and documents must be appropriate to the nature of the individual operation. It is not desirable to develop ones...
that are more involved and complex than is necessary to manage the safety, security, efficiency and effectiveness of the operation. In fact, if they are unnecessarily complicated they probably will not be used and the potential benefits will be lost. On the other hand, if they are too rudimentary they probably will not be effective. Therefore, it is recommended that the “appropriateness” and “effectiveness” test be rigorously applied.

It is highly recommended that as many members of the organization or operation as possible, be involved in determining what is needed to implement the standard. It will help to create “buy-in” to the process and it also may be a way to identify latent talent within the organization that can be utilized in the implementation process. It is also very important to obtain senior management buy-in early in the process. Their support is essential to ensuring a smooth and successful implementation.

Some operators have found it valuable to also involve an accredited IS-BAO auditor in the gap analysis process. While it would be a conflict of interest for the auditor to provide consulting services and then audit their work, it is acceptable for the auditor to be involved during the implementation process and to make assessments of work, required, planned or underway, and to provide strategic guidance to assist operators with the implementation process. A list of accredited auditors is posted at http://www.ibac.org/is_bao.

Assistance in the assessment process and in developing the implementation strategy is also available from some of the implementation support service providers that are listed on the IBAC web site at http://www.ibac.org/is_bao.

At this point the operator should be in a position to estimate the effort and time required to complete IS-BAO implementation. The time required to complete the implementation process depends on the size and complexity of the operation, the maturity of the operator’s existing procedures, programs and manuals, and the extent that the operator needs, or chooses, to modify them and the level of resources dedicated to the project. Some operators have been able to complete the process in a few weeks and others have taken several months to a year.

Operators that conclude that they do not have the time or resources to undertake IS-BAO implementation on their own may choose to engage an implementation support service provider to assist them. A list of organizations or individuals that provide IS-BAO implementation support services is posted at http://www.ibac.org/is_bao.

IBAC recognizes aviation support services organizations that have demonstrated knowledge of the IS-BAO and are in the business of providing services or products to aircraft operators. When conditions required under IBAC policy are satisfied, the recognized organization will be designated an “IBAC International Standards Support Services Affiliate” and IBAC includes its name on lists maintained on the IBAC website. Operators who use their services will be aware that the service provider has a basic understanding of the requirement of the IS-BAO as it pertains to the service or product being provided. If an operator choses the option to engage an implementation support service provider, it is very important to ensure that the operator continues to be fully engaged in the process.
Another important resource that is available is the Fundamentals of IS-BAO Workshop. IBAC regularly holds workshops that are designed to assist operators to implement the IS-BAO. The workshop schedule is posted at IS-BAO Workshop Information. The workshops are a full day – 0800 to 1600 hrs. The workshop includes a discussion of:

- the background, philosophy and benefits of the IS-BAO program,
- the standards and recommended practices,
- safety management systems (SMS) and the implementation process, and
- the IS-BAO audit and registration process.

To assist operators with their SMS development, two SMS eLearning courses are available. See the following link: SMS e-Learning.

2.7.5 The Implementation Process

Once the implementation strategy has been developed it is recommended that a more detailed plan with a time frame and milestones be developed. This will assist in maintaining focus and momentum. It is very important to maintain momentum particularly if there is a considerable level of effort required.

The usual first implementation step is to conduct an assessment of the hazards and the associated safety-risks that are inherent in the operation. The SMS Toolkit and Guidelines for the Conduct of Risk Analysis by Business Aircraft Operators, which is part of the IS-BAO e-document suite, provide details on the process and related tools. Again, experience has shown that it is beneficial to involve as many of the flight department or flight operation staff members as possible in the process. Different perspectives add to the effectiveness of the process and should provide synergy.

Once the process of identifying the inherent hazards and associated safety-risks and developing appropriate mitigation strategies has been completed, the operator will have an enhanced framework to assist in developing, or modifying, their processes, procedures, systems, programs, and documents. It must be stressed that the “appropriateness” and “effectiveness” test should be applied. If many of the existing systems are paper based, do not try to mix in complex automated systems. On the other hand, if there is a high degree of automation in the operation, don’t mix in complex paper systems. Make sure that everything fits together in an integrated systematic manner and reflects the individual aspects of the operation.

In the implementation process operators are encouraged to make maximum use of the guidance material referenced in the IS-BAO standards and GMs. Use of this material should facilitate the process. Although a helicopter specific version has not been developed, one tool that may be helpful is the generic company operations manual (GCOM) that is part of the IS-BAO e-document suite. There are three different GCOMs. The Regular version is designed to provide a template for operators who fly global operations. The Small Operator version is tailored for the one airplane operator who flies primarily in domestic airspace. There also is third GCOM structured for single pilot operations.

Operators can chose to use the GCOM if they wish, or they can use any other format for their company operations manual as long as it contains the required information. It is recognized that most regulatory authorities specify the content and structure of the operations manual used by operators engaged in commercial air transport operations. If another operations manual format is being used, it may be helpful to use the GCOM as a reference to help ensure that the required
information is included. At the same time it must be stressed that the process, procedures, etc. must not be simply copies of guidance material. They must reflect the reality of the operation.

Note: The term “company operations manual” has been used as it is the term used for the related IS-BAO documents. Operators may use the any term they consider appropriate when referring to their operations manual.

Some operators have advised that the IS-BAO implementation process was a very effective team building exercise. They achieved this result by ensuring that there was full involvement of all personnel involved in the operation. If the use of a support service provider has been the chosen option, it is very important to ensure that the flight department/operation continues to be fully engaged in the process.

During the implementation process it may be advantageous to refer to the IS-BAO Audit Procedures Manual that is part of the IS-BAO e-document suite. The IS-BAO Audit Protocol that is in the document is the same checklist that the IS-BAO auditor will use. Also, chapter 5 of that manual, Evaluating the Operator’s SMS, may be especially helpful in the SMS development process. As previously noted, an SMS Toolkit containing extensive references and examples is provided in the IS-BAO e-document suite.

Because the IS-BAO is designed with ISO-9000 principles in mind, the operator should document ALL key safety-related processes in their organization, to include specific supporting procedures and process ownership for accountability.

2.7.6 Audit Preparation

When the implementation process is nearing completion arrangements should be made for a registration audit. When engaging the auditor it is recommended that agreement be reached on the scope of the audit and an audit plan.

The duration of the audit will depend on the size and complexity of the operation and the degree of preparedness. As part of the audit preparation process, well in advance of the audit, operators should provide the auditor with a filled-in copy of the IS-BAO Audit Protocol that identifies the location of each of the audit elements in the operator’s documents or systems, as well as copies of all relevant manuals. This should be discussed with the auditor. Essential information regarding IS-BAO audit procedures, SMS evaluation, and associated audit terminology is provided in the IS-BAO Audit Procedures Manual provided in the IS-BAO e-document suite.

In the initial audit the auditor will be assessing the soundness and appropriateness of the operator’s SMS and all of the required processes, procedures, systems, programs, and documents. In subsequent registration renewal audits the auditor will be looking for evidence of effectiveness and continuous improvement. During the audit the auditor will review documents and interview people. Everyone’s cooperation will make the auditor’s task easier and should assist in maximizing the value of the audit.

IBAC maintains an audit quality assurance program that includes monitoring a percentage of the registration audits. The Monitors are either IBAC staff or persons designated by the IS-BAO Standards Board. The Monitors will only observe the audit and will not become involved in the audit process. Auditors and the operator will be advised in advance if an audit will be monitored.
When the audit has been successfully completed operators may apply to IBAC for registration. A registration application form or renewal application form, as applicable, will be forwarded to you by the Audit Manager after the audit is accepted by IBAC.

Helicopter operators who have successfully completed the IBAC Registration process may apply for mission specific accreditation by the HAI. In addition to an IS-BAO audit, the accreditation process will include on site evaluation of helicopter mission specific criteria related to the type of operations conducted by the operator. Additional information on the helicopter mission specific standards and related processes is available at http://www.rotor.com/.

2.7.7 System Maintenance

The process of managing the safety, security, efficiency and effectiveness of a flight operation is a dynamic process. It is important the operator’s SMS and the IS-BAO elements are considered “living systems” that are fully integrated into day-to-day activities. Effective use of the operator’s SMS is a very powerful tool for enhancing the efficiency and effectiveness of the operation. It has the potential to provide benefits that exceed the costs associated with IS-BAO implementation.

Operators may desire to conduct internal audits to determine their preparedness for an IS-BAO registration audit, or as a means to assess the appropriateness and effectiveness of their safety management activities on an on-going basis. An internal audit program can be an effective element of continuous improvement through on-going safety management that is a key aspect of the IS-BAO. The IS-BAO Audit Procedures Manual provided in the IS-BAO e-document suite can help in developing an internal audit program.

2.7.8 Keeping IS-BAO Current

These standards are revised annually to incorporate emerging international standards and industry best practices. However, many of the changes applied annually come from suggestions made by IS-BAO registrants and industry sources. Users are encouraged to submit recommended changes to the standard via the IS-BAO Improvement Form. Recommended changes are reviewed by the IS-BAO Standards Board for acceptance and inclusion in the annual revision.

Revisions to the IS-BAO and related material are posted on a secure page of the IBAC web site in January each year. At that time an e-mail message will be sent to each recorded IS-BAO holder who has previously elected to receive an e-version of the revision, advising them that the amendments are available for download. Consequently, it is important that IS-BAO holders ensure that the IBAC office has the current name and e-mail address for the person responsible for custody of the IS-BAO in your organization. Such information should be sent to administration@ibac.org. Also, if you don’t receive an e-mail message by mid-January advising of the availability of the download of the amendments, please send a message to administration@ibac.org, identifying yourself as a standards holder who has not received the amendment information.
3. Safety Management Systems

3.1 General

While the following chapters provide specific standards for the structuring, staffing and operation of an aircraft operation, this chapter provides the framework and description of each element of the framework, for the implementation and maintenance of an overall safety management system. This framework is designed to assist the management of the organization and provide focus in the prime goal of providing safe and efficient air transportation.

3.2 Safety Management System Requirements

An SMS is a management system for the management of safety by an organization. The framework includes four components and twelve elements representing the minimum requirements for SMS implementation. Every aircraft operator must establish and maintain a safety management system appropriate to the size and complexity of the operation and that consists of the following four components and twelve elements.

Note: IG 3.2 and the SMS Toolkit (included with the IS-BAO) contain guidance material to assist with the development and implementation of a SMS.

3.2.1 Safety Policy and Objectives

a. Management Commitment and Responsibility

The organization shall define the organization’s safety policy, which shall be in accordance with international and national requirements, and which shall:

1. reflect organizational commitment regarding safety;
2. include a clear statement about the provision of the necessary resources for the implementation of the safety policy;
3. include safety reporting procedures;
4. clearly indicate which types of behaviours are unacceptable related to the organization’s aviation activities and include the circumstances under which disciplinary action would not apply;
5. be signed by the accountable executive of the organization;
6. be communicated, with visible endorsement, throughout the organization; and
7. be periodically reviewed to ensure it remains relevant and appropriate to the organization.

Note 1: To gauge appropriateness, the safety policy should be relevant to the scope and complexity of the organization’s operations, and everyone should be aware of the safety policy.

Note 2: To determine effectiveness, the safety policy should be reinforced by day-to-day decisions, and everyone should be committed to enhancing safety performance.
b. Safety Accountability and Responsibilities

The organization shall:

1. identify the accountable executive who, irrespective of other functions, has ultimate accountability for the safety performance of the organization;
2. clearly define safety responsibilities throughout the organization, including a direct responsibility for safety on the part of senior management;
3. identify the responsibilities of all members of management, irrespective of other functions, as well as of employees, with respect to the safety performance of the SMS;
4. document and communicate safety responsibilities, accountability and authorities throughout the organization; and
5. define the levels of management with authority to make decisions regarding safety risk tolerability.

Note 1: To gauge appropriateness, the accountable executive should indicate his/her ultimate accountability for the safety performance of the organization.

Note 2: To determine effectiveness, 1) resources should be available to manage risks effectively, and 2) the AE should review and ensure that the safety risks are reduced to a level as low as reasonably practical.

c. Appointment of Key Safety Personnel

The organization shall identify a safety manager to be the responsible individual and focal point for implementation and maintenance of an effective SMS.

Note 1: To gauge appropriateness, the safety manager should be properly trained.

Note 2: To determine effectiveness, the results of safety management activities should be formally recorded and analyzed.

Note 3: In a small operation the manager of the organization would be this individual.

d. Coordination of Emergency Response Planning

The organization shall ensure that an emergency response plan is properly coordinated with the emergency response plans of those organizations it must interface with during the provision of its services.

Note 1: To gauge appropriateness, the ERP should be regularly reviewed and updated and it should address likely emergency scenarios including coordination with other organizations as appropriate.

