Samgöngustofa

THE ICELANDIC AVIATION SAFETY PROGRAMME

IASP

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ABBREVIATIONS

ALoS	Acceptable Level of Safety
AMC	Acceptable Means of Compliance
ANSP	Air Navigation Service Provider
ATM	Air Traffic Management
ICETRA	Icelandic Transport Authority.
CFIT	Controlled Flight into Terrain
CSP	EASA Community Safety Programme
EASA	European Union 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
EU	European Union
EUROCONTROL	The 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 specialised 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, including the development and introduction of State Safety Programmes (SSP) and aviation organisations' 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 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 regional and national safety efforts and safety management structures as agreed by ICAO.

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

1.2 The European Aviation System and Iceland´s Role

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

The European Plan for Aviation Safety (EPAS) has been published since 2011 and is updated annually for four years. 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 goals set forth in the GASP. EPAS 2023-2025, which was published in January 2025, adopts a comprehensive approach to the European aviation system and, in addition to safety, contains objectives and prioritised measures for maintaining and improving the environmental performance,

proportionality efficiency/proportionality and competitive-less competitiveness as well as a level playing field in European aviation.

The amended EASA Regulation (published in 2018) made EASP, EPAS, and State Safety Programmes and Plans mandatory. Similar requirements were earlier imposed on governments 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 influences the EPAS's contents in EASA's SRM process by being involved in the expert and decision-making forums. Through the forums of this process that progress 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 prioritised 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 organisations 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 the 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 a collaboration between authority and service providers. All stakeholders manage their safety through a management system, constantly improving that system for the benefit of safety and efficiency while minimising the environmental impact.

Stakeholders of the Aviation System must maintain sufficient resources, expertise, and staff required for aviation safety, implement and support "Just Culture" principles, and promote safety materials and information.

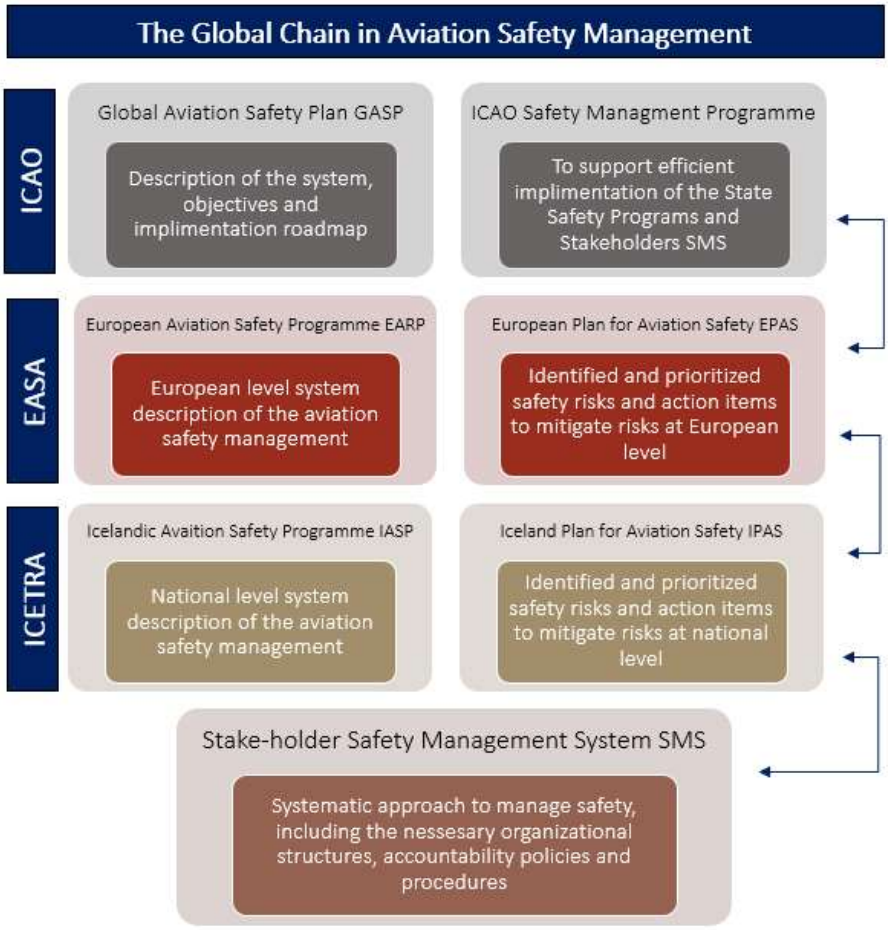
The Icelandic Aviation Safety Programme (IASP) is Iceland's State Safety Programme (SSP). IASP is a description of the various regulations and necessary activities for maintaining and improving the safety of aviation and ensuring that Iceland operates in compliance with EASA regulations and the safety management requirements outlined 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 particular sectors of aviation as a single, transparent entity to improve aviation safety.

