

SIG Aviation

Assessing and evaluating the maturity of safety culture in an Operational Environment

Contract: EASA.2019.CEI.14EC023

Revision: 1.0/Final

Date: 14 November 2023







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Document title: Assessing and evaluating the maturity of safety culture in an Operational Environment Document short title: EASA.2019.CEI.14.EC023 Revision: 1.0/Final Date: 14 November 2023 Author(s): W.S. Starreveld

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Executive Summary

Task definition

This report is the product of contract EASA.2019.CEI.14.EC023. This contract specified the development of a tool based on the most appropriate technological means and existing documented literature, for the assessment of a Safety Culture in an (operational) organisation.

Description of work performed

Under the terms of reference, initially a literature review was performed to ensure that the tool would be aligned with existing regulatory frameworks and industry standard. The results of this review are included in this report as appendix A3 - Background information, and incorporated throughout the developed method.

Based on meetings with EASA staff, an early decision was made to use a technology that would make the tool easily accessible and usable free of charge for tool users. The tool users were identified as regulatory staff involved in the continued oversight process, or organizations that want to use the tool as part of their internal safety management function. Based on these criteria, a decision was made to develop the tool using MS Office products.

The tool framework was specifically developed for this project, and is based on the fundamental principle that all organisational layers should be included when measuring something intangible as safety culture. The tool is still usable when organisational layers are excluded, however the results will then only display the existing safety culture for the layer(s) included. The assessment method was developed as a two-step process that aims that both assessor and assessed develop a shared and combined understanding on the safety culture's maturity level throughout the entire (operational) organisation. For this purpose, a colour coded matrix is used to identify hotspots of interest.

Together with EASA staff, the methodology was validated with a working group consisting of safety experts from regulators and industry. A total of 4 operational organizations participated in a trial period. Three of these organisations are considered to be large scheduled operators, the smaller organisation is involved in unscheduled commercial air operations. One of the large air operators is certified using a non-EASA standard. The other three operators all have an EASA based certification.

Results and Conclusions

The result of the contract is an assessment method that uses surveying, analysing and validation tools. The methodology developed is intended for organizations issued with an AOC, but can easily be expanded or adapted to include other EASA domains.

The method is developed with the intent that recognition can be given for positive elements in the safety culture. Negative elements in the safety culture for various organisational layers can be identified with the tool. By using the validation method, the results of this identification should be a shared and combined opinion between tool user and assessed organisation on facilitators and obstacles affecting the safety culture for that element.

The method uses tailored questions, correlated with the specific responsibilities that exist in the various layers of an operational organisation. The aim of the method is to assess positive and negative markers over the various dimensions of a safety culture. Based on the assessment outcome and identified hotspots, the tool includes a validation process to substantiate subjective information in a follow-up process. It is expected that the methodology, like any new technology, will be subjected to an improvement cycle based on operational experience with the tool.



The system is developed in such way that the survey questions can easily be updated. It is recommended to use the trial feedback for this purpose.

The method to include operational complexity in the assessment is new, but logical. Using subcontracted activities in the method, is intended to ensure that organisational responsibilities are taken into consideration. The criteria used for this might need additional fine tuning using quantifiable safety data that is not available in the public domain.

To promote industry acceptance, the method was branded (in this project) as SMART – Safety culture Measuring, Assessing and Rating Tool. Whether or not to keep this branding is an EASA decision.

The project is delivered as a key-turn project, meaning that this report contains a user guide and supporting material in its appendices and is ready for operational use. Nevertheless, some technical assistance might be needed in the initial phase after delivery of the tool. Although the project is considered closed, the developer of the methodology expresses a sincere interest and willingness to continue further assisting EASA on this topic.



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1 Introduction

Aviation authorities can only regulate safety to a certain extent, and even organizations that are fully 'in compliance' with regulatory frameworks are not necessarily the safest. At one moment, ensuring safety is no longer only about regulatory compliance but more about how the people that are part of the organisation recognize and act on events that might have an effect on safety. This is considered to be the organisation's safety culture. This study aims to create a method to measure the presence and level of this safety culture in an air operations organisation.

1.1 What is safety culture?

Whether an organization realizes it or not, it will have a number of different "safety cultures" that reflect group-level attitudes and behaviours. No two organizations are identical, and even within the same organization, different groups inside that organisation may have various ways of thinking about safety, talking about safety and acting on safety issues.

