Samgöngustofa

THE ICELANDIC AVIATION SAFETY PROGRAMME

IASP

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ABBREVIATIONS

ALoS	Acceptable Level of Safety
AMC	Acceptable Means of Compliance
Annex 19	ICAO Safety Management
ANSP	Air Navigation Service Provider
ATM	Air Traffic Management
ICAA	Icelandic Civil Aviation Administration
CFIT	Controlled Flight into Terrain
CSP	EASA Community Safety Programme
EASA	European Aviation Safety Agency
EASP	European Aviation Safety Programme
EC	European Commission
ECAC	European Civil Aviation Conference
ECCAIRS	European Co-ordination Centre for Accident and Incident Reporting
EPAS	European Plan for Aviation Safety
ER	Essential Requirements
ESARR	Eurocontrol Safety Regulatory Requirement
EU	European Union
Eurocontrol	European Organisation for the Safety of Air Navigation
FDM	Flight Data Monitoring
GA	General Aviation
ICAO	International Civil Aviation Organisation
IR	Implementing Rule
IASP	Iceland Aviation Safety Programme
JAA	Joint Aviation Authorities
SAFA	Safety Assessment of Foreign Aircraft
SANA	Safety Assessment of National Aircraft
SAR	Search and Rescue
SARPs	ICAO Standards, Recommended Practices and Procedures
SES	Single European Sky
SMS	Safety Management System
SPI	Safety Performance Indicator
SSP	State Safety Programme
USOAP	Universal Safety Oversight Audit Programme (ICAO)

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1 ICELAND AVIATION SAFETY PROGRAMME AND INTERNATIONAL OBLIGATIONS

1.1 Obligations of the International Civil Aviation Organization (ICAO)

The International Civil Aviation Organization (ICAO) is a specialized agency of the United Nations. Its duties are defined in the Convention on International Civil Aviation (the Chicago Convention) signed on 5 December 1944. The purpose of ICAO is to develop policies, principles, standards and recommendations to be complied with in international aviation. The agency's specific duties include promoting aviation safety internationally.

In Annex 19 (Safety Management) to the Convention, ICAO imposes general safety management responsibilities and obligations on member states, having to do with the development and introduction of State Safety Programme (SSP) and aviation organizations' Safety Management Systems (SMS).

The Global Aviation Safety Plan (GASP) was created to facilitate global and coordinated improvement of aviation safety. The GASP is updated every three years and adopted by the ICAO Assembly. The purpose of the GASP is to underline the importance of safety as the main priority in civil aviation and to bring together globally determined key safety objectives and areas of safety performance and to support the achievement of the objectives in all areas (Annex A to GASP, Global aviation roadmap). The GASP outlines global safety and sets the structure of safety management for regional and national levels as agreed by ICAO.

ICAO has launched a Safety Management programme running through 2022 to support regions and governments in the efficient deployment of SSP and SMS. Responsibility for safety management is widely distributed among ICAO regional organizations, such as the European Aviation Safety Agency (EASA), national governments and aviation organizations.

1.2 The European Aviation System and Iceland´s role

The European Aviation Safety Programme (EASP) describes aviation safety management at the European level. It provides an overview of the applicable legislation, measures and processes.

The European Plan for Aviation Safety (EPAS) has been published since 2011, being updated annually for a four-year period. This document describes the identified key risks in aviation at the European level and strategic safety objectives and measures for attaining them, while acknowledging the global objectives set forth in the GASP. EPAS 2019 - 2023, which was published in November 2018, adopts a comprehensive approach to the European aviation system and, in addition to safety, contains objectives and prioritized measures for maintaining and improving the environmental

performance, efficiency / proportionality and competitive-ness as well as a level playing field in European aviation.

The amended EASA Regulation (published in 2018) made EASP and EPAS as well as State Safety Programme and Plans mandatory. Similar requirements were earlier imposed on member states in ICAO Annex 19.

The EPAS is produced as part of the Safety Risk Management process (SRM) at EASA. EASA coordinates the development of the European aviation risk portfolio within its SRM process. ICETRA exerts influence on the contents of the EPAS in EASA's SRM process by being involved in the expert and decision-making forums. Through the forums of this process that progresses following an annual cycle, Member States and aviation stakeholders can participate in and influence European aviation risk management. Results are published in the Annual Safety Review and as prioritized measures compiled in the EPAS. EPAS is a risk- and information-based and anticipatory European "risk management portfolio" to which EASA Member States are committed.

Iceland incorporates as appropriate the measures required in the EPAS of Member States into the Icelandic Plan for Aviation Safety. Aviation organizations must process, document and implement the measures for applicable parts. ICETRA oversees the processing and implementation of these measures and reports to EASA on the progress of measures assigned to the Member States.

1.3 The Icelandic Aviation Safety Programme

The Icelandic Transport Authority has issued a state safety policy in aviation;

The safety of Icelandic Aviation System is based on implementing the provisions of ICAO, EU and EASA and their promulgation. Safety is a priority and the risk set to be as low as reasonably practicable, balanced with financial, operational, environmental and social aspects.