Note 2: To determine effectiveness, the ERP should be regularly tested, and there should be evidence that any lessons learned from testing are being applied.
e. **SMS Documentation**

1. The organization shall develop an SMS implementation plan, formally endorsed by the organization, which defines the organization’s approach to the management of safety in a manner that meets the organization’s safety objectives.

2. The organization shall develop and maintain SMS documentation that describes its:

   i. Safety policy and objectives;
   
   ii. SMS requirements;
   
   iii. SMS processes and procedures;
   
   iv. Accountabilities, responsibilities and authorities for SMS processes and procedures; and
   
   v. SMS outputs.

3. The organization shall develop and maintain an SMS manual as part of its SMS documentation.

   **Note 1:** To gauge appropriateness, the SMS documentation should be readily available to ALL personnel.

   **Note 2:** To determine effectiveness, there should be evidence that the SMS documentation is regularly reviewed and updated and the documentation should provide evidence that safety objectives are being met.

   **Note 3:** The SMSM may be a chapter in the operations manual.

3.2.2 **Safety Risk Management**

a. **Hazard Identification**

1. The organization shall develop and maintain a formal process that ensures that hazards in operations are identified.

   **Note:** A safety-risk profile should be developed to design the SMS. The profile is documented and becomes a foundation for the SMS, which is updated periodically after the SMS is implemented. See “SMS Guidance Manual” Section 9.2, in the SMS Toolkit.

2. Hazard identification shall be based on a combination of reactive, proactive and predictive methods of safety data collection.

   **Note 1:** To gauge appropriateness, 1) there should be a reporting system to capture errors, hazards and near misses that is simple to use and accessible to all personnel; and 2) there should be a procedure to review hazards/risks from external reports.

   **Note 2:** To determine effectiveness, 1) hazards, errors, near misses, and audit findings should be identified and reported throughout the organization; 2) employees should be confident they can report apparent safety deficiencies without retribution; and 3) there should be a procedure for periodic review of existing risk analysis records.
b. Safety Risk Assessment and Mitigation

The organization shall develop and maintain a formal process that ensures analysis, assessment and control of the safety risks in operations.

Note 1: To gauge appropriateness: 1) the accountable executive and management team should have visibility of medium and high risks and their controls; and 2) the Ops Manual should contain controls derived as a result of the risk assessment and mitigation process.

Note 2: To determine effectiveness, training programs should highlight safety critical issues identified in the hazard risk analysis process.

3.2.3 Safety Assurance

a. Safety Performance Monitoring and Measurement

1. The organization shall develop and maintain the means to verify the safety performance of the organization and to validate the effectiveness of safety risks controls.

2. The safety performance of the organization shall be verified in reference to the safety performance indicators and safety performance targets of the SMS.

Note 1: To gauge appropriateness: 1) safety performance indicators (SPIs) should be established and appropriate to the type of operation and supported by measurable data that can be analyzed for trends; 2) the SPIs should include lower-consequence indicators (see terminology in Appendix A); and 3) the data related to SPIs should be analyzed and trend information should be computed.

Note 2: To determine effectiveness: 1) SPI safety data should trend toward safety targets, and 2) the operator should have a documented record of analyzing safety data trends related to SPIs and making informed decisions from this data.

b. The Management of Change

The organization shall develop and maintain a process to identify changes which may affect the level of safety risks associated with its services and to identify and manage the safety risks that may arise from those changes.

Note 1: To gauge appropriateness: 1) stakeholders should be involved in the change management process; and 2) changes to critical documents should be communicated throughout the organization.

Note 2: To determine effectiveness: 1) the organization should use the SMS to proactively assess all major changes to the organization and its operations; and 2) there should be evidence that documents, manuals, and checklists have been updated in a timely manner.

c. Continuous Improvement of the SMS

The organization shall develop and maintain a formal process to identify the causes of sub-standard performance of the SMS, determine the implications of sub-standard performance of the SMS in operations, and eliminate or mitigate such causes.
3.2.4 Safety Promotion

a. Training and Education

1. The organization shall develop and maintain a safety training programme that ensures that personnel are trained and competent to perform their SMS related duties.

2. The scope of the safety training shall be appropriate to each individual’s involvement in the SMS.

Note 1: To gauge appropriateness, training should include human and organizational factors with the intent of reducing human error.

Note 2: To determine effectiveness: 1) there should be evidence that all personnel involved in SMS operations have undergone appropriate SMS training; and 2) executives, managers, and staff should be capable of performing their roles to proactively manage safety.

b. Safety Communication

The organization shall develop and maintain formal means for safety communication that:

1. Ensures personnel are aware of the SMS to a degree commensurate with their positions;
2. Conveys safety-critical information;
3. Explains why particular safety actions are taken; and
4. Explains why safety procedures are introduced or changed.

Note 1: To gauge appropriateness, significant events and investigation outcomes from internal and external sources should be communicated to all personnel.

Note 2: To determine effectiveness: 1) there should be evidence that all personnel are aware of the SMS, safety critical information, and their role in respect of aviation safety; and 2) there should be consistent feedback to encourage the future participation of employees.

3.3 Compliance Monitoring

Each aircraft operator must establish and maintain a system for identifying applicable regulations, standards, approvals and exemptions and demonstrating compliance with them.

Note 1: As the IS-BAO has been developed to meet the requirements of ICAO Annex 6 Part II Operation of Aircraft – International General Aviation – Aeroplanes and Annex Part III
Section III Operation of Aircraft – International General Aviation – Helicopters, such compliance monitoring is important for operators conducting commercial operations and for operators where the rules of the State of Registry may contain provisions that are more demanding than Annex 6 Part II.

Note 2: Guidance material on compliance monitoring systems in contained in the SMS Toolkit.

3.4 Flight Data Analysis (FDA)

It is recommended that operators establish and maintain a flight data analysis programme as part of a safety management system.

Note 1: Flight data analysis programs are also known as corporate flight operational quality assurance (C-FOQA) programs.

Note 2: The FDA program should be an integral part of the operator’s SMS. For information on implementing a FDA program go to http://www.ibac.org/Files/is-bao/FDAP.pdf
4. Organization and Personnel Requirements

4.1 Organization and Personnel

4.1.1 An organization shall be staffed by qualified, competent and effective management and line personnel to ensure the safe and efficient operation of the organization. An operator shall have an organization structure that clearly defines qualifications, duties, authorities and accountabilities and that is staffed by qualified managerial and operating personnel who are capable of effectively carrying out the identified duties. The minimum management personnel are:

- a person having overall management responsibilities for the flight operation (such as a “Flight Department Manager” or “Director of Operations”),
- a person responsible for managing the flying operations (such as a “Chief Pilot/Operations Manager”), and
- a person responsible for managing aircraft maintenance.

In the case of a small operation one person may occupy, or perform the functions of, two or more of the positions.

Note: While the ICAO definition of maintenance includes both the performance of maintenance and the tasks required to ensure the continuing airworthiness of an aircraft the European rules differentiate between the two activities. Hence, for operators of large aeroplanes (maximum certificated take-off mass in excess of 5 700 kg or multi-engine helicopters), or any aircraft performing commercial air transport or aerial work who fall under EASA rules, the organisation may need to be approved for the maintenance (MRO) and continuing airworthiness management (CAMO) or may contract such approved organisations under certain conditions.

4.1.2 Where the organization has more than one operating base the management structure must address the exercise of the above responsibilities at all locations.

Note: IG 4.1 contains a recommended organization structure and the associated duties and responsibilities for management personnel. The IG also includes responsibilities and qualifications for a safety officer.

4.2 Aircraft Crew Member Duties and Responsibilities

4.2.1 The minimum aircraft crew shall consist of the number of qualified flight crew as specified in the aircraft flight manual or other documents associated with the certificate of airworthiness. The minimum number of cabin crew members shall be in accordance with national requirements.

4.2.2 An operator shall designate a pilot-in-command for each flight and, where the crew includes two pilots, a second-in-command.

4.2.3 The pilot-in-command shall be responsible for the operation, safety and security of the aircraft and the safety of all crew members, passengers and cargo on board. Specific duties and responsibilities shall include:

- ensuring that a flight will not be commenced if a flight crew member is incapacitated from performing duties by any cause such as injury, sickness, fatigue, or the effects of any psychoactive substance,
b. ensuring that the flight will not be continued beyond the nearest suitable aerodrome or heliport¹, when a flight crew member’s capacity to perform functions is significantly reduced by impairment of faculties from causes such as fatigue, sickness or lack of oxygen,

c. responsibility for operational control. An operator shall describe the operational control system in the operations manual and identify the roles and responsibilities of those involved with the system,

d. responsibility for the security of the aircraft during its operation,

e. checking and assessing weather and all applicable NOTAMs where available,

f. determining fuel, oil and oxygen requirements,

g. determining the aircraft weight/mass and balance limits,

h. ensuring that all flight planning requirements have been met,

i. ensuring that the aircraft is airworthy, duly registered and that the documentation and operational information specified in section 8.3.1 are on board the aircraft.

j. completing an aircraft pre-flight inspection as per the aircraft flight manual, before each departure,

k. briefing the passengers in accordance with the requirements specified in section 6.11,

l. operating the aircraft in accordance with operator procedures and aircraft limitations,

m. completing all post flight duties as specified in the company operations manual, recording flight times and aircraft defects,

n. notifying the nearest appropriate authority by the quickest available means of any accident involving the aircraft, resulting in serious injury or death of any person or substantial damage to the aircraft or property,

o. ensuring that a suspected communicable disease is reported promptly to air traffic control, in order to facilitate provision for the presence of any special medical personnel and equipment necessary for the management of public health risks on arrival,

p. submitting a report to the designated local authority following an act of unlawful interference,

q. completing the journey log book or the general declaration, and

Note: By virtue of Resolution A10-36 of the Tenth Session of the Assembly (Caracas, June–July 1956) “the General Declaration, [described in Annex 9] when prepared so as to contain all the information required by Article 34 [of the Convention on International Civil Aviation] with respect to the journey log book, may be considered to be an acceptable form of journey log book”.

r. as soon as possible, report to the appropriate air traffic services (ATS) unit any hazardous weather or flight conditions encountered that are likely to affect the safety of other aircraft.

4.2.4 The second-in-command, when required, reports to the pilot-in-command and will carry out any duties delegated by that person.

4.2.5 Cabin crew and other crew members assigned to perform duties on board, are responsible to the pilot-in-command to carry out specified safety duties in the event of an on-board emergency. The requirement for cabin crew for each type of aircraft shall be determined by the operator, and in accordance with national regulations, based on seating capacity or the number of passengers carried, in order to effect a safe and expeditious evacuation of the aircraft, and the necessary

¹ Heliports may include temporary landing sites or operating areas.
functions to be performed in an emergency or a situation requiring emergency evacuation. The operator shall assign these functions for each type of aircraft.

### 4.3 Crew Member Qualification

#### 4.3.1 An operator shall ensure that:

a. the flight crew of an aircraft:
   i. holds the licence, medical certificate and ratings (including radiotelephony licence unless it is included in the pilot licence) required by national regulations,
   ii. meets all recency requirements of the national regulations,
   iii. meets the licence, medical and rating requirements specified in *ICAO Annex 1* when operations are conducted outside of the national airspace of the State of issue of the flight crew licence,
   iv. has fulfilled the requirements of the operator's ground and flight training programme referred to in sections 5.1, 5.2, 5.3 and 5.4,
   v. have successfully completed the proficiency requirements specified in section 5.5 for that type of aircraft, and
   vi. can demonstrate the capability to speak and understand the language used for aeronautical radiotelephony communications as specified in *ICAO Annex 1*;

b. each cabin crew member has fulfilled the requirements of the national regulations and the operator's ground and flight training programme referred to in sections 5.1, 5.2 and 5.3, and recommended in section 5.4; and

c. each crew member or task specialist, other than a flight crew member or a cabin crew member, who is assigned duties on board an aircraft during flight time has fulfilled the requirements of the operator's ground and flight training programme referred to in section 5.1.

#### 4.3.2 It is recommended that where it is the operator’s practice to normally fly two crew aeroplanes from the left seat, that the operator establish right seat landing and take-off recency/training and recency requirement for pilots.

#### 4.3.2.H It is recommended that where it is the operator’s practice to normally fly two crew helicopters from the right seat, that the operator establish left seat landing and take-off recency/training and recency requirement for pilots.

### 4.4 Maintenance Personnel Qualifications

#### 4.4.1 Aircraft maintenance personnel shall hold a licence and ratings as specified in the State of Registry or State of Operator’s regulations that are appropriate for the aircraft on which the person does work. Other qualifications and recency requirements are contained in Chapter 9.0, Aircraft Maintenance Requirements and IG 9.1. Training requirements are contained in Chapter 5.0, Training and Proficiency.