Having these different safety cultures is the natural consequence of having humans in the aviation system. It is an expression of how safety is perceived, valued and prioritized by management and staff, based on a variety of social conventions, knowledges and commitments.

"The safety culture determines how people behave in relation to safety and risk when no one is watching"

Safety culture is the way in which safety is perceived, valued and prioritised within an organisation. It reflects the real commitment to safety at all levels of the organisation. In short, it is the set of values, behaviours and attitudes relating to safety matters, which are shared by the entire human group that is part of the organisation, from the executive management to the front line operators. This is not something that can be imposed easily for regulators, as it also includes the behaviour we adopt when nobody is watching.

Measuring the presence and scope of safety culture in an organization is challenging as it involves assessing intangible aspects such as values, beliefs, and attitudes. It is important to bear in mind that destroying it is much easier and faster than building it.

Without doubt a culture of safety can only materialize and foster when management is truly committed: it that sense it is a product directly related to the efforts of management. Traditionally, there are regulatory elements that address this management commitment such as requirements for a policy and management system for safety. In most organizations however these elements are defined by an operational compliance function. This can result in a detachment between documented policies describing these safety elements and the perception of undocumented organisational goals that affect the actual safety culture in the organisation.



While regulatory compliance is one of the key pillars of safety, in order to improve its development, organisations need to share a number of fundamental values that guide the conduct of their staff beyond mere compliance with regulations and procedures. It is the existence of these values, and the perception on how 'common' they are lived in the organisation that defines the safety culture.

1.2 Relationship between Safety Management and Safety Culture

Air Operations organisations are socio-technical systems, made up of people and technology. Therefore, the safety management systems for such organizations will need to include the performance of these two main components: the human element and technology side. For this reason, safety management can only be truly effective when combined with an appropriate safety culture.

The Safety Management System (SMS) is the chosen regulatory tool for organisations to equip themselves with capabilities related to safety assurance. Such tools fall in categories such as 'information acquisition' (data capture and processing systems), 'analysis to prevent undesired events' (risk management processes) and for the implementation of mitigating measures (allocation of responsibilities, accountability and decision-making processes).

The progressive implementation of SMS has shown the importance of developing safety culture in parallel within the organisation. In this context, SMS and Safety Culture are mutually dependent elements. On the one hand, SMS embodies the substantive competence to achieve the organisation's safety objectives while the Safety Culture represents the commitment of its staff to achieve them.



Figure 1.2-1 Safety Culture

1.3 Introduction to SMART

SMART is an acronym of Safety culture Measuring, Assessing and Rating Tool. The method is the product of an EASA task to develop a tool to assess the safety culture throughout an organization. The terms of reference of this task already identified that the safety culture of an organization is defined as the way safety is perceived, valued and prioritized in an organization.

The requirements and responsibilities to establish a Safety Management System are, from regulatory perspective, attributed to certified organisations. One of main promotors in the SMS philosophy is the nurturing and fostering of a positive safety culture. It is this concept of safety culture that is used and promoted throughout EU Regulations, such as Air Operations. The challenge, for both regulator and organization, is the fact that safety culture is a derived product that cannot be regulated or enforced through requirements and regulations.



In the regulatory oversight cycle, the main contacts between Civil Aviation Authority, or equivalent, and the organization under supervision are usually at management and/or executive level. When considering the Safety Culture of an organization however, all levels in that organization play a significant role in how this culture actually functions, is nourished and produces something intangible as 'safety'. Although being essential and integral to establish safety, it is not only the management and executive levels of the organisation that should be considered. It is the real commitment to safety **at all levels** within an organization that displays a functioning positive safety culture. In the higher levels of an organisation, the safety intelligence resides whilst in the operational level a safety mindfulness must exist to create an actual safety level.

High-reliability organizations push decision making on safety down to a level where the actual expertise on how to work safely actually lies within that organization. Often that does not correspond with the executive decision-making level. Managing safety in an organization can be described a symbiosis between leaders who empower their staff, and experts who try to reconcile multiple conflicting safety goals simultaneously. For these reasons, any safety assessment within an organization is very complex and cannot be performed as a simple "tick-box exercise". In addition, it may lead to subjective outcomes as cultural differences may have an impact on its implementation and assessment.

The goal was to create a tool that can easily be transferred throughout the industry, and embraces the entire complex habitat of commercial air operations, including subcontracted activities. For this purpose, the SMART method uses a generic organizational model to describe organizational layers that exist in the majority of every air transport organization, either small or large. In the tool, these layers are described as 'roots'. This term is chosen intentionally, and elaborated in chapter 2.3 on Organisational layers.