Managing safety is collaboration between authority and service providers, all stakeholders manage their safety through management system, constantly improving that system for the benefit of safety and efficiency while minimizing the environmental impact.

Stakeholders of the Aviation System keep their resources, expertise and staff required for aviation safety at a sufficient level, implement and support "Just culture" principles and promote safety material and information.

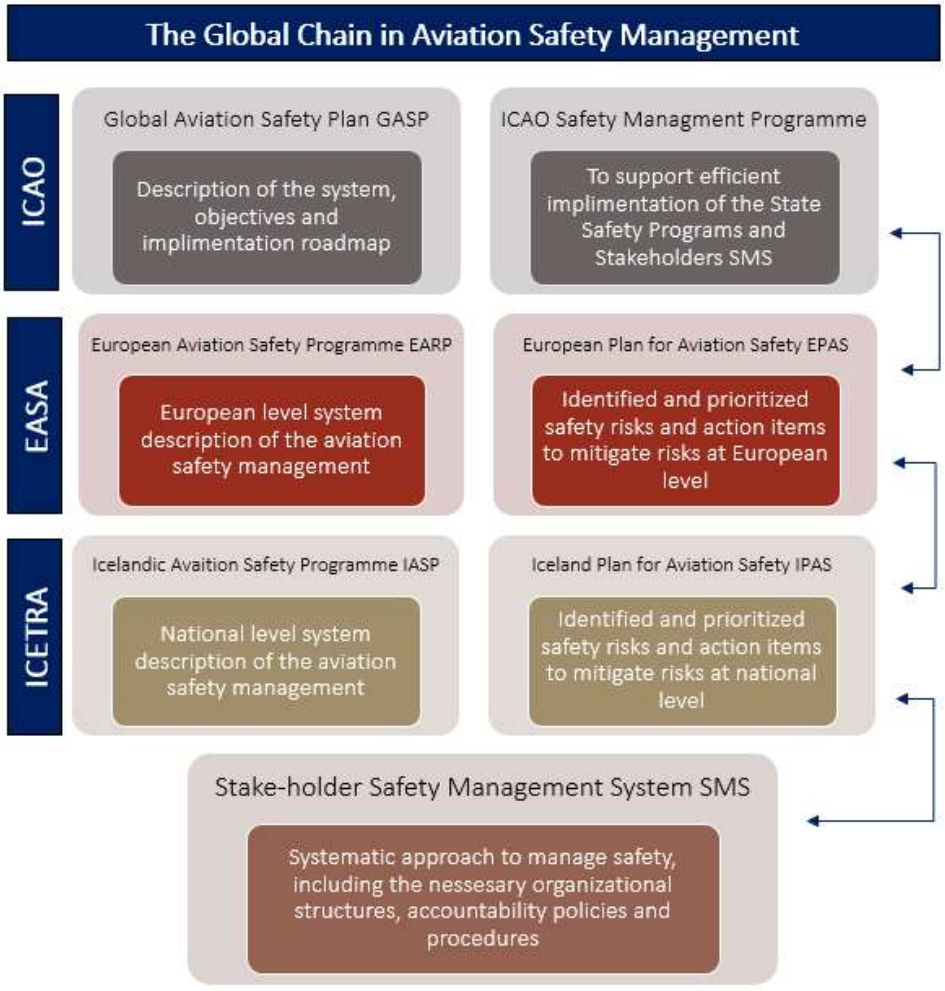
The Icelandic Aviation Safety Programme (IASP) is a description of the various regulations and necessary activities for maintaining and improving the safety of aviation and ensuring that Iceland operates in compliance with EASA regulations and the safety management requirements set forth in the appendices to the Chicago Convention. The aviation safety programme describes how Iceland has ensured, through legislative means that the service providers have the required safety management system. It also describes the monitoring of the functioning of the safety management systems, and that the responsibilities and authorities of the individual operators are clearly defined. The aviation safety programme also serves as a tool for describing the complex network

of regulations composed of the legislation of individual sectors of aviation as a single, clear entity with the objective of improving aviation safety.

ICAO standards require States to establish a State Safety Programme (SSP) in order to document and develop activities aimed at improving aviation safety. Iceland has already the main elements of an SSP in place, regulations, standards, guidelines and training in a harmonized aviation system. However further development needs to be achieved, primarily by addressing and applying a risk management approach.

The requirement for an SSP recognizes that States as well as service providers have safety responsibilities and provides a framework within which service providers are required to establish Safety Management Systems (SMS). In order to monitor results service providers must in this context establish safety indicators and specify target levels of safety. ICAO standards also require that the acceptable level of safety to be achieved is established by the state concerned. This concept attempts to complement the current approach to safety management based on regulatory compliance with a performance based approach.

The SSP is one of the safety programmes in the Icelandic Transport Policy that is agreed upon in the national parliament. The ICAO standards for an SSP are contained in ICAO Annex 19.