### 4.5 Other Personnel

#### 4.5.1 Depending on the size and functions, a number of other personnel specialities may be required to ensure the proper performance of the organization. These specialities may include flight operations schedulers or dispatchers, helicopter ground support personnel, security personnel, administrative personnel, hangar maintenance and line service personnel. Additionally, the
operation may include personnel (medical providers, operators of specialized equipment, news reporters, etc.) that are not employees of the operator but perform duties that are essential to the operation. The duties, authorities, and responsibilities for other personnel shall be described within the company operations manual. All personnel shall be trained commensurate with their duties and responsibilities.

Note: Sample position descriptions may be found in IG 4.1. For operators with dedicated scheduler/dispatcher functions, see the IG for example qualifications and duties.

4.6 Use of Psychoactive Substances

4.6.1 It is recommended that operators develop policies on the use of psychoactive substances to ensure that holders of licences do not exercise the privileges of their licences and other personnel do not undertake safety related duties while under the influence of any psychoactive substance which might render them unable to safely and properly exercise their licence privileges or carry out their safety related duties.

4.6.2 It is recommended that these policies also address any problematic use of substances.

Note: Psychoactive substances include alcohol, opioids, cannabinoids, sedatives and hypnotics, cocaine, other psychostimulants, hallucinogens, and volatile solvents, whereas coffee and tobacco are excluded.

4.7 Mobile Phones and other Portable Electronic Devices (PED)

It is recommended that the operator provide guidance on the use of mobile phones and PED for all personnel, including critical phases of flight and ground operations, operating vehicles, and maintenance work.

| 4.8 | Reserved |

| 4.9 | Supplemental Lift/Additional Air Transport Capacity

4.9.1 The operator should have a process to ensure that any operator contracted for additional air transport capacity is qualified and competent to perform operations safely and effectively. (Recommended Practice)
5. Training and Proficiency

5.1 Training Programmes

5.1.1 Crew members must maintain a level of proficiency that will ensure their ability to operate the aircraft and cope with emergency situations. The operator shall establish and maintain a training programme that is designed to ensure that a person who receives training acquires the competence to perform their assigned duties. The training program shall include initial and recurrent training and include all equipment installed on the aircraft that the crew member flies.

Note: Additional guidance material on development of training and proficiency programs is contained in IG 5.1. Also, the NBAA Prototypical Business Aviation Safety Program Manual and related attachments that can be found at http://web.nbaa.org/public/ops/safety/manual may provide operators with assistance.

5.1.2 An operator shall ensure that ground and flight training programmes have been established, either through an internal programme or through a training service provider, and shall include or make reference to, a course outline for those training programmes in its operations manual.

5.1.3 The operator's ground and flight training programme shall include:

a. for flight crew members:
   i. initial and annual aircraft type and systems training including emergency and abnormal procedures related to the aircraft category and type,
   ii. initial and every two years thereafter:
      A. aircraft surface contamination training, and
      B. dangerous goods training, (see section 14.1.3)
   iii. upgrading training, and
   iv. it is recommended that operators that do not use cabin crew members provide periodic first aid training for flight crew member;

b. for cabin crew members:
   i. initial and annual aircraft specific cabin systems training, and
   ii. initial and every two years thereafter:
      A. first aid training,
      B. aircraft surface contamination training, and
      C. dangerous goods training; (see section 14.1.3)

c. initial and recurrent training for other personnel and task specialists (such as loadmasters, stewards, HEMS medical teams, observers, etc.) who are assigned to perform duties on board an aircraft during flight time or provide operational ground support;

d. initial and recurrent training for schedulers and dispatchers; and
e. any other training required to ensure a safe operation.

Note: Such training, as applicable to the individual operation, may include:
   i. CAT II and CAT III operations,
5.0 Training and Proficiency

ii. RVSM, PBN, RNP operations,
iii. MEL procedures,
iv. FSF: Approach and Landing Accident Reduction,
v. aircraft upset recovery, (Note - This can be done in most modern flight simulators),
vi. dynamic rollover, loss of tail rotor effectiveness and vortex ring for helicopters,
vii. specialized mission training where applicable,
viii. international airspace operations,
ix. aircraft servicing and ground handling,
x. EFIS, FMS, ACAS and HGS,
xi. signalling procedures for aircraft marshallers, and
xii. items included in 5.1.6.d.

5.1.4 No emergency or abnormal situations shall be simulated during flight when passengers are being carried.

5.1.5 It is recommended that flight simulators be used for flight training to the maximum degree practicable. Industry best practices are to use flight simulators for initial and annual recurrent training.

5.1.6 Maintenance Personnel Training Program

a. An operator shall establish and maintain training programmes that are designed to ensure that all maintenance personnel have the competencies appropriate to the levels of maintenance performed and the frequency with which the maintenance is performed.

b. An operator shall ensure that the training programmes have been established, either through an internal programme, an aircraft manufacturer or a training service provider, and include or make reference in the Company Operations Manual to a training course outline for those training programmes.

c. The training programme should include other subjects such as:

i. operator policies and procedures;
ii. computer skills and software applications used by the organization;
iii. interpersonal skills;
iv. human factors;
v. leadership and teamwork;
vi. HAZMAT;
vii. MEL procedures;
viii. safety procedures, and
ix. safety risk management.

d. It is recommended that persons who hold maintenance release authority undertake recurrent training at least every two years on any aircraft group, type or system for which they exercise that authority.

5.2 Human Factors (HF) and Crew Resource Management (CRM) Training

5.2.1 The operator's training program shall ensure that all aircraft crew members are trained in CRM principles.
5.2.2  Schedulers, dispatchers, maintenance personnel and all others connected with the operation should receive HF training. *(Recommended Practice)*

5.2.3  *Recurrent CRM and HF training should be provided at least every 24 month, as applicable, to all personnel. *(Recommended Practice)*

*Note: Information on CRM and Human Factors training can be found in the IG.*

5.3  **Emergency Procedures Training**

5.3.1  **Aircraft Type and Equipment**

   a. Emergency procedures training for each type of aircraft is required for all aircraft crew members and shall include instruction on the location and operation of all emergency equipment.

   b. The initial and recurrent training programme shall include training to competency for all emergency and life-saving equipment installed, as well as drills in the emergency evacuation of the aircraft.

   c. Emergency procedures recurrent training shall be accomplished at least every 24 months.

   *Note: See IG 5.3.1 for information on emergency procedures training.*

5.3.1.1  *It is recommended, particularly for aircraft without cabin attendants, that passengers that fly frequently receive emergency procedures training. *(Recommended Practice)*

*Note: See IG 5.3 for information on Cabin Crew safety procedures training.*

5.3.2  RESERVED

5.3.3H  *It is recommended that helicopter underwater escape training (HUET) be provided to personnel involved in over water helicopter operations in hostile environmental conditions. *(Recommended Practice)*

5.4  **High Altitude Training**

5.4.1  High altitude training is required for all flight crew members operating aircraft above 10,000 ft. ASL and is recommended for other crew members. It shall cover at least the following:

   a. physiological phenomena in a low pressure environment, including:
      i. respiration,
      ii. hypoxia,
      iii. duration of consciousness at altitude without supplemental oxygen, and
      iv. gas expansion and gas bubble formation; and

   b. for pressurized aircraft phenomena associated with rapid or explosive loss of pressurization including:
      i. most likely causes,
      ii. noise,
      iii. cabin temperature change,
iv. cabin fogging,
v. effects on objects located near the point of fuselage failure, and
vi. actions of flight crew members immediately following the event and the likely resultant attitude.

Note: While the specified requirements do not include altitude chamber training, it is recognized that it is very beneficial to pilots in assisting them to understand their individual symptoms of hypoxia and the physiological impact of sudden decompression. Altitude chamber training is available from a variety of sources such as flight training schools, military establishments or hospitals, and it is encouraged early in the career of business aviation pilots.

Note: Hypoxia awareness training is also available from training service providers through the use of mixed gas devices, or through normobaric technology that simulates an oxygen deficient environment.

5.4.2 It is recommended that high altitude training items that are pertinent to the aircraft type be covered during initial aircraft type training.

5.5 Proficiency Certification

5.5.1 National civil aviation regulations vary in the requirements and processes for proficiency certification for aircraft crew members. Operators must ensure that personnel meet national proficiency requirements and shall have processes to ensure that the training objectives for all crewmember training courses required by the national civil aviation authority are met.

5.5.2 The Chief Pilot/Operations Manager is responsible for the proficiency of pilots and for ensuring that the proficiency is certified through a pilot proficiency check (PPC) conducted:
   a. at the conclusion of initial aircraft type training, and
   b. at a minimum of every 24 calendar months thereafter.

5.5.3 Such pilot proficiency checks shall be conducted by:
   a. an approved national civil aviation pilot examiner, e.g. Type Rating Testing Officer,
   b. a company check pilot approved or designated, by the State civil aviation authority,
   c. a pilot examiner that holds approval authority from an ICAO Contracting State, or
   d. the Chief Pilot/Operations Manager.

Pilot proficiency may also be certified by training to proficiency using the same standard.

Note: Most States have specific test standards for conducting pilot proficiency checks. In the absence of specific test standards, a range of practical test standards that operators may use to conduct a PPC or for training to proficiency can be downloaded from the following civil aviation authority web sites:

- FAA Practical Test Standards
- UK CAA Flight Crew Standards Documents
5.6 Training and Qualification Records

5.6.1 An operator shall meet the national requirements for training records and at least for each person who is required to receive training, establish and maintain a record of:
   a. the person's name and, where applicable, personnel licence number, type and ratings;
   b. if applicable, the person's medical category and the expiry date of that category;
   c. the dates on which the person successfully completed any required training, pilot proficiency check or examination;
   d. information relating to any failure of the person to successfully complete any required training, pilot proficiency check or to obtain any required qualification; and
   e. the type of aircraft or flight training equipment used for any training, pilot proficiency check or required qualification.

5.6.2 An operator shall retain these records and copies of pilot proficiency checks, or ensure that they are retained by the training service provider, for at least three years. The results of the most recent written examination completed by each pilot for each type of aircraft for which the pilot has a qualification shall also be retained.

5.6.3 The operator shall maintain training records for all members of the organization.

Note: Given technological capabilities, electronic records for training, as well as other purposes, may be most effective. In such cases, operators may wish to consider procedures to protect their integrity and make them verifiable.
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6. Flight Operations

6.1 Standard Operating Procedures

6.1.1 Standard operating procedures (SOPs) are the foundation of effective crew coordination and a key component of crew resource management and threat and error management (CRM/TEM).

a. Accordingly, operators of aircraft with two or more crew members shall establish and maintain a SOP for each type of aircraft operated that enable the crew members to operate the aircraft effectively and within the limitations specified in the aircraft flight manual.

b. Operators of single pilot aircraft shall establish and maintain an SOP for each type of aircraft operated that enables the pilot to operate the aircraft effectively and within the limitations specified in the aircraft flight manual.

Note 1: The Single Pilot Supplement contained in Appendix B provides guidance on SOPs for single pilot aircraft.

Note 2: SOPs are also included in the helicopter specific mission standards.

6.1.2 An operator that has established SOPs for an aircraft shall ensure that all crew members are trained in their use and that they are used by the crew members.

6.1.3 A copy of the SOP shall be issued to each aircraft crewmember.

6.1.4 A copy of the SOP shall be carried on board the aircraft when it is operated more than 25 nm from home base.

Note 1: IG 6.1 provides an acceptable means of conformance with this standard. Also, the NBAA provides comprehensive guidance material on standard operating procedures for both fixed and rotary wing aircraft. It can be found in the NBAA website at https://www.nbaa.org/admin/sms/safety-best-practices/.

Note 2: The HAI has produced mission specific standards that include SOPs. Information on these mission specific standards can be found at: http://www.rotor.com/.

Note 3: Runway incursions have sometimes led to serious accidents with significant loss of life. Although they are not a new problem, runway incursions have been on the rise along with increasing air traffic. This issue is addressed in ICAO Doc 9870 Manual for Preventing Runway Incursions and excerpts from the Manual are contained in IG 6.1. Operators are encouraged to incorporate runway incursion prevention procedures in their SOPs.

6.2 Flight Planning and Pre-Flight Requirements

6.2.1 General

6.2.1.1 Before commencing a flight or series of flights, the pilot-in-command of an aircraft shall be familiar with the available flight information that is appropriate to the intended flight. The pilot-in-command shall not commence a flight unless it has been ascertained that the facilities available and directly required for such flight and for the safe operation of the aircraft are adequate, including communication facilities and navigation aids.
Note: Information for pilots on flight procedure parameters and operational procedures is contained in PANS-OPS, Volume I. Criteria for the construction of visual and instrument flight procedures are contained in PANS-OPS, Volume II. Obstacle clearance criteria and procedures used in certain States may differ from PANS-OPS, and knowledge of these differences is important for safety reasons.

6.2.1.2 Before commencing a flight or series of flights, the pilot-in-command shall be familiar with all available meteorological information appropriate to the intended flight. Preparation for every flight shall include:
   a. a review of available current weather reports and forecasts; and
   b. the planning of an alternative course of action to provide for the eventuality that the flight cannot be completed as planned, because of weather conditions.