A safety culture refers to the values, beliefs, and attitudes that are shared by an organization's members on how to create safety whilst achieving the other organizational goals. There are several elements of a safety culture that are essential for creating a safe environment. Each of these elements are grouped in SMART into 'dimensions' that are further elaborated in chapter 2.4 on Defining safety in dimensions.

These roots and dimensions can be considered to be a matrix, and visualized as a three-dimensional object that both represents the organisations' structure, and the safety elements that would represent a safety culture throughout that entire organisation.



Figure 1.3-1 Different applications of safety for different organisational layers



1.3.1 Common elements identified in safety culture

The table below provides a summary of some of the common elements related to safety culture that were identified during this project. The research information included as appendix A3 - Background information to this report was used to compose this table. The table was used to model the tool, and determine what elements should be included.

Safety Culture elements	Indicators of a positive safety culture
Commitment	For all levels of the organisation, all staff is encouraged to partake and voice their concerns, including subcontracted staff in an operational capacity. Management adjusts allocation of resources to match production. Management engagement is visible and recognizable. Responsibilities are assigned and defined. Safety values are defined and understood
Communication and Promotion	Active and open, unhindered flow of information between staff is promoted. Communication aims to address decision making, awareness, feedback and learning. Communication between management and safety department is continuous, active and a two- way process. Communication is coherent and perceived as credible for all levels of the organisation. Communication on safety is defined, structured, timely and with relevant information. Mitigating measures are shared and promoted as such to allow staff to understand their purpose. Organisational errors are openly addressed
Investigations	Are independently performed from the line organisation. Follow a pre-defined protocol/process that is available for staff. Include expert opinions from different professional profiles and organisational levels. Include a review of organisational responsibilities and failures when human error is identified. Include events occurring at subcontracted levels.
Reporting	Open and transparent process. Accessible and easy to use for all staff (including subcontracted staff in an operational capacity). Feedback/acknowledgement is sent to reporter. High reporting rates for events. Reporting is independent from the line organisation. No fear for reprisal felt by reporters. Staff reports their own personal errors, including management.
Learning and Training	Access to safety information is available for all staff. Demonstrates the reporting system. Emphasizes the just culture principles. Importance of continuous improvement is emphasized. Includes appreciation for staff input. Includes management of changed principles to ensure management and staff are able to recognize changing conditions. Relates to staff responsibilities and understanding of individual roles. Training is based on lessons learned from events and includes information from safety communications and investigations.
Documented Procedures	Procedures are designed to function without having to be breached. Include a pre-defined model to ensure safety and reporting during procedural breaches. Improve regularly and reduce work-arounds. Are suitable for subcontracted activities
Just culture	Documented safeguarding of reporter through procedures and protocols. Clarity on purpose of reporting. Define acceptable and unacceptable behaviour. Focus on taking responsibility and appreciating people for this.
Risk Awareness	Based on a correct hazard identification process. Based on actual risk knowledge for operational staff and management. Describes and learns desired staff attitude towards unknown risk. Includes a pre-defined model for risk taking and responsibilities in this. Monitoring elements are in place (SKPI, etc.). National culture is factored in.
Management of operational staff	Based on defined roles and clear responsibilities that are understood by operational staff. Single channel of communication exists for operational staff. Trained to ensure required qualifications exist. Focus on understanding individual responsibility.
Organisational Management	Change management is implemented and exercised. Different professional profiles are active in change management (procedures, organisation). Staff resource management is exercised to ensure sufficient knowledgeable trained staff is present for the production. Participation in safety related activities is open for staff.

Table 1.3-1 Safety Culture elements and indicators

Due to the extensive interactions between the identified elements and their indicators cross-overs between safety culture elements exist.



2 SMART methodology

2.1 Description of tool

The SMART tool consists of two main elements:

- 1) A surveying method, that produces a visual representation of the survey results in a dashboard, covered in chapter 3 Description of SMART Dashboard; and
- 2) A verification tool, that suggest the tool user towards an area of interest identified in the dashboard for follow up, covered in chapter 4 Validation of dashboard.

The tool is explicitly not intended to generate 'findings' on the safety culture of an organisation. It is designed in a way to facilitate an open discussion between regulatory body, or tool user, and the probed organisational to determine the existence of safety culture and it's development in the organisation. The aim is to identify where possible challenges exist that could restrict further development of a positive safety culture. The end result should be a shared opinion on the actual safety culture of the probed organisation.