2 ICELAND´S AVIATION SAFETY OVERSIGHT AGREEMENTS

2.1 The Ministry of the Transport and Local Government

The Ministry of Transport and Local Government is responsible for all land, air and maritime transport matters, including legislation in the field, planning, development and operation of infrastructure systems, transport safety and protection. It is responsible for telecommunications, digital communication, Internet security and postal services, as well as local government administration, regional policy, registration of citizens and property and real estate valuation.

According to Act No. 60/1998 on Aviation, the Aviation Act, authority is delegated from the Ministry of the Transport and Local Government to the Icelandic Transport Authority, ICETRA, where the ICETRA participates in the development and revising of operating regulations. Furthermore ICETRA has executing power and issues decisions, within the framework of the Aviation Act. Notwithstanding the before mentioned, it is the Ministry of Transport and Local Government which has the responsibility of issuing all operating regulations in the field of aviation, with legal basis in the Aviation Act.

2.2 The Icelandic Transport Authority, ICETRA

Article 1 of the *Act on the Icelandic Transport Authority (ICETRA), administrative institution for transport affairs, No. 119/2012,* with subsequent amendments, defines ICETRA as a special government institution, subject to the authority of the Minister. ICETRA manages the administration of transport affairs, and conducts, as mentioned earlier, administration and regulation pertaining to aviation.

It should be noted that the role of ICETRA is only of a regulatory and surveillance nature, it has not the role of a service provider. ICETRA's decisions may be appealed to the Ministry of the Interior in accordance with the Act on Public Administration No 37/1993.

2.3 Accident Investigation

The Act on Investigation of Transport Accidents, No. 18/2013 provides for the framework for the Icelandic Transportation Safety Board (ITSB). ITSB is an autonomous, independent organization, and is in its investigations independent in regard to other investigating parties, prosecuting authority, and courts.

The investigation institute is headed by a Director appointed by the Ministry of Transport and Local Government. The Director is responsible for and conducts the board's daily operations making sure that they are in accordance with the applicable laws and regulations. A board of specialists is responsible for reviewing the institute's investigation work and approves investigation reports.

3 SAFETY POLICY AND OBJECTIVES

3.1 Primary aviation legislation

- The Act on the Icelandic Transport Authority (ICETRA), administrative institution for transport affairs, No. 119/2012 ("the Act on ICETRA")
- The Aviation Act No. 60/1998, as amended
- Regulations in the field of aviation
    - European regulations (standards often set out by the European Aviation Safety Agency (EASA)) – this list is not exhaustive:
        - Commercial Air Transport by Aeroplanes
        - Air Navigation Services (ANS) / Air Traffic Management (ATM) and on Single European Sky (SES)
        - Airworthiness
        - Air crew
        - Air Operations
        - Customer rights
        - Airports
        - Licences
    - ICAO Annexes
    - Domestic regulations/rules

The Ministry of the Interior is in charge of issuing all operating regulations according to the Aviation Act. The legal basis can be found for example in Article 57 a (6) and Article 145 of the Act.

Primary aviation legislation is available at www.althingi.is and regulations are available at www.reglugerd.is. Primary and operating acts, regulations and rules are always published in the official journal "Stjornartidindi" in order to enter into force. Access to applicable aviation law and regulations is also at www.icetra.is.

Available at www.stjornartidindi.is.

3.2 Policy and Safety standards

The Act on ICETRA provides that the Icelandic Transport Authority shall contribute to safe, sustainable, accessible and economical transport. Furthermore the Authority monitors that requirements are followed as regards safety of transport structures and safety management in their operation. To this end the Icelandic Transport Authority conducts safety audits of transport structures.

In addition the Aviation Act provides for safe flight operations, where ICETRA acting within its competencies set out in the Act, carries out certifications, and conducts inspections and audits.

A safety policy for Iceland should stress the following points:

- To ensure that Flight Safety levels are comparable to what is best achieved by other states /regions

- To implement and enforce the standards of ICAO, EU, and EASA
- That the aviation system meets efficiently the requirements of international audits

Responsibility for safety is divided between the authority and the service providers in line with their division of responsibility.

ICETRA commits to keep its resources, expertise and staff required for aviation safety duties at a sufficient level.

Through the EEA – agreement EU regulations and directives are transposed into the Icelandic legal system by national implementing acts or regulations.

ICETRA carries out an impact assessment of new EU regulations and the Ministry of the Interior either adopts a regulatory act, or submits an implementing bill to the Parliament.

- EASA implementing rules (IR)
- EC/EU regulations/directives
- National regulations

3.3 Enforcement policy

In the Aviation Act, ICETRA is provided with enforcement powers in the case of breach of provisions of the Act or rules established pursuant to it.

The fundamental methodology of ICETRA to enforce regulations in the field of aviation safety is to inspect and perform audits on approved/authorized entities in accordance with this State Safety Programme, as well as on the basis of the legal framework in the field of aviation. An entity has to demonstrate that it continuously fulfils all the conditions for the authorization/privileges it holds; otherwise those privileges cannot be exercised. Approved/authorized entity has to come up with a corrective action plan and sometimes immediate remedies as otherwise it would have to cease its activities.