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

The requirement for an SSP recognises 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). 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 a safety programme in Icelandic transport policy that is agreed upon in the national parliament. The ICAO standards for an SSP are contained in Annex 19.



2 ICELAND´S AVIATION SAFETY OVERSIGHT AGREEMENTS

2.1 The Ministry of Infrastructure

The Ministry of Infrastructure is responsible for all land, air and maritime transport matters, including legislation, planning, development and operation of infrastructure, transport safety and security. It is responsible for telecommunications, digital communication, cyber 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. 80/2022 on Aviation, the Aviation Act, authority is delegated from the Ministry of Infrastructure to the Icelandic Transport Authority (ICETRA) where ICETRA participates in the development and revising of 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 Infrastructure which has the responsibility of issuing 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), an administrative institution for transport affairs, No. 119/2012,* with subsequent amendments, defines the ICETRA as a 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 affairs.

It should be noted that the role of ICETRA is only of a regulatory and surveillance nature, but it has not the role of a service provider. ICETRA's decisions may be appealed to the Ministry of Infrastructure 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 the framework for the Icelandic Safety Investigation Authority Transportation Safety Board (ITSBSIA-Iceland). SIA-Iceland the ITSB is an autonomous, independent organisation that conducts its investigations independently of other investigating parties, prosecuting authorities and courts.

The investigation institute is led by a director appointed by the Ministry of Infrastructure. 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 approving investigation reports before being published.

3 SAFETY POLICY AND OBJECTIVES

3.1 Primary aviation legislation

- The Act on the Icelandic Transport Authority (ICETRA), an administrative institution for transport affairs, No. 119/2012 ("the Act on ICETRA")
- The Aviation Act No. 80/2022.
- Regulations in the field of aviation
    - National and EU regulations
        - Commercial Air Transport by Aeroplanes
        - Air Navigation Services (ANS) / Air Traffic Management (ATM)
        - Initial and continuing airworthiness
        - Aircrew
        - Air Operations
        - Customer rights
        - Aerodromes
    - Domestic regulations/rules
    - EASA guidance material

The Ministry of Infrastructure oversees the issuing of all regulations according to the Aviation 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 continuously published in the official journal "Stjornartidindi" to enter into force.

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 regarding the 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 guidance material
- That the aviation system efficiently meets the requirements of international audits

Safety is a shared responsibility.

ICETRA commits to maintaining sufficient resources, expertise, and staff required for aviation safety duties.

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

ICETRA carries out an impact assessment of new EU regulations, and the Ministry of Infrastructure 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/authorised entities in accordance with this State Safety Programme, as well as based on the legal framework in the field of aviation. An entity must demonstrate that it continuously fulfils all the conditions for the authorization/privileges it holds; otherwise, those privileges cannot be exercised. Approved/authorised entity must devise a corrective action plan and sometimes immediate remedies as otherwise, it would have to cease its activities.

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

Procedures for audits, inspections and corrective actions are part of ICETRA´s Quality Assurance System.

3.4 Occurrence reporting regulations

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

- Regulation (EU) No 376/2014 on the reporting, analysis and follow-up of occurrences in civil aviation.
- Regulation (EU) 2021/2082 implementing rules for the common European risk classification scheme
- Regulation (EU) 2015/1018 implementing rules laying down a list classifying occurrences in civil aviation to be mandatorily reported
- 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

ICETRA has defined ECCAIRS2 as the national database which is a set of tools to capture, store and analyse accident/incident/occurrence data based on ICAO taxonomies.

Regulation (EU) No 376/2014 on occurrence reporting in civil aviation obliges Member States 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 hazards, assess risks and required mitigation to maintain acceptable levels of safety. To ensure continuous monitoring of safety 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, also in 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. 2017/373, 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 airport operators' regulation 464/2007 applies where SMS is required for airports 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 EU 965/2012 was then implemented in Iceland in April 2014.

6. For maintenance organisations, the SMS was implemented for CAMO in 2022 by amendment (EU) 2019/1383 to Regulation (EU) 1321/2014. For maintenance organisation the SMS was implemented 2024.

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

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

4.2 Authority requirements for management system

Authorities must have a management system that includes a documented policy and procedures that describe their organisation as well as the tools and procedures available. The authority must also have an adequate number of qualified staff and 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 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.