"Safety culture is fragile, and should be treated like this in all efforts to quantify and improve it"

2.2 Tool requirements

The main objectives of the tool were determined to be:

- 1) Usable to assess both larger and smaller organizational sizes;
- 2) Not require specific software, neither at CAA or organisational level; and
- 3) Should be usable on the basis of a user manual without additional training for staff knowledgeable on safety management fundamentals.

As Microsoft products are used by the majority of organizations, using existing tools within this product family were considered to meet the main objectives.

Microsoft Forms is part of the Microsoft 365 suite and integrates with other Microsoft apps, such as Excel and Teams. Forms is a web-based application and can be used on any office compatible device. The system is able to conduct an in-depth survey with up to 5.000 responses. Survey data can be exported, and removed from the Microsoft cloud environment for further analysis.

Microsoft Forms has advantages and disadvantages that were considered in the development of the tool.

Advantages

- 1) Easy-to-use interface: Microsoft Forms has an intuitive and user-friendly interface that requires no technical knowledge or programming skills.
- 2) Integration with other Microsoft apps: Microsoft Forms integrates with other Microsoft apps, such as Excel and Teams, allowing users to easily sync and analyse their data.
- 3) Shareability: Microsoft Forms allows users to share their forms with external users, making it easy to collect feedback from a wider audience.

Disadvantages

1) Limited functionality: Microsoft Forms may not be suitable for complex surveys or forms that require advanced question types or data analysis.



- 2) Safety concerns: As a cloud-based tool, Microsoft Forms may pose safety risks to sensitive data, and users should ensure that their data is encrypted and secure.
- 3) Internet-dependent: Microsoft Forms requires an internet connection to use, which may not be ideal for users with slow or unreliable internet connections.
- 4) No offline access: Users cannot access Microsoft Forms offline, which may limit its functionality for users who need to collect data in remote or offline areas.

To cover the above disadvantages, the tool uses the online surveying options and an offline MS Excel data analysis. The workflow to move data from MS Forms to MS Excel is covered in appendix A1 - SMART user guide. Even for users with a limited IT knowledge this operation is not considered to be particular difficult when following the guidance material.

Regarding security concerns, the decision was made to have the survey and data analysis performed on the users own Microsoft suite environment. For this purpose the designed survey form can be moved across different organisations. Using a dedicated survey (online) and MS Excel (offline) ensures integrity and security of data. It prevents that surveyed information from one probed organisation can be mistaken for another.

Once the survey is completed, there is no requirement to continue storing the surveying data in an online environment. Organizations that have concerns regarding online security can extract the data and store it in their trusted digital environment. By closely monitoring the survey process, the data will be stored online for a short time window and deleted after downloading.



2.3 Organisational layers

For an organization conducting commercial air transport, the SMART method distinguishes five different organisational layers that play a critical part in creating and maintaining a safe culture:

- 1) An executive layer;
- 2) A middle management layer, including a safety management layer;
- 3) An operational layer divided into:
 - a. Staff working in the organizations' operation (OPS); and
 - b. Staff working onboard aircraft (Aircrew).

In the SMART methodology the organisational layers are referred to as 'safety roots'. The reference to a root is made in analogy to a natural root system. Like a tree in nature, a safety culture can grow through the support and energy it receives through its root system.



Figure 2.3-1 Well developed Safety Roots produce a healthy (safety) cover

When the root system is healthy and well formed, it will provide support during adverse conditions. When only one side of the root system is functioning as intended, it is likely that the entire tree as a whole would suffer from this imbalance. It is impossible to determine through what individual root exactly the systems functions, but it is rather the combined effect of all roots that produce growth.

2.3.1 Executive level

The executive level in an organization refers to the highest-ranking individuals responsible for making strategic decisions and overseeing the overall operations of the organisation. Executives play a crucial role in defining the organization's vision, mission, and long-term goals, as well as ensuring that the company is moving in the right direction.

In an Air Operations environment, the executive level typically includes the following key positions:

- Accountable Manager;
- CAMO Manager;
- Chief Financial Officer;
- Chief Human Resources Officer;
- Compliance and Safety Manager;
- Nominated Person Crew Training;
- Nominated Person Flight Operations; and



• Nominated Person Ground Operations.