6.2.2 VFR Flight

A flight to be conducted in accordance with visual flight rules shall not be commenced unless current meteorological reports or a combination of current reports and forecasts indicate that the meteorological conditions along the route or that part of the route to be flown under the visual flight rules will, at the appropriate time, be such as to enable compliance with these rules.

6.2.3 IFR Flight

The operator shall establish procedures to ensure that:

   a. A flight to be conducted in accordance with the instrument flight rules shall not be commenced unless the available information indicates that conditions, at the aerodrome or heliport¹, of intended landing or at least one destination alternate will, at the estimated time of use, be at or above the aerodrome or heliport operating minima.

   b. A take-off alternate aerodrome/heliport shall be selected and specified in the flight plan if the weather conditions at the aerodrome/heliport of departure are at or below the applicable operating minima or it would not be possible to return to the point of departure for other reasons.

   c. For an aerodrome/heliport to be selected as a take-off alternate the available information shall indicate that, at the estimated time of use, the conditions will be at or above the applicable operating minima for that operation.

   Note 1: The State of Registry establishes criteria to be used for the estimated time of use of an aerodrome including a margin of time.

   Note 2: A widely accepted time margin for “estimated time of use” is one hour before and after the earliest and latest time of arrival.

   Note 3: Additional considerations can be found in the Flight Planning and Fuel Management Manual (Doc 9976).

¹ Heliports may include temporary landing sites or operating areas.
6.2.4 Destination Alternate Aerodrome

6.2.4.1 For a flight to be conducted in accordance with the instrument flight rules, at least one destination alternate aerodrome or heliport, shall be selected and specified in the flight plan, unless:

a. the duration of the flight and the meteorological conditions prevailing are such that there is reasonable certainty that, at the estimated time of use at the aerodrome or heliport, of intended landing, and for a reasonable period before and after such time, the approach and landing may be made under visual meteorological conditions; or

b. the aerodrome or heliport, of intended landing is isolated and there is no suitable destination alternate aerodrome; and

i. an instrument approach procedure is prescribed for the aerodrome or heliport of intended landing; and

ii. a point of no return has been determined and the flight is not be continued past this point unless available current meteorological information indicates that the following meteorological conditions will exist at the estimate time of use:

A. a cloud base of at least 300 m (1,000 ft) above the minimum associated with the instrument approach procedure, and

B. visibility of at least 5.5 km (3 miles) or of 4 km (2 miles) more than the minimum associated with the procedure.

6.2.4.2A At least one destination alternate aerodrome should be selected and specified in the flight plan if the destination aerodrome has only one usable runway with an operational instrument approach procedure at the estimated time of use. (Recommended Practice)

6.2.5A Fuel Requirements (aeroplanes)

6.2.5.1 An operator shall establish policies and procedures to ensure that the aeroplane carries sufficient fuel to safely complete each flight and land with the planned final reserve fuel.

6.2.5.2 The operator shall have a process to ensure the computed final reserve fuel meets both the state of registry and state of operations requirements taking into account possible more conservative values of the applicable requirements specified in ICAO Annex 6 Part II or Annex 6 Part III.

6.2.5.3 It is recommended that operators determine one final reserve fuel value for each aeroplane type and variant in their fleet rounded up to an easily recalled figure. (Recommended Practice)

6.2.5.4 The pilot-in-command shall continually ensure that the amount of usable fuel remaining on board is not less than the fuel required to proceed to an aerodrome where a safe landing can be made with the planned final reserve fuel remaining upon landing.

6.2.5.5 The pilot-in-command shall advise ATC of a minimum fuel state by declaring MINIMUM FUEL when, having committed to land at a specific aerodrome, the pilot calculates that any change to the existing clearance to that aerodrome may result in landing with less than planned final reserve fuel.

6.2.5.6 The pilot-in-command shall declare a situation of fuel emergency by broadcasting MAYDAY MAYDAY MAYDAY FUEL, when the calculated usable fuel predicted to be available upon landing at the nearest aerodrome where a safe landing can be made is less than the planned final reserve fuel.

Note: Extensive fuel planning information is included in the IG.
6.2.5H Fuel and Oil Supply Requirements (helicopters)

6.2.5.1 A flight shall not be commenced unless, taking into account both the meteorological conditions and any delays that are expected in flight, the helicopter carries sufficient fuel and oil to ensure that it can safely complete the flight. In addition, a reserve shall be carried to provide for contingencies.

6.2.5.2 VFR operations. The fuel and oil carried in order to comply with 6.2.5.1 shall, in the case of VFR operations, be at least the amount sufficient to allow the helicopter:

a. to fly to the heliport to which the flight is planned;

b. to fly thereafter for a period of 20 minutes at best-range speed; and

c. to have an additional amount of fuel, sufficient to provide for the increased consumption on the occurrence of any of the potential contingencies specified by the operator to the satisfaction of the State of the Operator.

6.2.5.3 IFR operations. The fuel and oil carried in order to comply with 6.2.5.1 shall, in the case of IFR operations, be at least the amount sufficient to allow the helicopter:

a. When an alternate is not required, to fly to the heliport to which the flight is planned, and thereafter:

i. to fly 30 minutes at holding speed at 450 m (1 500 ft) above the destination heliport under standard temperature conditions and approach and land; and

ii. to have an additional amount of fuel, sufficient to provide for the increased consumption on the occurrence of potential contingencies.

b. When an alternate is required, to fly to and execute an approach, and a missed approach, at the heliport to which the flight is planned, and thereafter:

i. to fly to the alternate specified in the flight plan; and then

ii. to fly for 30 minutes at holding speed at 450 m (1 500 ft) above the alternate under standard temperature conditions, and approach and land; and

iii. to have an additional amount of fuel, sufficient to provide for the increased consumption on the occurrence of potential contingencies.

c. When no alternate is required, sufficient fuel shall be carried to enable the helicopter to fly to the destination to which the flight is planned and thereafter for a period that will, based on geographic and environmental considerations, enable a safe landing to be made.

d. In computing the fuel and oil required in 6.2.5.1 at least the following shall be considered:

i. meteorological conditions forecast;

ii. expected air traffic control routings and traffic delays;

iii. for IFR flight, one instrument approach at the destination heliport, including a missed approach;

iv. the procedures prescribed in the operations manual for loss of pressurization, where applicable, or failure of one engine while en route; and

v. any other conditions that may delay the landing of the helicopter or increase fuel and/or oil consumption.

Note: Specific State requirements may vary in the application of this requirement. Operators must meet the specific requirements of the State of Registry and the State in which the operation is being conducted.

6.2.6 Oxygen Supply Requirements
The operator shall have a procedure to ensure that a flight is not commenced unless a sufficient quantity of stored breathing oxygen is carried to supply all crew members and passengers in accordance with the national regulations of the State of Registry.

6.2.7A Extended Diversion Time Operations (EDTO)

*It is recommended that operators of turbine powered multi-engine airplanes used in extended diversion time operations (EDTO) over water or Polar regions, develop operational and maintenance procedures for those operations. Extended diversion time operations are described in ICAO Annex 6 Part 1, Section 4.*

*Note: See AC 120-42B (Part 121) and AC 135.42 (part 135) for information published by the FAA on extended range operations.*

6.2.8 Aircraft Performance

In applying the Standards of this section, account shall be taken of all factors that significantly affect the performance of the aircraft (such as: mass, operating procedures, the pressure altitude appropriate to the elevation of the aerodrome or heliport, temperature, wind and considerations such as:

a. for landplanes - runway gradient and condition of runway, i.e. presence of slush, water and/or ice,
b. for seaplanes - water surface condition, and
c. for helicopters sand, gravel, snow or ice on the operating surface.

Such factors shall be taken into account directly as operational parameters or indirectly by means of allowances or margins, which may be provided in the scheduling of performance data or in the comprehensive and detailed code of performance in accordance with which the aircraft is being operated.

6.2.8.1 An aircraft shall be operated in compliance with the terms of its certificate of airworthiness and within the approved operating limitations contained in its flight manual.

6.2.8.2 The pilot-in-command shall determine that aircraft performance will permit the take-off and departure to be carried out safely.

6.2.8.3A Aeroplanes - All multi-engine turbojet-powered aeroplanes or those with a maximum takeoff mass exceeding 5 700 kg. shall conform to the following standards:

a. **Take-off.** The aeroplane shall be able, in the event of a critical power-unit failing at any point in the take-off, either to discontinue the take-off and stop within either the accelerate-stop distance available or the runway available, or to continue the take-off and clear all obstacles along the flight path by an adequate margin until the aeroplane is in a position to comply with 6.2.8.3.b.

*Note - “An adequate margin” referred to in this provision is illustrated by examples included in Attachment C to ICAO Annex 6, Part I.*

i. In determining the length of the runway available, account shall be taken of the loss, if any, of runway length due to alignment of the aeroplane prior to take-off.
b. **En-route - one power-unit inoperative.** The aeroplane shall be able, in the event of the critical engine becoming inoperative at any point along the route or planned diversions from, to continue the flight to an aerodrome at which the Standard of 6.2.8.3.c. can be met, without flying below the minimum obstacle clearance altitude at any point.

c. **Landing.** The aeroplane shall, at the aerodrome of intended landing and at any alternate aerodrome, after clearing all obstacles in the approach path by a safe margin, be able to land, with assurance that it can come to a stop or, for a seaplane, to a satisfactorily low speed, within the landing distance available. Allowance shall be made for expected variations in the approach and landing techniques, if such allowance has not been made in the scheduling of performance data.

6.2.8.4H **Single Engine Helicopters** – An operator shall develop procedures to ensure that:

a. The risks related to potential power plant failures during take-off and while enroute and landing are mitigated to an acceptable level by careful and continuous planning on the part of the pilot.

b. Takeoff considerations include selecting multiple rejected take-off areas if possible.

c. Enroute and landing considerations include vigilance at all times for forced landing areas in the event of a power plant failure.

d. For operations across water any additional hazards are identified and the associated risks are managed.

6.2.8.5H **Multi Engine Helicopters** – An operator shall develop procedures to ensure that operations are conducted in accordance with the Category A or B requirements specified in ICAO Annex 6 Part III as appropriate, and that considerations are applied so as to achieve a safe and successful outcome to a critical power plant failure in the takeoff, enroute and landing phases.

6.2.9 **Refuelling with Passengers On Board**

An operator shall develop procedures to ensure that aircraft are not refuelled when passengers are embarking, on board or disembarking unless:

a. all fuelling safety procedures are complied with,

b. the aircraft is attended by qualified personnel ready to initiate and direct an evacuation of the aircraft by the most practical and expeditious means available

c. two-way communication is maintained by the aircraft’s intercom system or other suitable means, between the ground crew supervising the refuelling and the qualified personnel on board the aircraft.

*Note 1: Additional precautions are required when refuelling with fuels other than aviation kerosene or when refuelling results in a mixture of aviation kerosene with other aviation turbine fuels, or when an open line is used.*

*Note 2: There may be airport restrictions on the use of radio communications during refuelling operations.*

*Note 3: Helicopters should not be refuelled with passengers on board. A safety alert for operators highlighting current guidance and best-practices for operators that conduct fuelling with the engines running (hot fuelling) can be found at: [FAA SAFO Regarding Hot Refuelling or Chemical Loading](http://www.faa.gov).*
6.2.10 Surface Contamination

An operator shall develop procedures to ensure that an aircraft does not take off or attempt to take off, that has frost, ice, or snow adhering to any critical surface except that takeoff may be made with frost under the wing in the area of the fuel tanks if such operations are conducted in accordance with the aircraft manufactures instructions and are authorized by the civil aviation authority.

6.3 Operational Control

6.3.1 An operator shall establish an operational control system that meets the needs of the operation considering the complexity and area of operations. The system shall be described in the company operations manual and may be a pilot self-dispatch system. The operational control system shall

a. identify the person responsible for release of the flight,
b. specify flight planning requirements, and
c. specify when the pilot must advise the operator of the aircraft’s departure and arrival and the associated procedures.

6.3.2 The operational control system shall also include procedures for ensuring that:

a. all operating requirements specified in this standard have been met
b. the aircraft is operated within weight/mass and balance limits,
c. the names of persons on board the aircraft are recorded or otherwise known by the operator, and
d. search and rescue authorities are notified on a timely basis should an aircraft be overdue or missing.

Note: Procedure for notification of the operator as specified in 6.3.1.c and ensuring that search and rescue authorities are notified as specified in 6.3.2.d should especially address flight following considerations for VFR flights or situations where the IFR flight plan may be cancelled prior to landing. This becomes increasingly important when the destination aerodrome or heliport, is unattended or when no person is actively following the flight.

6.3.3 It is recommended that the operational control system also include procedures for ensuring that the pilot-in-command has access to appropriate information concerning the search and rescue services in the area over which the aircraft will be flown.

Note: This information may be made available to the pilot by means of the operations manual or such other means as is considered appropriate to the type of operation and the nature of the area to be overflown.