Inspection, audits, corrective actions plans and follow–ups are the most effective enforcement approaches as approved/authorized entities usually want to be able to continue to exercise their privileges.

Procedures for audits, inspections and corrective actions are part of ICETRA´s management system. If approved/authorized entities do not take the necessary corrective actions in a timely manner or the case is of a serious nature, it is forwarded to the legal department of ICETRA.

3.4 Occurrence reporting regulations

The following EU acts provide the basis for the Icelandic Transport Authority occurrence reporting system:

- Regulation 1321/2007 implementing rules for the integration into a central repository of information on civil aviation occurrences
- Regulation 1330/2007 implementing rules for the dissemination to interested parties of information on civil aviation occurrences

For operators EASA's Implementing Rules on Air Operations and related Acceptable Means of Compliance (AMC) (Reg. 965/2012) contain a number of provisions related to Occurrence Reporting, which are complementary to Regulation (EU) No 376/2014 and 2015/1018.

The ICETRA operates the ECCAIRS database which is a set of tools to capture, store and analyze accident/incident/occurrence data based on ICAO taxonomies.

Regulation (EU) No 376/2014 on occurrence reporting in civil aviation obliges Member States and Iceland through the EEA agreement to collect and exchange the information about these incidents.

4 SAFETY RISK MANAGEMENT

A safety management system involves a systematic approach that includes the administrative structures, accountability, safety policy and procedures required for safety management. The safety management system is used to identify safety threats, ensure corrective action to maintain appropriate levels of safety, carry out continuous monitoring and regular assessment of safety levels, and strive for continuous improvement of the safety management system.

4.1 Requirements for service providers' safety management systems

Currently, ICAO requirements for a SMS are contained in Annexes 1 (Personnel Licensing), 6 (Operations of Aircraft including Maintenance), 8 (Airworthiness of Aircraft,), 11 (Air Traffic Services), 13 (Aircraft Accident and Incident Investigation), and 14 (Aerodromes). Furthermore Annex 19 (Safety Management).

1. In response to existing ICAO Standards that call for SMS for Air Navigation Service Providers (ANSPs) and Airport Operators, ICETRA now requires SMS for ANSPs and Airport Operators.

2. For air navigation service providers, the requirement for a safety management system was implemented in 2005, stated now in EU Regulation No. 1035/2011, which requires an air navigation service provider to have a safety management system before it can be granted an approval to provide such services.

3. For aerodrome operators regulation 464/2007 applies where SMS is required for aerodromes in category 1.

4. The Part ORA requirement for a SMS for flight training organisations has been implemented in Iceland by a regulation since May 2013.

5. For airline operators and approved maintenance organizations, the ICAO Standard requires SMS from 1 January 2009. In response to this, ICETRA promoted the voluntary implementation of SMS by airline operators and is contributing towards the development of new EASA Implementing Rules. EU Regulation 859/2008 (EU-OPS) has, since 2008, included a requirement for an accident prevention and flight safety programme, which has been used to identify safety threats and for implementation of corrective action. Regulation 965/2012 was then implemented in Iceland in April 2014.

6. For maintenance organisations, the SMS will be implemented for CAMO in 2020 by amendment (EU) 2019/1383 to Regulation (EU) 1321/2014. For maintenance organisation the SMS will be implemented late 2020 or early 2021.

7. The impact of SMS on regulatory oversight has yet to be fully considered. It is, therefore, important that ICETRA staff with oversight responsibilities for service providers SMS have a common and clear understanding of the fundamental principles of SMS. In response, ICETRA has provided internal SMS training for staff based on ICAO Safety Management Manual.

The ICETRA shall, in oversight audits and approval processes, monitor and review the operation and adequacy of service providers' safety management systems.

4.2 Authority requirements for management system

Authorities are required to have a management system that includes a documented policy and procedures that describe their organization as well as the tools and procedures available. The authority must also have an adequate number of qualified staff, as well as the necessary procedures for assessing and verifying the sufficiency and qualifications of staff. The authority shall have a compliance monitoring system to assess how its own operations comply with the requirements.

A management system involves a systematic approach that includes the administrative structures, accountability, safety policy and procedures required for safety management. The management system is used to identify safety threats, ensure corrective action to maintain appropriate levels of safety, carry out continuous monitoring and regular assessment of safety levels, and strive for continuous improvement of the safety management system.

ICETRA shall, through annual audits and approval processes, monitor and review the operation and adequacy of service providers' safety management systems.

4.3 Acceptable level of safety

An important part of the Aviation Safety Programme is the definition of an acceptable level of safety by means of safety performance targets (SPT) and safety performance indicators (SPI). Safety performance targets indicate the minimum level that service providers shall reach in their operations. The achievement of the safety level will be monitored via safety performance indicators relevant to each target.