It is this level in the organisation where the safety intelligence resides. The decisions made at executive level have a consequence downstream. It is the level where is decided which organisational risks are acceptable, not only from a business perspective but also from a safety perspective.

2.3.2 Middle Management level

The middle management levels exist to bridge the gap between the top-level executives and the front-line operational staff. These managers are responsible for overseeing specific departments or functions within the organization and play a crucial role in ensuring the smooth and efficient operation of the airline or aviation company.

Examples of middle management levels in aviation include:

- Head of Operational Control Centre;
- Head of Flight Operations Engineering;
- Head of Cabin Services;
- Head of Ground Operations;
- Crew rostering manager;
- Cargo Operations manager; and
- Fleet planning manager.

It is this organisational layer where the safety intelligence from the executive level is translated into a safety mindfulness. It is this safety mindfulness that translates organisational goals in terms of operational requirements to ensure that the safety goals of the organisation can be maintained or exceeded.

2.3.2.1 Safety Management Level

The safety management level refers to the organisational part where the comprehensive system and processes are placed to proactively identify, manage, and mitigate safety risks within the organisation. The staff that works in the safety management level of an organization in aviation includes individuals who are responsible for overseeing, implementing, and managing the safety management system (SMS) and related safety activities.

Some of the key staff that work in the safety management level in aviation are:

- Safety officers;
- Risk managers;
- Safety investigators;
- Safety trainers;
- Data analysts;
- Emergency response coordinators;
- Safety communication specialists;
- Safety auditors and inspectors; and
- Subject matter experts.

The safety management level is the typical level where the products and indicators related to a positive or negative safety culture can be made visible for the rest of the organisational levels.



2.3.3 Operational Level

The operational level of the organisation is divided into two groups. One group representing staff working on the ground classified as 'Operations Staff". The second group represents the staff working onboard aircraft during flight, and is classified as 'Aircrew'.

The operational level represents the front-line operators. It is at this level where the risk mitigation's function, where procedures intended to ensure safety are used and where decisions taken influence the real-time safety level of an organisation most.

2.3.3.1 Operations Staff

Staff working in air operations for an airline are responsible for the safe, efficient, and reliable operation of the airline's flights. Air operations encompass a wide range of functions and personnel working together to ensure the smooth execution of flights from planning to completion.

The staff functions in air operations are usually related to:

- Flight dispatching;
- Flight planning;
- Crew scheduling;
- Load planning;
- Flight operations engineering;
- Ramp operations; and
- Flight monitoring and tracking.

2.3.3.2 Aircrew

The aircrew refers to the group of individuals who operate the aircraft during flights. The aircrew is responsible for the safe and efficient operation of the aircraft, and they work collaboratively to ensure a smooth travel experience for passengers.

Overall, the aircrew's professionalism, skill, and coordination are critical to the success of each flight and the overall reputation of the airline in providing safe and reliable commercial air transport.

The generic key members of the aircrew in an airline include:

- Instruction/Supervision Pilots;
- Line Pilots;
- Flight Attendants; and
- Flight Engineers.



2.4 Defining safety in dimensions

According to various social scientists, a 'culture' consists of several complex dimensions that interact. A safety culture refers to the values, beliefs, and attitudes that are shared by an organization's members regarding safety in the workplace.

In terms of 'safety culture', a large number of individual elements can be identified that are essential for creating 'safety'. The existence, functioning and interaction between these individual elements will determine how safety is experienced and managed in the organisation.

In the SMART methodology, a decision was made to group these elements logically into six high-level dimensions. This grouping into safety dimensions provides a framework for analysis. Table 1.3-1 in chapter 1.3.1, based on the background information contained in appendix A3.2 on the Safety culture model was used to derive these safety dimensions. The extent to which these six dimensions are experienced throughout the entire organisation can determine to what level the existing culture can be described as positive towards safety.



Figure 2.4-1 - SMART safety dimensions



2.4.1 Awareness and behaviour

Awareness and behaviour on safety are crucial aspects of ensuring a safe and secure environment in any setting, including aviation. In the context of aviation safety, awareness refers to having a deep understanding of potential hazards, risks, and safety protocols, while behaviour pertains to the actions and decisions individuals take to maintain safety.

Safety awareness includes an emphasis on compliance with aviation regulations, standards, and best practices. This ensures that safety requirements set by regulatory authorities are complied with. Safety awareness involves identifying potential risks and hazards in aviation operations and implementing effective risk management strategies to mitigate these risks.