6.4 Weather Minima

6.4.1 The weather minima used for IFR departures and approaches shall be those specified in the instrument approach procedures approved for use by the operator.

6.4.2 No take-off minima:

a. Operators shall specify a procedure in their operations manual for the determination of take-off minima from runways or heliports, where no take-off minima are specified.
b. Such procedures shall include a risk analysis.
6.4.3 An operator shall not operate to or from an aerodrome or heliport, using operating minima lower than those which may be established for that aerodrome or heliport, by the State in which it is located, except with the specific approval of that State.

*Note: See the IG for information regarding the use of HUD, EVS, SVS, CVS, and operational credits.*

6.4.4 A flight shall not be continued towards the aerodrome or heliport of intended landing unless the latest available meteorological information indicates that conditions at that aerodrome, or heliport, or at least one destination alternate aerodrome or heliport, will, at the estimated time of arrival, be at or above the specified aerodrome or heliport, operating minima.

6.4.5 Aerodrome Operating Minima

a. Unless permitted by both the State of Registry and State of Operation, the operator shall ensure that an instrument approach is not continued below 300 m (1000 ft) above the aerodrome elevation or into the final approach segment unless the reported visibility or controlling RVR is at or above the aerodrome operating minima.

*Note: Criteria for the Final Approach Segment is contained in PANS-OPS (Doc 8168), Volume II.*

b. If, after entering the final approach segment or after descending below 300 m (1000 ft) above the aerodrome/heliport elevation the reported visibility or controlling RVR falls below the specified minimum, the approach may be continued to DA/H or MDA/H. In any case, an aircraft shall not continue its approach-to-land beyond a point at which the limits of the aerodrome/heliport operating minima would be infringed.

6.4.6 Reserved

6.4.7 A flight to be operated in known or expected icing conditions shall not be commenced unless the aircraft is certificated and equipped to cope with such conditions.

6.4.8H *VFR Helicopter Operations* - Operators shall establish VFR weather limits for both day and night operations that take into account the nature of the operations being conducted and the operating environment.

*Note: Regulatory minimum requirements established by the state may not be sufficient to support a particular operation or be conducive of best and safe practices. Operators/owners have the opportunity here to establish meaningful weather minimums to aid the pilot in conducting safe operations.*

6.5 All Weather Operations

6.5.1 An operator shall not permit an aircraft to conduct instrument approach or departures below standard Category I weather minima unless all equipment, training and operating requirements and regulatory requirements have been met.

6.5.2 An operator shall not permit an aircraft to conduct an instrument approach to Category II or III approach minima unless the operator has authorization from the civil aviation authority in the
State of Registry and the authority of the State in which the CAT II or CAT III operations are being conducted. The minimum requirements to conduct Category II or III operations are:

a. approved Category II or III operating procedures in the company operations manual,

b. flight crew that are trained and certified to conduct Category II or III instrument approaches,

c. aircraft that are equipped, approved and maintained for Category II or III operations.

*Note: For additional guidance on Category II and III operations see:*

Guidance on Category II operations and related requirements, including the installation and approval of associated aircraft systems, may be found in FAA Advisory Circular 91-16, Category II Operations-General Aviation Airplanes and Advisory Circular 120-29A, Criteria for approval of Category I and Category II Weather Minima for Approach.

Guidance on Category III operations and related requirements may be found in FAA Advisory Circular 120-28, Criteria for Approval of Category III Landing Weather Minima.

Guidance on Category II and III operations and related requirements may be found in EU-OPS - Commercial Air Transportation (Aeroplanes) Subpart E – All Weather Operations, and - JAA-Temporary Guidance Leaflet - 12 - All Weather Operations – General Aviation.

### 6.6 Communications, Navigation, and Surveillance (CNS) Requirements and Approvals

#### 6.6.1 Prior to operations in airspace where specific CNS requirements exist such as Performance Based Navigation (PBN) Specifications, Minimum Navigation Performance Specification (MNPS), Reduced Vertical Separation Minimums (RVSM), Controller Pilot Data Link Communication (CPDLC), or Automatic Dependent Surveillance (ADS) B/C, an operator shall have a process to ensure that:

a. the aircraft and operator has been authorized by the State of Registry and, if required, the State of Operations;

b. the aircraft meets the aircraft system and operational requirements for the operations concerned; and

c. continuing RVSM height monitoring requirements have been met.

#### 6.6.2 Flight Crew Authorization

a. Flight crews engaged in operations in airspace where specific CNS requirements apply (i.e. PBN, RVSM, MNPS, CPDLC, ADS) shall be so authorized by an appropriately authorized manager.

b. To be considered qualified to be so authorized, each flight crew member shall complete training in the subject areas as required by the specific State authorizations and as necessary to ensure competency in operations in such airspace.

c. Such authorizations shall be included in the pilot training records.

*Note 1: For further information on Performance Based Navigation, operators should review ICAO’s guidance at:* [http://www.icao.int/safety/pbn/Pages/default.aspx](http://www.icao.int/safety/pbn/Pages/default.aspx)

*Note 2: For information on global Communications, Navigation, and Surveillance systems planning, operators should review ICAO Doc 9750, Global Air Navigation Plan at:*
ICAO Doc 9750 Global Air Navigation Plan

6.7 Aircraft Operating Requirements

6.7.1 An operator is responsible for identifying and complying with all aircraft operating rules that the operator is subject to, as required by the civil aviation authority of the State of Registry and the States in whose airspace the operations are being conducted.

Note: Where State requirements deviate from ICAO SARPS, States are required to provide this information to ICAO and it is published in the Supplements of the appropriate ICAO documents. Experience has demonstrated that States do not always notify ICAO of such deviations; therefore, the State AIPs should also be checked. Operators may be able to obtain such a service from flight planning service providers.

6.8 Noise Certification and Abatement

6.8.1 An operator shall carry on board documentary proof attesting noise certification of the aircraft when such a document has been issued.

6.8.2 An operator shall ensure that the aircraft adheres to all published noise abatement procedures consistent with safety.

6.9 Aircraft Airworthiness

6.9.1 An operator shall ensure that aircraft are operated in accordance with their certificate of airworthiness and any limitation thereof.

6.10 Use of Oxygen

6.10.1 Where an aircraft is operated at cabin-pressure-altitudes above 10,000 ft. (700 hPa) but not exceeding 13,000 ft. (620 hPa) each crew member shall wear an oxygen mask and use supplemental oxygen for any part of the flight at those altitudes that is more than 30 minutes in duration.

6.10.2 Where an aircraft is operated at cabin-pressure-altitudes above 13,000 ft. (620 hPa) each person on board the aircraft shall wear an oxygen mask and use supplemental oxygen for the duration of the flight at those altitudes.

6.10.3 The pilot at the flight controls of an aircraft shall use an oxygen mask if:
   a. the aircraft is not equipped with quick-donning oxygen masks, and
   b. it is operated at or above FL 250.

6.10.4 It is recommended that the pilot at the flight controls of an aircraft shall use an oxygen mask if:
   a. the aircraft is operated above FL 410, or
   b. if one pilot leaves the flight deck for any reason above FL 350.

   Note: Specific State requirements may vary in the application of this requirement. Operators must meet the specific requirements of the State of Registry.
6.11 Passenger Safety Briefing

The pilot-in-command shall ensure that passengers are given a safety briefing appropriate to the passenger's needs; and covers at least the items specified in this section as applicable for the type of operation.

6.11.1 Normal Operations

a. Prior to loading passengers, the safest direction and most hazard-free route for passenger movement to the aircraft and any dangers associated with the aircraft type such as pitot tube locations, propellers, main and tail rotor blades, or engine intakes.

b. Prior to take-off:
   i. when, where, why and how carry-on baggage is required to be stowed,
   ii. the fastening, unfastening, tightening and general use of safety belts or safety/shoulder harnesses,
   iii. when seat backs must be secured in the upright position and seats and tables must be stowed,
   iv. the location and operation of emergency exits,
   v. the location and use of the passenger oxygen system and masks,
   vi. the location, purpose of, and advisability of reading the passenger safety briefing card,
   vii. the requirement to obey crew instructions regarding safety belts and no smoking or fasten seat belt signs and the location of these signs,
   viii. the location of any emergency equipment the passenger may have a need for in an emergency situation such as the Emergency Location Transmitter, fire extinguisher, survival equipment (including the means to access if in a locked compartment), first aid kit, life preserver or flotation device and life raft,
   ix. the operator's procedures regarding the use of portable electronic devices, and
   x. other considerations based on the configuration of the aircraft cabin and equipment.

c. After take-off, if not included in the pre take-off briefing:
   i. on flights where smoking is permitted, when and where smoking is permitted on board the aircraft, and
   ii. the advisability of using safety-belts or safety/shoulder harnesses during flight.

d. In-flight when the "Fasten Seat Belt" sign has been turned on for reasons of turbulence:
   i. when the use of seat belts is required, and
   ii. the requirement to stow carry-on baggage.

e. Prior to passenger disembarking, the safest direction and most hazard-free route for passenger movement away from the aircraft following deplaning; and any dangers associated with the aircraft type such as pitot tube locations, propellers, main and tail rotor blades, or engine intakes.

6.11.2 The standard safety briefing shall be performed for every flight except under the following conditions:

a. regular/recurring passengers who are familiar with the aircraft, route and have repeated exposure to that type of flight,

b. EMS operations where a passenger briefing may not be appropriate, or
c. other operations where the standard passenger briefing is not appropriate as determined by the pilot in command.

6.11.3 Where the foregoing safety briefing is insufficient for a passenger because of that passenger's physical, sensory or comprehension limitations or because that passenger is responsible for the care of another person on board the aircraft, the pilot-in-command shall ensure that the passenger is given an individual safety briefing that meets their individual needs.

6.11.4 Emergency Operations

The pilot-in-command shall ensure that, in the event of an emergency, where circumstances permit, all passengers are given an emergency briefing covering the following items:

a. safety belts or safety/shoulder harnesses;

b. seat backs, seats and tables;

c. carry-on baggage;

d. passenger safety briefing cards;

e. brace position (when to assume, how long to remain) and considerations for side facing seats;

f. evacuation procedures;

g. if applicable, life preservers; flotation devices and life rafts; and

h. if applicable, evacuation procedures for an occupant of a child restraint system.

6.11.5 Passenger Safety Briefing Card

An operator shall ensure that a passenger safety briefing card is readily available to each passenger that contains, in printed or pictographic form, information on at least the following safety features of the aircraft:

a. the location and operation of emergency exits;

b. the location and use of the passenger oxygen system (when installed);

c. the location of life jackets and life rafts (when on board); and

d. the location of other emergency equipment on board the aircraft in accordance with State of Registry requirements.

6.12 Use of Checklists

6.12.1 An operator shall establish a checklist for each type of aircraft that it operates and shall make the checklist available to the crew members. The checklist shall cover normal, abnormal and emergency operations and be consistent with the aircraft flight manual and related SOPs and shall include an effective date or date of last revision.

6.12.2 Every crew member shall utilize these checklists in the performance of their assigned duties using the methods required by the operator.

6.12.3 The operator shall ensure that flight crews comply with best practices for checklist execution.

Note: See the IG for information related to human factors and checklist design and usage.
6.14 Travel Health Issues

6.14.1 It is recommended that operators engaged in international operations develop procedures for assessment of public health risks at out of country destinations and a response plan should passengers and/or crew be exposed to serious infectious disease or significant health risks.

Note: Information on public health issues and managing the associated risks is available on the World Health Organization web site at http://www.who.int/en/, the IATA Health Website and from national health authorities.

6.15 Seating Requirements

6.15.1 Flight Crew Members at Duty Stations

a. Take-off and landing. All flight crew members required to be on flight deck duty shall be at their stations.

b. En route. All flight crew members required to be on flight deck duty shall remain at their stations except when their absence is necessary for the performance of duties in connection with the operation of the aeroplane or for physiological needs.

c. Seat belts. All flight crew members shall keep their seat belts fastened when at their stations.

d. Safety/shoulder harness. When safety/shoulder harnesses are provided, any flight crew member occupying a pilot’s seat shall keep the safety/shoulder harness fastened during the take-off and landing phases. All other flight crew members shall keep their safety/shoulder harnesses fastened during the take-off and landing phases unless the shoulder straps interfere with the performance of their duties, in which case the shoulder straps may be unfastened but the seat belt must remain fastened.

Note: Safety/shoulder harness includes shoulder strap(s) and a seat belt which may be used independently.

6.15.2 Each cabin crew member shall be seated with seat belt or, when provided, safety/shoulder harness fastened during take-off and landing and whenever the pilot-in-command so directs.

6.15.3 During take-off and landing and whenever considered necessary, by reason of turbulence or any emergency occurring during flight, all passengers on board an aircraft shall be secured in their seats by means of the seat belts or harnesses provided.