The definition of an acceptable level of safety is an important part of the SSP. The achievement of the safety level will be monitored via safety performance indicators (SPI). By defining the acceptable safety level for operators in the various sectors of aviation, the ICETRA has set its limits of tolerance. It will intervene if an adequate level of safety is not achieved.

The SPI's defined by ICETRA are well known ICAO and EASA indicators. Annex 2 lists the SPI's and the associated targets for different sectors.

The main purpose of defining indicators is to develop systematic and continuous monitoring methods. The indicators are also a good way to structure a large amount of safety data from diverse sources, including air safety reports and analysis of FDM data. Monitoring and analysis of the indicators helps the authority to target its activities in a risk-based manner and helps air operators to monitor and improve the safety of their operations. Monitoring of indicators will also provide information on the success and effectiveness of the measures taken.

The main purpose of defining indicators is to develop systematic and continuous monitoring. Analysis of the indicators helps the ICETRA to target its activities in a risk-based manner. Likewise it helps air operators to monitor and improve the safety of their operations. Monitoring of indicators will also provide information on the success and effectiveness of the measures taken.

In the so-called "framework regulation" (REGULATION (EC) No 549/2004) performance and safety is addressed. To aim is to improve the performance of air navigation services and network functions in the single European sky, a performance scheme for air navigation services and network functions shall be set up. It shall include:

- Community-wide performance targets on the key performance areas of safety, the environment, capacity and cost-efficiency;
- National plans or plans for functional airspace blocks, including performance targets, ensuring consistency with the Communitywide performance targets; and
- periodic review, monitoring and benchmarking of the performance of air navigation services and network functions.

The effectiveness of the safety performance targets and safety performance indicators is reviewed annually in connection with the assessment of the need for updating. The review will take into account any future safety performance targets from the EASP and EASA European Aviation Safety Plan and other sources.

4.4 Safety planning

Iceland's safety planning is primarily based on information gained through the transport system safety management process of the ICETRA; and on national targets and tasks specified in the EASA European Aviation Safety Plan.

The transport system safety management process of ICETRA consists of systematic data acquisition and analysis procedures, decisions on action based on the data analyses, and the evaluation of their effectiveness. ICETRA evaluates the risk levels of the various operators and areas in the aviation sector and, based on this evaluation, focuses regulatory, oversight and safety communications measures on areas where risk levels are highest.

The European Aviation Safety Plan is a four-year plan issued by the EASA outlining the key areas of safety that should be addressed at European level, including measures specified in order to improve safety.

5 SAFETY ASSURANCE

5.1 Safety oversight

Safety oversight is mainly based on entry controls through approvals and licensing and consequently inspection and audit oversight activities. The Icelandic Transport Authority (ICETRA) has well defined processes in forms of procedures by which safety oversight of flight operations, airworthiness, air navigation services, ATCO training and aerodrome and flight training is performed. These processes are based on ICAO, EU and national requirements established for each area.

Based on the assessment carried out during the approval and licensing process, the Icelandic Transport Authority either approves or rejects the application and can also requests further information, set additional requirements or limit the intended scope of the approval. In the process, the Icelandic Transport Authority also verifies that service providers' personnel and private aviators meet relevant qualification requirements. Service providers are audited according to annual oversight plans.

The inspection and auditing processes are used to oversee the activities of the service provider and its safety management system, ensuring that they fulfil the national, international and the service provider's own requirements. Service providers are generally audited according to an annual oversight plan. In addition, operations are monitored through individual inspections, observation flights and monitoring of training events. In addition, operations are monitored through individual inspections, observation flights and monitoring of training events.

The oversight plan describes in more detail the areas, organizations or units to be audited. Audits are carried out by inspectors qualified in auditing in accordance with the relevant area of expertise required. After the audit, the service provider receives an audit report describing the findings and the status observed. The Icelandic Transport Authority assesses proposed corrective actions and either approves them or requests further clarification if needed.

To ensure the quality of the Icelandic Transport Authority's own activity, it has an operational system that describes the processes and operating procedures according to which oversight is conducted. As part of this operational system, the Icelandic Transport Authority conducts internal audits. Internal audits should ensure that the Icelandic Transport Authority's operations comply with the processes and operational guidelines described in this system. Internal audits are carried out in accordance with the internal audit process and based on an annual audit plan.

The Icelandic Transport Authority is subject to external audits. EASA monitors national authorities through inspections performed for each area individually. As part of the CMA/USOAP work, ICAO conducted an audit of the Icelandic aviation system in 2010. In 2018, EASA conducted a SYS audit.

5.2 Safety data collection, analysis and exchange

The Icelandic Transport Authority collects safety information through various sources, primarily, through mandatory and voluntary occurrence reports. Occurrence reports shall be filed to the Icelandic Transport Authority by air operators, individuals or anyone performing flight safety related duties on any accident, serious incident or other occurrence that compromise, or without intervention would compromise, the safety of an aircraft, its occupants or any other persons. Accidents and serious incidents must additionally be reported to the Icelandic Transportation Safety Board (ITSB) without delay.

A voluntary report can also be submitted anonymously. Anyone who becomes aware of an issue affecting flight safety for which he or she is not obliged to file a report may submit a voluntary report.