Recognizing human factors that may influence safety, such as fatigue, stress, and distractions, is essential.

2.4.2 Commitment and Engagement

Commitment and engagement in safety are critical elements for maintaining a strong safety culture in the organisation. When all individuals, from executive level to front-line employees, demonstrate a high level of commitment and engagement in safety, it creates an environment where safety becomes a core value and is integrated into all aspects of operations.

The executive and middle-management levels must demonstrate commitment to safety. They set the tone for the organization by prioritizing safety and allocating adequate resources to safety initiatives. Employees are empowered to take ownership of safety. They are held accountable for adhering to safety procedures and making safe decisions in their respective roles. It is essential that sincerity exists and is perceived likes this throughout the organisation.

The organization's commitment to safety is formalized through a clear and well-defined safety policy that is in line with how the organisation aims to function with respect to safety. This policy outlines the organization's commitment to safety as a fundamental value and sets specific safety objectives to achieve. The organizations commitment is demonstrated through investments in safety initiatives and non-mandatory programs, such as specific safety campaigns and fatigue risk management programs.

Addressing safety issues in regular staff meetings and open channels of communication allow employees to discuss these issues, share best practices, and receive updates on safety-related matters. The aim of to provide a platform for employees to actively participate in safety-related matters.

2.4.3 Effectiveness

An effective safety culture is a critical characteristic of any high-reliability organization. It refers to an environment where safety is deeply ingrained in the organization's values, beliefs, and behaviours at all levels. An effective safety culture prioritizes safety in such way that the number of unexpected safety events reduce over a period of time. It is characterized by the following key attributes:

- Open Communication: There is open and transparent communication about safety matters throughout the organization. Employees feel comfortable reporting safety concerns, incidents, and near-miss events without fear of reprisal.
- Non-Punitive Reporting: A non-punitive reporting culture is encouraged, where individuals are not blamed or penalized for reporting safety issues. Instead, the focus is on learning from events and making improvements.



- Safety Risk Management: A systematic approach to safety risk management is adopted, where potential hazards and risks are identified, analysed, and mitigated to ensure proactive safety management.
- Safety Performance Measurement: The organization regularly monitors safety performance through safety indicators and metrics. Data analysis is used to identify trends and areas for improvement.
- Integrated Safety Processes: Safety is integrated into all aspects of the organization's operations, from strategic planning to day-to-day activities. Safety considerations are part of decision-making at all levels.
- Strong Safety Reporting System: An effective safety reporting system is in place to capture safety-related data and facilitate analysis and action on safety issues.

2.4.4 **Promotion and Information**

Safety promotion and information dissemination are vital components of a comprehensive safety management system. They contribute to creating a strong safety culture, reducing the likelihood of accidents, and ensuring that lessons learned are communicated.

Dissemination of safety information help raise awareness of potential hazards and risks. By providing relevant safety information, individuals are better equipped to prevent accidents and incidents. Safety promotion encourages a proactive approach to risk management. Identifying and addressing safety concerns before they escalate, helps prevent incidents and disruptions.

Safety promotions keep safety at the forefront of employees' minds. This continuous reinforcement fosters a safetyconscious culture where safety is a priority for everyone. When employees are knowledgeable about safety procedures, they can respond effectively to potential threats and emergencies.

2.4.5 Identification and Reporting

The identification and reporting process serves as a foundation for a proactive safety management approach in aviation. It encourages transparency, accountability, and a commitment to safety. A robust reporting process promotes a safety reporting culture where employees feel encouraged to report safety concerns, incidents, and nearmiss events without fear of reprisal. A functioning reporting culture is vital for gathering valuable safety data.

The identification process helps in recognizing potential hazards and safety risks. Hazards can be related to aircraft, equipment, procedures, weather conditions, human factors, or other elements that may compromise safety. By identifying these hazards early, the organization can proactively manage and mitigate risks before they escalate into safety events. It supports the philosophy of continuous improvement, driving a cycle of identifying, analysing, and implementing safety enhancements.

2.4.6 Training and Knowledge

Staff training and knowledge are fundamental elements for establishing and nurturing a strong safety culture within an organization. They empower employees to prioritize safety, identify and manage risks, and maintain a proactive approach to safety management.