4.3 Acceptable level of safety

An important part of the Aviation Safety Programme is defining an acceptable level of safety through safety performance targets (SPT) and safety performance indicators (SPI). Safety performance targets indicate the minimum level 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 essential 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 SPIs defined by ICETRA are well-known ICAO and EASA indicators. Annex 2 lists the SPIs and the associated targets for different sectors.

The primary purpose of defining indicators is to develop systematic and continuous monitoring methods. 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 help the authority target its activities in a risk-based manner and help air operators 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” (EC 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 consider 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 safety management process of the ICETRA; and on national targets and tasks specified in the EASA European Aviation Safety Plan.

The 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 the European level, including measures specified to improve safety.

5 SAFETY ASSURANCE

5.1 Safety oversight

Safety oversight refers to the processes, systems and actions taken to ensure that safety protocols, regulations and standards are followed. It is a function performed by ICETRA (ICETRA) to ensure that individuals and organisations performing an aviation activity comply with safety related national laws, standards and regulations. ICETRA These processes are based on the legal framework in the field of aviation, ICAO standards, EU and national regulations established for each domain.

Based on the assessment carried out during the approval and licensing process, ICETRAICETRA either approves or rejects applications and can also request further information, set additional requirements or limit the intended scope of the approval. ICETRAICETRA also verifies that organisations and individuals meet relevant qualification requirements based on inspections and audits as applicable.

The inspection and auditing processes for safety oversight involves systematic assessments to ensure compliance with safety regulations, identify risks and improve operational safety. Organisations are generally audited in accordance with an annual oversight plan. In addition, operations are monitored through enroute inspections and training inspections.

The oversight plan is a structured approach for monitoring, evaluating and improving safety, regulatory compliance and operational effectiveness within an organisation. the organisations, areas, or units to be audited in more detail. Audits and inspections are carried out by inspectors qualified for the intended scope of audit and/or inspection Upon completion of the audit, the organisation receives an audit report, a finding(s) report, if applicable, describing the conclusion of the audit/inspection. After receiving a notification of findings, the organisation must identify the root cause(s), and contributing factor(s) to the noncompliance, define and propose a corrective action plan (PCAP) and demonstrate the implementation of corrective action (CA) to ICETRA satisfaction. ICETRAICETRA assesses the PCAP and CA, and either rejects or approves them. In some instances, ICETRA requests further clarification before deciding.

To ensure the quality of ICETRAICETRA's activity, ICETRA has established internal management system with structured approach focused on compliance, continuous improvement, accountability and adherence to best practices ICETRA conducts internal audits as part of the management system. Internal audits should ensure that ICETRAICETRA complies with the processes and operational guidelines described in its system. Internal audits are carried out by the internal audit process based on an annual audit plan.

ICETRA is subject to external audits. EASA, ESA and ICAO monitor national authorities through individual inspections performed for each domain as well as standardisation audits of the management system. As part of the USOAP work, ICAO audited the Icelandic aviation system in 2010 and 2021.

5.2 Safety data collection, analysis and exchange

ICETRA collects safety information through various sources through mandatory and voluntary occurrence reports. Occurrence reports shall be filed to ICETRA by organisations, individuals or anyone performing flight safety-related duties. This applies to any accident, serious incident or other occurrence that compromises, or without intervention would compromise, the safety of an aircraft, its occupants or any other persons. Accidents and serious incidents must be reported to the Icelandic Transportation Safety Board (ITSB) immediately.

A voluntary report can also be submitted anonymously. Anyone who becomes aware of an issue affecting flight safety but that is not obliged to be reported, may submit a voluntary report.

Reports to ICETRA shall be made on forms approved by the authority. Suppose the task of filing reports to ICETRA has been assigned to a certain entity within the air operator's organisation. In that case, the operator shall employ a system to ensure the obligation to report is fulfilled.

In cases of accidents, serious incidents and air traffic incidents the Safety Investigation Authority (SIA-Iceland) will decide to initiate an investigation in accordance with the ICAO Annex 13. Reports to the SIA-Iceland are be made on forms approved by SIA-ICELAND, and a copy of the report must be sent to ICETRA without the forms appendix.

ICETRA stores the occurrence reports received without identifying information in the European Coordination Centre for Accident and Incident Reporting Systems (ECCAIRS2) database. Through ECCAIRS2, 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.

ICETRA stores the occurrence reports received without identifying information with the aid of the ECCAIRS2. Through ECCAIRS2, 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 conclusions, analyses of FDM data, information from safety management systems of aviation organisations, accident investigation reports, findings on observation flights, ramp inspection findings and other national and international information sources.