Reports to the Icelandic Transport Authority shall be made on forms approved by the authority. If the task of filing reports to the Icelandic Transport Authority has been assigned to a certain entity within the air operator's organization, the operator shall employ a system for ensuring that the obligation to report is fulfilled.

In cases of accidents, serious incidents and air traffic incidents the ITSB takes the decision to initiate an investigation in accordance with International Civil Aviation Organization's Annex 13. Reports to the ITSB shall be made on forms approved by ITSB and a copy of this report must be sent to the Icelandic Transport Authority without the forms appendix.

The Icelandic Transport Authority stores the occurrence reports received, without identifying information, in the European Coordination Centre for Accident and Incident Reporting Systems (ECCAIRS) database. Through ECCAIRS, Iceland exchanges safety information with other states that store data in the database. Occurrence data received through occurrence reports are used in accordance with 'just culture' principles and confidentiality of occurrence information is provided for.

The Icelandic Transport Authority stores the occurrence reports received, without identifying information, with aid of the European Coordination Centre for Accidents and Incident Reporting System (ECCAIRS). Through ECCAIRS, Iceland exchanges safety information with other states that store data in the database.

In addition to occurrence reports, other sources of safety related information include audit and inspection findings, analyses of FDM data, information from safety management systems of aviation organizations, accident investigation reports, findings on observation flights, ramp inspection findings and other national and international information sources.

The Icelandic Transport Authority assesses the severity and frequency of every occurrence that has come to its knowledge. Based on all of the safety information gathered, it makes analyses to identify major trends that affect safety, factors

contributing to the incidents, and the effectiveness of safety barriers. The information analyzed is also used for monitoring the status of safety performance indicators and defining corrective actions if necessary.

The following legal documents provide the basis for the Icelandic Transport Authority occurrence reporting system:

- EU 376/2014 on occurrence reporting in civil aviation.
- EU 2015/1018 laying down a list classifying occurrences in civil aviation to be mandatorily reported

For operators ORO.GEN.160 on occurrence reporting and (EU) 2015/1018 also provide guidance to determine which occurrences are to be reported.

5.3 Safety data driven targeting of oversight

The safety information data collected and the results of analyses are used for risk-based targeting of oversight. Actions can for example be an increase in the number of inspections or audits, together with emphasis on certain areas. Risk-based criteria in oversight planning and implementation are taken into account in the oversight processes and work instructions of the Icelandic Transport Authority.

To support an inspection or audit of an organization or a unit, the safety and promotion section of the Icelandic Transport Authority may assist by making an analysis based on safety information concerning the organization or unit to be inspected. This helps to identify risk areas and factors that should be taken into account in the audit or inspection.

The safety planning process employs both a 'bottom up' model, using the considerable expertise in the organization to identify potential risks, and a 'top down' process, starting with the major risks as evidenced in the data, using mandatory occurrence reports and other data sources. This process describes Iceland‘s aviation industry's safety performance and highlights the safety improvements the Icelandic Transport Authority would like to focus on.

5.4 Safety of Foreign Aircraft

In 1996, the European Civil Aviation Conference (ECAC) launched its Safety Assessment of Foreign Aircraft programme (SAFA) to complement ICAO audits by concentrating on actual aircraft checks at airports (ramp inspections) aimed at ensuring that relevant ICAO standards were being complied with. Iceland has participated from the year 1999. In 2009, 28 ramp inspections were carried-out, and the number is set to rise gradually in the coming years. The ICAA is granted authority in Icelandic regulation no. 752/2007 to inspect any aircraft that is suspected of non-compliance and to perform spot checks and to detain if necessary.

In 2004, an EC Directive (2004/36/EC) on the safety of third-country aircraft using Community airports required Member States to inspect aircraft registered outside the Community if they were suspected of non-compliance with ICAO international standards. Although not required by the Regulations, aircraft from other Member States may be subject to ramp inspections if suspected of noncompliance with international standards and as a part of spot checks. The safety oversight process takes into account the results of the ICAO Universal Safety Oversight Audit Programme (USOAP) reports, information from other SAFA ramp inspections and other recognized information.

6 SAFETY PROMOTION

6.1 Internal training and dissemination of safety information

ICETRA – Icelandic Transport Authority – emphasizes on employing highly qualified people, preferably in need of minimal training in the beginning of their work career at ICETRA. After the selection process the newly recruited employee goes through an on the job-training given by his/her head of section. These head of sections should all be qualified to give training and monitor improvement.

ICETRA maintains and develops the professional skills of its staff by providing training and supporting the maintenance of professional aviation skills. Internal courses or briefings are arranged for the staff regarding many subjects, for example, forthcoming changes to national or international regulations. The goal is to have qualified employees based on appropriate education, training, knowledge and experience. A training register is maintained for each employee, detailing completed training. The evidence of courses taken should be kept in these registers.