The executive and middle-management level represent part of the organisation where the safety intelligence resides. By receiving safety training, managers become safety leaders who actively promote and prioritize safety within the workplace. In the more operational levels of the organisation, the safety mindfulness resides. Safety mindfulness or safety conscious behaviour, refers to a state of heightened awareness and focus on safety in all aspects of one's work or activities. It involves being present in the moment, constantly alert to potential hazards and risks, and taking



proactive measures to ensure the safety of oneself and others. Training is required for both safety intelligence and safety mindfulness for staff to fully understand their roles and responsibilities.

This awareness fosters a safety-conscious mindset, where safety becomes a top priority for the entire organisation, from executive to operational level.

2.5 Surveying tool

The basic methodology of SMART is to assess the presence and functioning of each of the safety dimensions throughout the various organisational levels or safety roots. The result is a matrix that combines the roots and dimensions of safety.



Figure 2.5-1 – SMART Matrix

This assessment process is facilitated by using a surveying method. For each of the safety dimensions, specific statements applicable to the safety root have been developed. The response to these statements creates an insight on how that safety dimension is represented at that organisational level.

2.5.1 Likert questions

Likert questions are commonly used in surveys, research studies, and assessments to gather quantitative data about individuals' attitudes and opinions on various topics. They allow researchers to understand the distribution of responses and measure the strength and direction of respondents' views on a specific subject. The SMART survey uses a majority of Likert questions.

This question type measures respondents' attitudes, opinions, or perceptions on a particular topic using a rating scale. The Likert scale typically produces a score from 1 to 5. The response options on the Likert scale may include:

- Strongly Disagree
- Disagree
- Neutral or Undecided
- Agree
- Strongly Agree

The Likert questions asked in the survey are designed specifically to match each of the identified five organisational levels, or roots and address the six dimensions of safety culture. The questions were designed carefully to ensure that the statements are clear, unbiased, and cover all possible responses adequately. The complete set of questions is included in appendix A2.2 - SMART questions.



The Likert scale is an effective method for capturing valuable information and quantifying subjective opinions in a structured and easily interpretable format.

2.5.2 Integration of national cultural elements

The aviation industry is per definition internationally oriented. Staff employed in these organisations can be from a wide variety of different nationalities, particularly in larger companies. The national culture can significantly influence the safety culture within an organisation, particularly when the organisation is comprised of multiple nationalities.

The relationship between national and organizational culture is complex, and several key factors explain how one might impact the other.

Shared Values and Norms

National culture shapes the shared values and norms prevalent in society. These values and norms are often carried into the workplace by employees. For instance, if the executive level attributes importance on collectivism and harmony from a national cultural background, operational staff with a different cultural background may exhibit different traits.

Communication Styles

National culture influences communication patterns and preferences. This includes the level of directness, hierarchy in communication, and how emotions are expressed. The organisation needs to adopt a communication style that aligns with the national culture of the target group to ensure effective communication with staff and stakeholders.

Leadership and Management Practices

Leadership styles and management practices within a company can be influenced by the dominant leadership models formed by the cultural background of the executive and management level. For example, management from a culture with high power distance more likely adopts an authoritative leadership approach, and this style may permeate into the company's culture.

Organizational Hierarchy and Decision-Making

Cultural background can impact the degree of hierarchy and formality within organizations. Resulting in strong hierarchical cultures, more rigid organizational structures and centralized decision-making processes.

Attitudes Toward Change and Risk

National cultures vary in their attitude toward change and risk-taking. Staff can therefore have a different attitude towards risk-taking than perceived by management. This can influence the risk management model.

Motivation and Rewards

Cultural attitudes toward achievement, recognition, and rewards can impact how organisations design incentive systems and reward employees for their performance.

Ethical Standards

The ethical standards and norms are associated with the cultural background that exists in the organisation. Organizations will likely reflect and respond to these cultural norms in their ethical practices and corporate social responsibility initiatives.



Long-Term vs. Short-Term Orientation

The national culture's orientation toward long-term or short-term goals may influence the timeframes and priorities that companies adopt in their strategic planning and decision-making.

A well-documented framework, developed by a social psychologist¹, exists to understand and compare cultural differences between countries. This method uses six different cultural dimensions that represent different aspects of cultural values and behaviours.