6.16 Cabin Baggage

An operator shall specify procedures to ensure that all baggage carried onto an aircraft and taken into the passenger cabin is adequately and securely stowed.

6.17 Microphones and Headsets

An operator shall ensure that flight crew members utilise headsets and communicate through boom microphones to the maximum extent practical to ensure effective communications, and at all times during critical phases of flight.

6.18A Personnel Qualified to Taxi Aeroplane
An operator shall have a procedure to ensure that an aeroplane is not taxied on the movement area of an aerodrome unless the person at the controls is an appropriately qualified pilot or:

a. has been duly authorized by the operator;
b. is fully competent to taxi the aeroplane;
c. is qualified to use the radio if radio communications are required; and
d. has received instruction from a competent person in respect of aerodrome layout, and where appropriate, information on routes, signs, marking, lights, ATC signals and instructions, phraseology and procedures, and is able to conform to the operational standards required for safe aeroplane movement at the aerodrome.

6.19H Helicopter Rotor Turning Under Power

6.19.1 An operator shall have a procedure to ensure that the helicopter rotor shall not be turned under power for the purpose of flight without a qualified pilot at the controls.

6.19.2 The operator shall provide appropriately specific training and procedures to be followed for all personnel, other than qualified pilots, who are likely to carry out the turning of a rotor under power for purposes other than flight.

6.20 Maintenance Check Flights

Maintenance Check Flights present unique safety risks to the operator and must be managed effectively. Therefore, the operator should ensure the flight crew and maintenance personnel are properly trained to conduct such operations.

Note: Guidance regarding Maintenance Check Flights can be found in IBAC’s Safety Management Library at http://www.ibac.org/Files/is-bao/FSF_Functional_Check_Flight.pdf.

6.21 Piloting Competency in Key Safety Areas (Recommended Practice)

The operator should establish procedures and training requirements to ensure each pilot maintains competency in key safety areas such as:

a) Manual Flying Skills
b) Stabilized Approaches
c) Runway Excursion Prevention
d) Automation Management
e) Upset Recovery

6.22 Stabilized Approach

6.22.1 The operator shall define stabilized approach criteria and require the flight crew to execute a go-around or missed-approach if the aircraft deviates outside these criteria.

6.22.2 The operator should establish policy to ensure flight crew utilize approaches with a constant glide path to landing to the maximum degree practical. (Recommended Practice)
7. **International Operations**

7.1 **Sovereign and International Airspace**

The territory of a State is deemed to be the land area and territorial waters adjacent thereto under the sovereign protection of such State. The airspace above such land and water is sovereign airspace. For the purpose of this chapter, all airspace outside the territory of a State is referred to as international airspace which includes the sovereign airspace of other contracting States and the airspace over the high seas.

a. The operator shall establish procedures to ensure that when operating in the sovereign airspace of a State other than the State of Registry, the flight crew shall identify and apply the most restrictive requirements regarding the State of Registry and the State where the operations are being conducted.

b. The rules in force relating to flight and manoeuvre of aircraft when operating outside the airspace of any sovereign state, i.e. oceanic or high seas, shall be in accordance with ICAO Annex 2, Rules of the Air.”

7.2 **Compliance**

7.2.1 Operators shall maintain a process that ensures that flight crews are familiar with national, regional and international air navigation procedures and associated requirements prior to the commencement of flight into such airspaces. The process shall also ensure that flight crews comply with the requirements of their State of Registry or Operations, International Civil Aviation Organization (ICAO) Standards and Recommended Practices, published Regional Procedures and the regulations of each State in which they intend to land or overfly, as are pertinent to the performance of their respective duties in the operation of the aeroplane.

7.2.2 The aircraft operator shall be responsible for disembarking passengers and crew members from the time they leave the aircraft until they are accepted for examination for entry into a State and shall have procedures for discharging this responsibility.

*Note 1: Operators should be aware that the fact that their State has filed differences with ICAO does not preclude them from the requirement to meet ICAO Standards when operating outside of their domestic airspace.*

*Note 2: Operators should be aware of variances in insurance requirements. It is important to determine the requirements for coverage for passengers, war risks, third party liability etc.*

7.3 **International Airspace Operations Qualifications**

7.3.1 Flight Crew Authorization

a. Flight crews engaged in operations in international airspace shall be so authorized by the Chief Pilot/Operations Manager.

b. To be considered qualified to be so authorized, each flight crew member shall have completed training in the subject areas as required by the specific authorizations and as necessary to ensure competency in operations in such airspace.
c. Such authorizations shall be included in the pilot training records.

7.3.2 Reserved

7.4 Standard Operating Procedures

7.4.1 Prior to operating in international airspace involving performance based navigation, CPDLC, ADS-C, or ADS-B an operator shall:
   a. establish and maintain standard operating procedures (SOPs) for international airspace operations,
   b. ensure that all crews conducting such operations are trained in use of the SOP, and
   c. ensure that a copy of the SOP of it is carried onboard the aircraft.

Note 1: IG 7.0 provides guidance on complying with this requirement.

Note 2: For guidance related to international helicopter operations, see the International Helicopter Safety Team website at http://www.ihst.org/

7.5 International Publications Library

7.5.1 It is recommended that operators intending to operate in international airspace should maintain or have access to a library of publications relevant to flight in international airspace. A suggested list of publications is provided in IG 7.0.
8. Aircraft Equipment Requirements

8.1 General

8.1.1 The operator shall have a process to ensure that all aircraft are equipped in accordance with:

a. the applicable requirements specified in ICAO Annex 6 Part II or Annex 6 Part III,

b. the applicable requirements specified by the State of Registry, and

c. the applicable requirements specified by the State and/or airspace where operations are conducted.

8.1.2 The operator shall have a process to ensure that equipment required meets the technical specifications prescribed by the State of Registry.

8.2 Operational Information and Documentation

8.2.1 The following documentation and information (in written or electronic form) shall be carried on board the aircraft and the operational information shall be accessible on the flight deck with the exception of 8.2.1 (m) for helicopters:

a. pertinent aeronautical charts;

b. pertinent en route, terminal area, and instrument approach procedure charts;

c. aircraft performance data;

d. aircraft checklists;

e. the Company Operations Manual;

f. Standard Operating Procedures, where an SOP has been established for the aircraft;

g. the aircraft flight manual;

h. the aircraft minimum equipment list (MEL) for aircraft being operated in accordance with a MEL;

i. aircraft certificate of airworthiness or other flight authority and certificate of registration;

j. aircraft radio licence;

k. insurance certificate;

l. other documents required of the area of operation;

m. procedures for pilots-in-command of intercepted aircraft and visual signals for use by intercepting and intercepted aircraft, as contained in ICAO Annex 2, and

n. for international commercial air transport operations, a certified true copy of the air operator certificate including the authorizations, conditions and limitations relevant to the aircraft type.

8.3 Emergency Equipment Information

8.3.1 Information for Rescue Coordination

a. An operator shall have available for immediate communication to rescue coordination centres, lists containing information on the emergency and survival equipment carried on board the aeroplane engaged in international air navigation.
b. The information shall include, as applicable, the number, colour and type of life rafts and pyrotechnics, details of emergency medical supplies, water supplies and the type and frequencies of the emergency portable radio equipment.

8.4 GPWS/TAWS Data Management

8.4.1 Operators shall have a process to ensure that the data base for ground proximity warning systems with predictive terrain hazard warning is kept current.

8.5 Flight Data Recorders and Cockpit Voice Recorders

8.5.1 The pilot-in-command, and/or the owner/operator, shall ensure, to the extent possible, in the event an aircraft becomes involved in an accident or incident, the preservation of all related flight recorder records, and if necessary the associated flight recorders, and their retention in safe custody pending their disposition as determined in accordance with ICAO Annex 13.

8.5.2 Flight data and cockpit voice recorders shall not be switched off during flight time.

8.5.3 The operator shall have procedures to protect CVR and FDR data from inappropriate use.

Note: The protection of safety information from inappropriate use is essential to ensure its continued availability, since the use of safety information for other than safety-related purposes may inhibit the future availability of such information, with an adverse effect on safety. This fact was recognized by the 35th Assembly of ICAO, which noted that existing national laws and regulations in many States may not adequately address the manner in which safety information is protected from inappropriate use. See ICAO Annex 13, ATTACHMENT E, for more information regarding the protection of safety information from safety data collection and processing systems (SDCPS).

8.6 Minimum Equipment List

8.6.1 Where a master minimum equipment list (MMEL) is established for the aircraft type, the operator shall include in the operations manual a minimum equipment list (MEL) approved by the State of Registry of the aircraft which will enable the pilot-in-command to determine whether a flight may be commenced or continued from any intermediate stop should any instrument, equipment or systems become inoperative.

8.6.2 Where an operator has developed a MEL, maintenance personnel and flight crews shall be trained in the use of it and a copy of the MEL shall be carried on the aircraft.

Note: Guidance on MEL development and use may be found in FAA Circular AC 91-67 - Minimum Equipment Requirements for General Aviation Operations Under FAR Part 91.

8.7 EFB Equipment

8.7.1 Where portable EFBs are used on board an aircraft, the operator shall ensure that they do not affect the performance of the aircraft systems, equipment or the ability to operate the aircraft.

8.7.2 The operator shall:

a) Assess the safety risk(s) associated with each EFB function;
b) Establish the procedures for the use of, and training requirements for, the device and each EFB function; and

c) Ensure that, in the event of an EFB failure, sufficient information is readily available to the flight crew for the flight to be conducted safely.

*Note - For information on EFBs see the following documents:*

*EASA AMC 20-25, Airworthiness and operational consideration for EFBs*

*FAA AC 120-76B, Guidelines for the Certification, Airworthiness, and Operational Use of EFBs*
9. Aircraft Maintenance Requirements

9.1 Maintenance Control System

9.1.1 An operator, other than one to which 9.1.2 applies, shall establish a maintenance control system that is appropriate to the:

a. number and types of aircraft operated,

b. complexity of the operations,

c. identified hazards and associated risks,

d. operator safety policy and its objectives, and

e. manner by which the maintenance is conducted.

Note: IG 9.1 provides guidance on complying with this requirement.

9.1.2 An operator which has outsourced their maintenance control system to a maintenance organization certified by a national aviation authority shall provide proper oversight to ensure the maintenance organization conforms to the standards and recommended practices of this chapter and in areas they do not conform, the operator shall identify these gaps in their SMS.

Note 1: It is the owner's/lessee's/operator's (as applicable) responsibility to take appropriate actions to ensure adequate oversight of contracted maintenance organizations.

9.1.3 Reserved

9.1.4 In that section of the company operations manual or maintenance manual, the operator shall provide a detailed description of the maintenance control system containing at least the following information:

a. where maintenance functions have been assigned:

i. the position or title of the person to whom functions have been assigned,

ii. a description of the functions and scope of work that have been assigned to each position, person or organization, and

iii. where necessary for clarity, a chart depicting the distribution of functions and lines of authority;

b. for elementary work or preventative maintenance and aircraft servicing:

i. identification of those standards or maintenance data (aircraft manufacturer, civil aviation authority or other) to be used,

ii. procedures to confirm that regulatory information and technical data appropriate to the work performed are used;

iii. details of the methods used to record the maintenance, elementary work/preventative maintenance or servicing performed, and to ensure that any defects are recorded in the aircraft technical record;

Note: Elementary work or preventative maintenance means simple or minor maintenance operations and the replacement of small standard parts not involving complex assembly.

c. the identification of any maintenance schedule/programme authorized by the State of Registry;

d. a detailed description of the procedure used to ensure that any maintenance tasks required by the maintenance schedule/programme, an airworthiness directive, or any task required for the
rectification of a defect is completed within the time constraints specified in national regulations;

e. a description of the assessment programme for aircraft Service Bulletins and Airworthiness Directives and the associated documentation;

f. procedures to ensure that only parts and materials that meet regulatory requirements and manufacturer’s specifications are used in the performance of maintenance and elementary work/preventative maintenance or servicing including any details respecting parts-pooling arrangements that have been entered into;

Note: This is intended to include any stores procedures that may be used by the operator, including those procedures used for the control of petroleum, oil and other lubricants, as required by State regulation.

g. procedures to ensure that properly calibrated tools are used in the performance of maintenance, elementary work/preventative maintenance or servicing.

h. a description of the procedure used to ensure that the Basic Empty Weight (BEW) of an aircraft is maintained, current and properly documented;

i. the identification of any person eligible to apply for a flight permit or special flight authorization in respect of the operator’s aircraft;

j. procedures for a tool control programme designed to ensure tools, supplies, and test equipment are accounted for following maintenance performed on an aircraft; and

k. procedures to manage the risks associated with maintenance personnel working alone.

9.1.5 An operator must provide a copy of the relevant manual section that details the maintenance control system, or relevant portions thereof, to each person or organisation, who performs or certifies work. In the case where only a portion of the manual is provided, it must be sufficiently comprehensive that the person or organisation, performing the tasks has all relevant information. For non-scheduled work, temporary copies of the relevant portions of the operations manual section that details the maintenance control system, or any incorporated reference, may be sent electronically.