Within ICETRA there are many channels to communicate safety information. At least every three months, internal Aviation Safety Monitoring Group (ASMG) meeting that deals with safety information. It comprises managers and staff from operational areas. Twice a year there is Aviation Safety Review Board (ASRB) meeting, it is a high-level committee which considers strategic safety functions. There are frequent department meetings dealing with the subject as well. Then on the internet information relevant to the employees can be found and is published

6.2 External training and dissemination of safety information

As part of its task as a regulatory authority, ICETRA provides advice and information to aviation-industry organizations and individuals on, for example, changes in national and international regulations and guidelines. Regular meetings are held with representatives of companies and organizations in the industry. In additions ICETRA employees answer questions personally through emails and phone as well as information are posted on the website www.ICETRA.is. The ICETRA website is used to establish important information, safety-related events, educational content as well as information on national and international law. ICETRA holds number of aviation safety meetings, promoting aviation safety on for example Facebook, Instagram as well as www.alltumflug.is

ICETRA aims towards regular briefings with the aviation industry were a summary will be given on occurrences in aviation. In that way, a prioritization in educational and promotional activities will be made in accordance with those themes found in occurrence reporting each year.

ANNEXES

Annex 1 An Acceptable Level of Safety

Background

ICAO Standards set out the requirement for States to establish a State Safety Programme (SSP) in order to achieve an acceptable level of safety (ALoS) in the operation and maintenance of aircraft, the provision of air traffic services and the operation of aerodromes. The Standards explicitly call for States to establish an ALoS to be achieved by the State concerned and also call for the adoption by service providers of SMS. However, ICAO emphasizes that the ALoS should not refer to a national or State-level objective, but must relate to an SSP or SMS as the means to verify the operational performance.

The move to both SSP and SMS reflects a fundamental regulatory change to complement the compliance-based approach with a performance-based approach. It is no longer possible to assume that regulatory compliance alone will produce safety improvements. A more pro-active, performance-based approach is necessary to achieve continuous safety improvement. To do this requires both the regulator and service provider to establish and monitor objective safety performance indicators, to establish safety performance targets and to take action, where necessary, to improve safety. ICAO uses these three elements to define an acceptable level of safety for use both in an SSP and in a service provider's SMS. It is necessary to detail the three key elements that define an acceptable level of safety:

- Safety performance indicators — these are short-term, tactical measurable safety performance outcomes of the safety performance of an aviation organisation or a sector of the industry. They are expressed in numerical terms.
- Safety performance targets — these are long-term, strategic measurable safety performance outcomes of the safety performance of an aviation organisation or a sector of the industry. They are expressed in numerical terms.
- Safety requirements — these are the tools and means, to achieve the safety performance indicators and targets of an SSP. They include operational procedures, technology, systems and programmes.

ICAO Standards typically require that 'The acceptable level of safety to be achieved shall be established by the State(s) concerned'. However, the establishment of an ALoS should involve close liaison between the State and service providers so that both the SSP and service providers SMS have similar ALoS.

ICAO guidance states that in determining an ALoS, it is necessary to consider various factors such as the level of safety risk that applies, the cost/benefits of improvements to the system, and public expectations on the safety of the aviation industry. The ALoS

will also be commensurate with the complexity of individual service provider's specific operational contexts and their availability of resources to address safety risks.

ICAO states that 'Within each State there will be different ALoS for different service providers' SMS that will be agreed upon by the civil aviation oversight authority and individual service providers. The agreed ALoS will be expressed by multiple safety performance indicators and safety performance targets, never by a single one, as well as by safety requirements in the form of remedial actions. ICAO suggests that the ALoS are reviewed periodically to ensure they remain relevant and appropriate to the service providers.

Defining an Acceptable Level of Safety

Although ICAO provides much guidance on the concept of an ALoS, there are still some doubts as to what constitutes an ALoS and how States should establish one.

It is clear from discussions within Europe that views on what constitutes an ALoS vary widely. One view is that aircraft design and operational rules alone determine the ALoS to be achieved. The rule-making process to establish the rules is a public process that is finally endorsed by the European Parliament. Adherence to the rules developed by this process should mean that an ALoS will be achieved. If it is not, then the rules need to be amended.

The second view is that this first approach to the ALoS is simply a continuation of the traditional compliance-based regulatory approach. It does not recognize the aim of establishing an SSP and SMS to develop a performance-based regulatory approach. This second view recognizes ICAO's aim to develop the ability to verify satisfactory performance of a system, whether it be SSP or SMS. An ALoS should therefore relate to the overall safety performance of the air transport system or certain elements of this system. The safety performance of the system is the final outcome of a complex mixture of factors.

The ICAA supports the second view. In addition to examples of traditional safety performance indicators (for example, the number of runway incursions per 100,000 movements) it will be necessary to develop safety performance indicators in relation to proactive and predictive safety management processes.

Establishing an Acceptable Level of Safety

The current levels of safety achieved, as measured by the various safety performance indicators, are not showing continuous improvement in all areas. There is a public expectation that safety should progressively improve, within reasonable economic constraints and within a reasonable timescale. This is reflected in the ICAA's commitment to the continuous improvement of safety.