ICETRA 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

significant trends that affect safety, factors contributing to the incidents, and the effectiveness of safety barriers. The information analysed is also used to monitor the status of safety performance indicators and define corrective actions if necessary.

5.3 Safety data-driven targeting of oversight

The safety information data collected, and the results of analyses are used for risk-based oversight targeting. Actions can, for example, be an increase in the number of inspections or audits, emphasising certain areas. Risk-based criteria in oversight planning and implementation are considered in the oversight processes and work instructions of ICETRA.

To support an inspection or audit of an organisation or a unit, the safety analysis department of ICETRA may assist by making an analysis based on safety information concerning the organisation or unit to be inspected. This helps to identify risk areas and factors that should be considered in the audit or inspection.

The safety planning process employs both a 'bottom-up' model, using the considerable expertise in the organisation to identify potential risks, and a 'top-down' process, starting with the significant 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 ICETRA 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. 237/2014 to inspect any aircraft suspected of noncompliance, perform spot checks, and 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 noncompliance 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.

6 SAFETY PROMOTION

6.1 Internal training and dissemination of safety information

The Icelandic Transport Authority (ICETRA) emphasises on employing highly qualified people, preferably those in need of minimal training in the beginning of their work career at ICETRA. After the selection process, the newly recruited employee goes through on-the-job training given by his/her head of section.

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, such as 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. Evidence of courses taken be kept in these registers.

Within ICETRA, there are many channels through which safety information can be communicated. At least every three months, an internal Aviation Safety Monitoring Group (ASMG) meeting deals with safety information. It comprises managers and staff from operational areas. Twice a year, there is an Aviation Safety Review Board (ASRB) meeting, which 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 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 organisations and individuals on, for example, changes in national and international regulations and guidelines. Regular meetings are held with representatives of companies and organisations in the industry. In addition, ICETRA employees answer questions personally through emails and phone as well as information posted on the website www.ICETRA.is. The ICETRA website is used to establish necessary information, safety-related events, educational content as well as information on national and international law. ICETRA holds several aviation safety meetings, promoting aviation safety on Facebook, Instagram as well as www.alltumflug.is

ICETRA aims to hold regular briefings with the aviation industry, where a summary of aviation occurrences will be given. In that way, educational and promotional activities will be prioritised per the 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) 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 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 and performance-based approaches. It is no longer possible to assume that regulatory compliance alone will produce safety improvements. A more pro-active proactive, 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 act, 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, 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 must be considered. The ALoS will

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

ICAO states, ' 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 be reviewed periodically to ensure they remain relevant and appropriate to the service providers.

Defining an Acceptable Level of Safety

Although ICAO provides extensive guidance on the concept of ALoS; some doubts remain about what constitutes one and how States should establish one.

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 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 recognise the aim of establishing an SSP and SMS to develop a performance-based regulatory approach. This second view recognises 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 system's safety performance is the outcome of a complex mixture of factors.

The ICETRA supports the second view. In addition to traditional safety performance indicators (for example, the number of runway incursions per 100,000 movements), safety performance indicators will need to be developed with 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, do not show continuous improvement in all areas. The public expects safety to progressively improve within reasonable economic constraints and within a reasonable timescale. This is reflected in the ICAA's commitment to continuous safety improvement.

In view of its importance for service providers and for common interpretation within Europe, it is recommended that the regulators and service providers dialogue 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). This makes it evident that the SSP and SMS are a means to improve safety over and above those resulting from a compliance-based regulatory approach.

Iceland's Safety Indicators

The ICETRA 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 traffic growth.

The SPIs are coherent 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 result of the safety level visible to the public. The exact first-tier indicators are monitored in Iceland, at the EU level and globally.

- *TIER 2* (Precursor indicators) measures the system's functionality and focus on specific crucial issues. These issues have been identified as the most common or serious accident types, also at the global level, and, therefore, require monitoring and safety enhancement measures. The incident types have been defined in accordance with 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 on 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 defined targets. Safety performance targets have been defined for training organisations, air operators, maintenance organisations, aircraft design and manufacturing organisations, 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 – SPIs

The following (first-tier) SPIs 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 CAT operations.
- Rate of accidents and serious incidents in CAT operations
- Number of accidents in helicopter operations
- Number of fatalities in General Aviation operations
- Number of accidents and serious incidents

The rate of accidents and incidents for CAT operations shall be based on a rate per 10.000 flights.

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 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 the 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 NAT SPG recently established the Safety Key Performance Indicators (KPIs) for the ICAO NAT Region. 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).