9.1.6 In the part of the manual that describes its maintenance control system, an operator shall include defect recording and rectification control procedures for:

a. recording aircraft defects;

b. ensuring that defects are rectified in accordance with regulatory requirements and manufacturer’s specifications;

c. detecting defects that recur and identifying those defects as recurring defects; and

d. scheduling, within the permitted period of deferral, the rectification of defects whose repair has been deferred.

9.1.7 In the part of the manual that describes the maintenance control system, an operator shall include technical dispatch instructions that:

a. ensure that aircraft are;

i. maintained in an airworthy condition,

ii. appropriately equipped, configured and maintained for the intended use, and

iii. maintained in accordance with the authorized maintenance program;

b. ensure that all MEL procedures are followed and requirements met;

c. meet the requirements of the State of Registry civil aviation regulations and standards; and
d. ensure that a maintenance release is completed and signed, as prescribed by the State of Registry, to certify that the maintenance work has been performed in accordance with the maintenance programme or other data and procedures acceptable to the State of Registry.

9.1.8 An operator may deviate from the procedures required by its maintenance control system where the deviation conforms to national regulations and is substantiated by a risk analysis.

9.1.9 The owner or operator of an aircraft, or in the case where it is leased, the lessee, shall ensure that the following records are kept for the periods mentioned below:

a. the total time in service (hours, calendar time and cycles, as appropriate) of the aircraft and all life limited components;

b. the current status of compliance with all applicable mandatory continuing airworthiness information, including life limited components;

c. appropriate details of modifications and repairs to the aircraft;

d. the time in service (hours, calendar time and cycles, as appropriate) since the last overhaul of the aircraft or its components subject to a mandatory overhaul life;

e. the current status of the aircraft’s compliance with the maintenance programme; and

f. the detailed maintenance records to show that all requirements for the signing of a maintenance release have been met.

The records in 9.1.9.a. to 9.1.9.e., shall be kept for a minimum period of 90 days after the unit to which they refer has been permanently withdrawn from service and the records in 9.1.9.f. for a minimum period of one year after the signing of the maintenance release.

Note: State of Registry requirements for record retention may vary and must be respected.

9.1.10 An operator of an aeroplane of a maximum certificated take-off mass in excess of 5 700 kg or helicopter with a maximum certificated take-off mass in excess of 3 175kg, shall, as prescribed by the State of Registry, ensure that the information resulting from maintenance and operational experience with respect to continuing airworthiness is transmitted to the State of Registry as required.

9.1.11 An operator of turbojet-engined aeroplanes or those with a maximum takeoff mass exceeding 5700 kg or any aircraft engaged in commercial operations, shall ensure the maintenance program:

a. observes Human Factors principles according to the State of Registry’s guidance material;

b. includes, if applicable, a continuing structural integrity programme; and

c. includes, when applicable and approved by the State of Registry, condition monitoring and reliability programme descriptions for aircraft systems, components and powerplants.

9.1.12 It is recommended that the maintenance programme be based on information made available by the State of Design or by the organization responsible for the type design, and any additional applicable experience.

9.2 Maintenance Agreements

9.2.1 No operator shall permit a person or organisation to perform maintenance on an aircraft unless the person is an employee of the operator or has been authorized to perform the work under the
terms of a written maintenance agreement or other form of authorization specified in the company operations manual or maintenance manual.

9.2.2 Operators shall include procedures in the company operations manual for flight crew to obtain aircraft maintenance services when away from home base.

9.3 Person Responsible for Maintenance Control

9.3.1 An operator shall:
   a. appoint a person to be responsible for its maintenance control system; and
   b. authorize the person who is responsible for its maintenance control system to remove aircraft from operation, where the removal is justified because of non-compliance with the requirements of national regulations or because of a threat to the safety of the aircraft, persons or property.

9.3.2 The operator shall provide the person who is responsible for its maintenance control system with the staff, facilities and other resources necessary to ensure that the maintenance is conducted in accordance with the civil aviation authority requirements and meets the safety management goals of the operator.

   Note: Where an operator is the holder of an approved maintenance organization (AMO) that is appropriate to the aircraft being operated, the person responsible for maintenance may be the person responsible for the maintenance control system of the AMO.

9.4 Maintenance Personnel Recency

9.4.1 An operator shall ensure that no person signs a maintenance release unless within the preceding 24 months that person has had at least six months experience in the inspection, servicing or maintenance of an aircraft or system in accordance with the privileges granted by the licence held.

10.1 An operator shall establish and maintain a company operations manual\(^1\), or manuals. It may be issued in separate parts corresponding to specific aspects of an operation. It shall include the instructions and information necessary to enable the personnel concerned to perform their duties safely.

An operator shall provide a manual, or appropriate portions of the manual, to each person who requires those instructions and/or that information to perform their duties. The operations manual shall be amended or revised as is necessary to ensure that the information contained therein is kept up to date. All such amendments or revisions shall be issued to all personnel that are required to use this manual.

10.2 An operations manual for non-commercial aeroplane operations shall contain at least the following:
   a. table of contents;
   b. amendment control page and list of effective pages, unless the entire document is re-issued with each amendment and the document has an effective date on it;
   c. duties, responsibilities and succession of management and operating personnel;
   d. operator safety management system;
   e. operational control system;
   f. MEL procedures (where applicable);
   g. the normal operating requirements and procedures
   h. SOPs;
   i. weather limitations;
   j. fatigue management system;
   k. emergency equipment and operating procedures;
   l. accidents/incidents consideration;
   m. personnel qualifications and training;
   n. record keeping;
   o. a description of the maintenance control system;
   p. security procedures;
   q. performance operating limitation
   r. use/protection of FDR/CVR records, if installed; and
   s. handling of dangerous goods.

Note: IG 10.0 provides guidance on meeting this requirement plus the Annex 6 Part III specifications for an operations manual for a helicopter operator. A generic operations manual is also available for guidance in developing a company operations manual for non-commercial aeroplane operators.

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\(^1\) The term “company operations manual” is used as it is the term used for related IS-BAO documents. Operators may use the any term they consider appropriate when referring to their operations manual.
10.3 An operator shall include in the company operations manual a description of the process to allow deviations from the provisions contained in it (if the operator allows deviations) and specify the person who may approve such deviations. Any deviation shall identify the associated conditions under which it is permitted or required, and should be based on a risk assessment process.

10.4 The design of the company operations manual and all associated manuals should observe Human Factors principles related to the design of manuals. *(Recommended Practice)*

*Note: See IG 10.4 for information on human factors principles related to the design of manuals.*
11. **Fatigue Management Program**

11.1 *The operator should develop and maintain a program to assess and manage the inherent risks associated with fatigue for all personnel. The program should include all the elements as required for aircrew members and maintenance personnel (Recommended Practice)*

11.2 An operator shall establish and implement a fatigue management program that is designed to ensure that all operator personnel involved in the safe operation of aircraft such as, but not limited to flight crew, cabin crew, other aircraft crew, maintenance personnel, schedulers, and dispatchers do not carry out their duties when fatigued. The system shall contain the following elements:

   a. fatigue management guiding principles,

   b. appropriate training and education regarding preventive and operational fatigue countermeasures,

   c. flight and duty time limitations for aircraft crew,

   d. duty time limitations for other operator personnel, and

   e. an evaluation process that assesses the effectiveness of the fatigue management program.

11.3 If deviations from the flight and/or duty time limitations are permitted, the system shall include provisions to:

   a. assess the associated risks and applying appropriate mitigation to maintain an acceptable level of risk for that operation,

   b. identify the management person who is authorized to approve the deviation, and

   c. record the deviations, the risk assessment and related mitigation.

11.4 Deviations shall be made only with the express approval of all personnel involved.

*Note: The IG contains an acceptable fatigue management program for the flight crew, and guidance material for aircraft maintenance and other support personnel. Operators are encouraged to use this material as a basis for development of their fatigue management programme for all personnel involved in the operation.*

11.5 *It is recommended that any deviation from the limits contained in this IG be supported by a comprehensive risk assessment process. (Recommended Practice)*

11.6 *It is recommended that operators include provisions in maintenance agreements that ensure that the maintenance organization has a fatigue management program to ensure maintenance personnel do not carry out maintenance work when they are fatigued. (Recommended Practice)*
12. Environmental Management

12.1 An operator shall have a process to identify and comply with all national and local environmental laws and requirements, including those related to:
   a. noise abatement procedures during ground operations to include engine run ups and auxiliary power unit operations consistent with safety, including airport curfews;
   b. ground operations including aircraft fuelling and de/anti-icing procedures;
   c. spill containment of toxic and flammable materials and chemicals, including disposal of collected materials;
   d. disposal of waste materials;
   e. disposal of international garbage;
   f. the construction and/or operation of the operator’s:
      i. hangars,
      ii. fuel storage and dispensing equipment,
      iii. other facilities; and
   g. operations subject to emissions charges, fees, or purchase of credits related to Market Based Measures regulations (e.g. Emissions Trading Schemes).

12.2 Operators should be aware of local environmental rules and procedures at airports frequently visited. (Recommended Practice)

Note: The following links offer additional information on managing environmental issues:

   The NBAA European Emissions Trading Scheme

   EBAA Environment Webpage

   IBAC Business Aviation Safety Plan

   HAI Fly Neighbourly Guide
13. Occupational Health and Safety

13.1 An operator shall have a process to identify and comply with all national and local occupational health and safety laws and requirements, including those related to:

a. development and implementation of workplace safety programmes;
b. compliance with fire safety, first aid and sanitary requirements;
c. provision of safety and protective clothing, devices and equipment, particularly fall protection for aircraft maintenance personnel;
d. provision of safety information and training to employees;
e. ensuring that machinery, tools and equipment, including lifting equipment, meets safety standards; and
f. ensuring that hazardous materials are controlled and that employees have information and training in their handling and storage.

Note: To reduce the risks associated with moving vehicles and aircraft during night operations, many operators ensure personnel wear reflective outerwear while performing duties on the ramp at night.

13.2 An operator shall develop procedures to ensure that all company personnel and passengers accessing the aviation environment associated with company operations are made aware of the occupational health and safety requirements and adhere to the associated operator’s procedures.

Note 1: These provisions need not be contained in the company operations manual, but the operator must have a process to ensure that local and national requirements are met.

Note 2: The NBAA Safety Program Manual contains extensive guidance material on occupational health and safety issues plus regulatory references.

13.3 It is recommended that operators include considerations for the safety of any person who may be working alone. (Recommended Practice)
14. Transportation of Dangerous Goods

14.1 Considerations for All Operators

14.1.1 Dangerous goods are defined as those articles or substances that are capable of posing significant risks to health, safety or property when transported by air. Operators shall not transport dangerous goods except where authorized under and in accordance with the provisions of the ICAO Technical Instruction for the Safe Transport of Dangerous Goods (hereafter called ICAO Technical Instructions) or the IATA Dangerous Goods Regulations.

14.1.2 An operator shall have a system to advise passengers of what constitutes dangerous goods, and whether and how those goods can be carried on aircraft.

14.1.3 Aircraft crew members shall receive training on these procedures at least every two years.

Note: Hazardous materials training and information is available from the US DOT at http://www.phmsa.dot.gov/

14.2 Dangerous Goods Transportation Requirements

14.2.1 Prior to transporting dangerous goods an operator shall ensure that all State regulatory requirements have been met.

14.2.2 In particular, operators that transport dangerous goods, whether it is organization’s property, the property of organization personnel, or the property of a third party, shall ensure that the goods are:
   a. classified,
   b. packed,
   c. labelled and marked,
   d. loaded,
   e. stowed,
   f. accompanied by documentation, and
   g. transported in accordance with the provisions of the ICAO Technical Instructions, or the IATA Dangerous Goods Regulations and the rules specified by the State of the operator.

14.2.3 An operator shall ensure that all personnel involved in the transportation of dangerous goods are trained and certified in accordance with the ICAO Technical Instructions or the IATA Dangerous Goods Regulations and the rules specified by the State of the operator.

Note: See ICAO Technical Instructions at http://www.icao.int/safety/DangerousGoods/Pages/technical-instructions.aspx

14.2.4 An operator shall also have a system to advise their shipping departments of what constitutes dangerous goods and whether and how those goods can be carried on aircraft.

14.2.5 An operator shall not accept dangerous goods for transport from third parties unless those parties have complied with all relevant provisions of the ICAO Technical Instructions or the IATA Dangerous Goods Regulations and the rules specified by the State of the operator.
14.2.6 An operator shall ensure that the pilots-in-command of their aircraft are informed of what dangerous goods are being carried on board the aircraft, as early as practicable before the departure of the aircraft.