In view of the importance of this for service providers and for common interpretation within Europe, it is recommended that there should be a dialogue between the

regulators and service providers to provide greater clarity. Without this, the promotion of SMS with service providers could be significantly hampered.

ICAO stresses that establishing an ALoS for the SSP and SMS does not relieve service providers from their obligations under relevant national regulations and those arising from the Convention on International Civil Aviation (the Chicago Convention). It is evident from this that the SSP and SMS are a means to make improvements in safety over and above those resulting from a compliance-based regulatory approach.

Iceland's Safety Indicators

The ICAA is in the process of establishing a range of performance indicators for monitoring safety performance in support of its key objective for safety improvement, namely to ensure that the frequency of fatal (and, in some cases, reportable) accidents does not increase in line with forecast growth in traffic.

The SPIs are in coherence with the principles determined in the European Aviation Safety Programme (EASP). The indicators are divided into three levels or "tiers". The European Aviation Safety Programme describes the tiers and the reasoning behind the classification as follows:

- *TIER 1* refers to the number of accidents and serious incidents. It is mainly intended for the general public, and describes the final result of the safety level visible to the public. The same first tier indicators are monitored in Iceland, at EU level and globally.

- *TIER 2* (Precursor indicators) measures the functionality of the system and focuses on certain crucial issues, which have been identified as the most common or serious accident types also at international level and which therefore require monitoring and safety enhancement measures. The incident types have been defined in accordance with the international (e.g. ICAO) definitions.

- *TIER 3* (Leading indicators) was developed by reflecting on the causal factors of second tier incident types.

After identifying the causal factors, the incident types and indicators expressing these factors were determined. By monitoring the third tier indicators, defining the relevant safety performance targets for national operators and by following up how these targets are achieved, we seek to prevent second tier incidents. At the same time, the follow-up of third tier indicators helps to measure the functionality of the targets defined. Safety performance targets have been defined for training organizations, air operators, maintenance organizations, aircraft design and manufacturing organizations, air traffic service providers and airport operators. At this initial stage, the safety performance targets and indicators are determined based on an expert assessment of the factors to be measured. In the future, the definition of safety levels will be based on information obtained through a risk assessment system.

Tier 1 Safety Performance Indicators – SPI´s

The following (first tier) SPI´s are being used in Iceland to assess the level of safety of the aviation system:

- Number of fatal accidents (in a 10-year period)
- Rate of fatal accidents in scheduled CAT operations.
- Rate of accidents in scheduled CAT operations
- Number of accidents in helicopters operations
- Number of fatalities in General Aviation operations
- Number of accidents and serious incidents

ICETRA aims to produce quarterly 'Safety Performance Indicators'. These are operationally specific indicators and are based on occurrence data. These indicators are of value to the regulator to monitor safety performance and to establish safety improvement strategies. The monitoring is supported by safety analysis of the data by specialist teams to identify areas for improvement.

Tier 2 and 3 Safety Performance Indicators

The precursor indicators (Tier 2) are in bold and the leading indicators (Tier 3) are in sub-bullets:

- LOC-I: Loss of Control – inflight
  - Excessive roll attitude or roll rate (Increased roll attitude or rate)
  - Stall warning (stick shaker)
  - Excessive speed/vertical speed/accelerations (vertical or configuration)
  - Insufficient energy at high altitude (airspeed altitude cannot be maintained)
  - Low go-around or rejected landing (go-around)
  - High pitch angle
  - Failure of primary flight instruments

- 2. CFIT: Controlled Flight into or toward terrain
  - EGPWS hard warnings
  - Descent below MSA
  - Navigation errors

- 3. RE: Runway Excursion
  - High speed rejected take-off
  - Take-off with abnormal configuration
  - Insufficient take-off performance
  - Unstable shortly before landing
  - Abnormal attitude or bounce at landing (runway contact)

  - Hard or heavy landing
  - Aircraft lateral deviation at high speed on ground (occurrences with crosswind conditions)
  - Low remaining runway length when braking. Long or fast landings.
  - ATA32 related occurrences

- 4. MAC: Airprox/ACAS alert/loss of separation/(near)Mid-Air-Collision
  - TCAS/ACAS Resolution Advisory
  - Losses of separation
  - Inadequate separation
  - Level Busts
  - Airspace infringements

- 5. RI-VAP: Runway incursion – vehicle, aircraft or person
  - Runway Incursions

- 6. GCOL: Ground Collision and RAMP: Ground handling
  - Taxiway incursions
  - Avoiding manoeuvres during taxi
  - Aircraft collisions and collisions with aircraft

- 7. System Component Failure
  - Engine failure
  - Flight control problems
  - Helicopter tail rotor and main rotor blade failures or malfunctions

The Safety Key Performance Indicators (KPIs) have recently been established for the ICAO NAT Region by the NAT SPG. While targets have not yet been established for all KPIs, some were established by the NAT SPG at the recommendation of the VRTF (Vertical Risk Task Force).