14.2.7 In the event an aircraft carrying dangerous goods is involved in an accident or serious incident, the operator of an aircraft carrying dangerous goods shall provide information, without delay, to emergency personnel responding to the accident or serious incident about the dangerous goods on board, as shown in the written information to the pilot in command. As soon as possible the operator shall also provide this information to the appropriate authorities of the State of the Operator and the State in which the accident or serious incident occurred.

14.2.8 In the event of an aircraft incident, the operator of an aircraft carrying dangerous goods shall, if requested to do so, provide information without delay to the emergency services personnel responding to the incident and to the appropriate authority of the State in which the incident occurred, about the dangerous goods on board, as shown on the written information to the pilot-in-command.

*Note: Additional guidance on the transportation of dangerous goods may be found in the IATA Dangerous Goods Regulations, and ICAO Annex 18.*
15. **Security**

15.1 An operator shall establish, maintain and carry out a security programme that is proportional to the threat against the operator, its personnel, aircraft and facilities and the associated vulnerabilities and that meets the requirements of the State of the operator.

15.2 The security programme shall include a process to assess threats and vulnerabilities, preventive measures designed to reduce vulnerabilities and deter and prevent the commission of unlawful acts, responsive measures to be taken when an unlawful act has been committed against the operator, and appropriate training and testing of personnel involved.

*Note 1:* See IG 15.0 for guidance on operator security programmes. Also, the NBAA Best Practices for Business Aviation Security can be found at [http://www.nbaa.org/ops/security/best-practices](http://www.nbaa.org/ops/security/best-practices).

*Note 2:* Attachment B to IG 15.0 contains the NBAA Voluntary Security Protocol for Part 91 Operators. The NBAA Security Protocol was developed to serve as the NBAA recognized and Transportation Security Administration (TSA) endorsed standard for demonstrating an acceptable security protocol for Business Aviation. For latest amendments check with the NBAA.
### Appendix A: Terminology, Abbreviations and Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
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<tbody>
<tr>
<td>ACAS</td>
<td>Airborne Collision Avoidance System</td>
</tr>
<tr>
<td>AIP</td>
<td>Aeronautical Information Publication</td>
</tr>
<tr>
<td>Aircraft Crew</td>
<td>Any crew member assigned duty on board an aircraft.</td>
</tr>
<tr>
<td>AMO</td>
<td>Approved Maintenance Organisation</td>
</tr>
<tr>
<td>ANS</td>
<td>Air Navigation System</td>
</tr>
<tr>
<td>ATC</td>
<td>Air Traffic Control</td>
</tr>
<tr>
<td>ATPL</td>
<td>Airline Transport Pilot Licence</td>
</tr>
<tr>
<td>ATS</td>
<td>Air Traffic Services</td>
</tr>
<tr>
<td>BBGA</td>
<td>British Business and General Aviation Association</td>
</tr>
<tr>
<td>Cabin Crew</td>
<td>Any crew member assigned duty in the cabin of a passenger transport aircraft.</td>
</tr>
<tr>
<td>CAM</td>
<td>Continuing Airworthiness Manager</td>
</tr>
<tr>
<td>CAMO</td>
<td>Continuing Airworthiness Management Organisation</td>
</tr>
<tr>
<td>CAME</td>
<td>Continuing Airworthiness Management Exposition</td>
</tr>
<tr>
<td>CAT II and III</td>
<td>Category limits associated with a precision instrument approach system.</td>
</tr>
<tr>
<td>CDI</td>
<td>Course Deviation Indicator</td>
</tr>
<tr>
<td>CEO</td>
<td>Chief Executive Officer</td>
</tr>
<tr>
<td>C of A</td>
<td>Certificate of Airworthiness</td>
</tr>
<tr>
<td>C of R</td>
<td>Certificate of Registration</td>
</tr>
<tr>
<td>CNS</td>
<td>Communications, Navigation, and Surveillance</td>
</tr>
<tr>
<td>CRM</td>
<td>Crew Resource Management</td>
</tr>
<tr>
<td>Dangerous Goods</td>
<td>Articles or substances which are capable of posing significant risk to health, safety or property when transported by air. Dangerous goods are classified in <em>ICAO Annex 18</em>, chapter 3.</td>
</tr>
<tr>
<td>Duty Time</td>
<td>A continuous period of time during which tasks are performed for the operator; determined from report time until free from all required tasks.</td>
</tr>
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Note: For information regarding CNS on the ICAO website go to this link: [http://www.icao.int/safety/pages/cns.aspx](http://www.icao.int/safety/pages/cns.aspx)
| **EGPWS** | Enhanced Ground Proximity Warning System |
| **ELT** | Emergency Locator Transmitter |
| **ERS** | Emergency Response Services |
| **FAA** | Federal Aviation Administration of the USA |
| **FATO** | Final Approach and Take-off Area |
| **FIR** | Flight Information Region |
| **Flight Crew** | Any crew member assigned duty on the flight deck of an aircraft, i.e. pilot, navigator, flight engineer. |
| **Flight time** | The sum of all flight time, calculated from block to block for each flight segment. |
| **Flight Itinerary** | Information regarding the route and duration of an intended flight that is filed with a person who will alert search and rescue if the flight becomes overdue. |
| **FMS** | Flight Management System |
| **GM** | Guidance material on meeting the requirements of a standard. |
| **GPWS** | Ground Proximity Warning System |
| **HAI** | Helicopter Association International |
| **High Seas airspace** | Airspace outside of the territory of any State. |
| **Heliport** | An aerodrome or a defined area on a structure intended to be used wholly or in part for the arrival, departure and surface movement of helicopters.  
Note: Helicopters may be operated to and from areas other than heliports. |
| **Hostile environment** | An environment in which:  
- a safe forced landing cannot be accomplished because the surface and surrounding environment are inadequate; or  
- the helicopter occupants cannot be adequately protected from the elements; or  
- search and rescue response/capability is not provided consistent with anticipated exposure; or  
- there is an unacceptable risk of endangering persons or property on the ground. |
<p>| <strong>hPa</strong> | Hectopascals |
| <strong>IBAC</strong> | International Business Aviation Council |
| <strong>ICAO</strong> | International Civil Aviation Organization |</p>
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tr>
<td>IFR</td>
<td>Instrument Flight Rules</td>
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<tr>
<td>IMC</td>
<td>Instrument Meteorological Conditions. Weather conditions that require pilots to fly primarily by reference to instruments, and therefore under instrument flight rules (IFR).</td>
</tr>
<tr>
<td>Incident</td>
<td>An occurrence, other than an accident, associated with the operation of an aircraft which affects or could affect the safety of operation.</td>
</tr>
<tr>
<td>ISO</td>
<td>International Organization for Standardization</td>
</tr>
<tr>
<td>JAA</td>
<td>Joint Aviation Authority of the European Union</td>
</tr>
<tr>
<td>JAR OPS</td>
<td>Joint Aviation Regulations – Operations</td>
</tr>
<tr>
<td>JAR-FCL</td>
<td>Joint Aviation Regulation – Flight Crew Licensing</td>
</tr>
<tr>
<td>Local operation</td>
<td>Operation of helicopters with a maximum approved passenger seating configuration (MPSC) of 9 or less; by day; navigated over routes by reference to visual landmarks; and within a local and defined geographical area specified in the operations manual.</td>
</tr>
<tr>
<td>Lower-consequence indicators</td>
<td>Safety performance indicators pertaining to the monitoring and measurement of lower-consequence occurrences, events or activities such as incidents, non-conformance findings or deviations. Lower-consequence indicators are sometimes referred to as proactive/predictive indicators. See the Implementation Guide for more information,</td>
</tr>
<tr>
<td>MEL</td>
<td>Minimum Equipment List</td>
</tr>
<tr>
<td>MNPS</td>
<td>Minimum Navigation Performance Specification</td>
</tr>
<tr>
<td>NAT</td>
<td>North Atlantic</td>
</tr>
<tr>
<td>NBAA</td>
<td>National Business Aviation Association</td>
</tr>
<tr>
<td>Non-complex helicopter operation</td>
<td>Operation of helicopters with a maximum certificated take-off mass (MCTOM) of 3175 kg or less by day and navigated over routes by reference to visual landmarks.</td>
</tr>
<tr>
<td>NOTAM</td>
<td>Notice to Airmen</td>
</tr>
<tr>
<td>Offshore operations</td>
<td>Operations which routinely have a substantial proportion of the flight conducted over sea areas to or from offshore locations. Such operations include, but are not limited to, support of offshore oil, gas and mineral exploitation and sea-pilot transfer.</td>
</tr>
<tr>
<td>Operation</td>
<td>An activity or group of activities, which are subject to the same, or similar, hazards and which require a set of equipment to be specified, or the achievement and maintenance of a set of pilot competencies, to eliminate or mitigate the risk of such hazards. Note Such activities could include, but would not be limited to, offshore operations, heli-hoist operations or emergency medical service.</td>
</tr>
<tr>
<td><strong>PBN</strong></td>
<td>Performance-based Navigation. Area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace. Note.— Performance requirements are expressed in navigation specifications (RNAV specification, RNP specification) in terms of accuracy, integrity, continuity, availability and functionality needed for the proposed operation in the context of a particular airspace concept.</td>
</tr>
<tr>
<td><strong>PF</strong></td>
<td>Pilot flying</td>
</tr>
<tr>
<td><strong>PIC</strong></td>
<td>Pilot-in-Command</td>
</tr>
<tr>
<td><strong>PM</strong></td>
<td>Pilot monitoring</td>
</tr>
<tr>
<td><strong>PNF</strong></td>
<td>Pilot not flying</td>
</tr>
<tr>
<td><strong>Policy</strong></td>
<td>A written course of action to guide and determine present and future decisions.</td>
</tr>
<tr>
<td><strong>PPC</strong></td>
<td>Pilot Proficiency Check</td>
</tr>
<tr>
<td><strong>Procedure</strong></td>
<td>A series of steps followed in a methodical manner to complete an activity – what shall be done and by whom, when, where, and how it shall be completed; what materials, equipment, and documentation shall be used, and how it shall be controlled.</td>
</tr>
<tr>
<td><strong>Process</strong></td>
<td>A set of interrelated activities that use resources to transform inputs into outputs</td>
</tr>
<tr>
<td><strong>Program</strong></td>
<td>A set of arrangements that are intended to achieve a specific purpose.</td>
</tr>
<tr>
<td><strong>QFE</strong></td>
<td>Height above airport or runway, local station pressure</td>
</tr>
<tr>
<td><strong>QNH</strong></td>
<td>Altitude above Mean Sea Level, local station pressure</td>
</tr>
<tr>
<td><strong>RAIM</strong></td>
<td>Receiver Autonomous Integrity Monitoring</td>
</tr>
<tr>
<td><strong>RNAV</strong></td>
<td>Area navigation</td>
</tr>
<tr>
<td><strong>RNP</strong></td>
<td>Required Navigation Performance</td>
</tr>
<tr>
<td><strong>RVSM</strong></td>
<td>Reduced Vertical Separation Minima</td>
</tr>
<tr>
<td><strong>Safety Performance Indicator</strong></td>
<td>A data-based safety parameter used for monitoring and assessing safety performance.</td>
</tr>
<tr>
<td><strong>SAR</strong></td>
<td>Search and Rescue</td>
</tr>
<tr>
<td><strong>Self-Dispatch</strong></td>
<td>When the pilot-in-command is solely responsible for all flight planning, passenger and load manifests, weight and balance calculations, performance computations, and flight following.</td>
</tr>
<tr>
<td><strong>SIC</strong></td>
<td>Second-in-Command or First Officer</td>
</tr>
<tr>
<td><strong>Term</strong></td>
<td><strong>Definition</strong></td>
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<tr>
<td>SID</td>
<td>Standard Instrument Departure</td>
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<tr>
<td>SMS</td>
<td>Safety management system</td>
</tr>
<tr>
<td>SOP</td>
<td>Standard Operating Procedure</td>
</tr>
<tr>
<td>STAR</td>
<td>Standard Arrival Route</td>
</tr>
<tr>
<td>State</td>
<td>A Contracting State of the Convention on International Civil Aviation</td>
</tr>
<tr>
<td>System</td>
<td>An organized, purposeful structure regarded as a whole and consisting of interrelated and interdependent elements. These elements continually influence one another (directly or indirectly) to maintain their activity and the existence of the system, in order to achieve the goal of the system.</td>
</tr>
<tr>
<td>TAA</td>
<td>Technically advanced aircraft</td>
</tr>
<tr>
<td>Task specialist</td>
<td>A person, other than a flight crew member or a cabin crew member, who is assigned duties on board an aircraft during flight time</td>
</tr>
<tr>
<td>TAWS</td>
<td>Terrain Awareness and Warning System</td>
</tr>
<tr>
<td>TCAS</td>
<td>Traffic Alert and Collision Avoidance System</td>
</tr>
<tr>
<td>TR</td>
<td>Type rating</td>
</tr>
<tr>
<td>VFR</td>
<td>Visual Flight Rules</td>
</tr>
<tr>
<td>VLJ</td>
<td>Very Light Jet</td>
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