- Power Distance (PDI): This dimension reflects the extent to which less powerful members of a society accept and expect unequal distribution of power. In high power distance cultures, there is a significant hierarchical gap between people, and authority figures are highly respected. In contrast, low power distance cultures tend to have more egalitarian and democratic structures, with lesser emphasis on hierarchical relationships.
- Individualism vs. Collectivism (IDV): This dimension describes the degree to which individuals in a society
 prioritize individual interests over group or collective interests. In individualistic cultures, people tend to
 focus on personal goals, autonomy, and self-expression. In collectivist cultures, individuals emphasize group
 harmony, loyalty, and cooperation, often putting the needs of the community or family ahead of their own.
- Masculinity vs. Femininity (MAS): This dimension refers to the distribution of emotional roles between genders in a society. In masculine cultures, there is a strong emphasis on assertiveness, ambition, and achievement, with a clear differentiation between male and female roles. In contrast, feminine cultures place more importance on nurturing, caring, and quality of life, with lesser emphasis on gender roles.
- Uncertainty Avoidance (UAI): Uncertainty avoidance measures the extent to which a society tolerates ambiguity, uncertainty, and risk. In high uncertainty avoidance cultures, people prefer clear rules, structured environments, and well-defined procedures to minimize uncertainty. Conversely, in low uncertainty avoidance cultures, people are more comfortable with ambiguity, change, and risk-taking.
- Long-Term Orientation vs. Short-Term Orientation (LTO): This dimension explores the extent to which a
 society values long-term planning, persistence, and perseverance versus short-term goals and immediate
 gratification. Societies with a long-term orientation tend to emphasize thrift, persistence, and adaptability
 to achieve future rewards, while short-term oriented cultures focus more on immediate results and
 traditions.
- Indulgence vs. Restraint (IND): This dimension reflects the degree to which a society allows gratification of basic human desires and impulses. Indulgent cultures tend to be more lenient and accepting of enjoying life and having fun, whereas restrained cultures exhibit stricter social norms and controls over gratification.

The SMART method identifies, through the national language of the respondent, to what cultural background that respondent likely belongs. For each of the respondents a score is calculated for each of the 6 cultural dimensions. The average score of all respondents within an organisational root would represent how each of the different cultural dimensions is represented for that part in the organisation.

The comparison of these scores between the different organisational levels can provide valuable insight and possible explain perceived behavioural patterns in the organisation.

¹ https://www.simplypsychology.org/hofstedes-cultural-dimensions-theory.html



2.5.3 Operational complexity questions

An understanding on the organisational complexity is important to evaluate the dashboard results, particularly for assessors that are not involved in the daily operation of the organisation.

For this purpose, a separate survey exists that is aimed to answer questions that allow to visualize on the dashboard:

- 1) The size of the organisation in terms of staff employed and aircraft operated;
- 2) The location of the homebase;
- 3) The type of operation conducted with these aircraft, the specific operational approvals granted for this purpose and the normal area of operation;
- 4) The subcontracted operational activities;
- 5) Information on the safety management system and it outputs; and
- 6) Participation in other safety related programs and industry standards.

Parts of the information requested in the operational complexity questions is intended to allow benchmarking between operators, or consecutive years for one particular operator.





3 Description of SMART Dashboard

The SMART dashboard is developed as a MS Excel application. For information on how to download the SMART dashboard, and insert the survey data refer to appendix A1.2 - Process and workflows.

The dashboard displays the visualisation of the survey results in three different tabs:

- 1) Organisational Overview
- 2) Safety Survey Dashboard
- 3) Safety Reporting Dashboard

3.1 Organisational Overview

The organisational overview is divided into different sections, each containing information from the operational complexity survey. This section is intended to scope the organisation's size and complexity for the person using the tool.

The information presented on the Organisational Overview is advisory information, and should not be interpreted strictly. The information is solely provided to create context for the reviewer, and guidance on where to focus during follow-up activities.

3.1.1 Size

¥	Aircraft Types	Total Aircraft 30	ORCANISATION Test Airlines 123	•	Home Base Netherlands	Language Dutch
	Operational Organisation	Executive	Middle Man.	Safety Staff	Operational	Aircrew
Total	171	6	18	17	40	90
Survey	5	1	1	1	1	1
%	3%	17%	6%	6%	3%	1%

Figure 3.1-1 Visualisation of organisational size

The top section contains the size of the organisation in terms of the total aircraft operated on the AOC, and the count of different² aircraft types. In general, the number of different aircraft types relates to the complexity of the organisation.

The language displayed relates to the language used in the organisational manuals. For most organizations, this language will be English. The survey participants are queried on their knowledge of the operational language directly and indirectly during the survey.

The home base of the organisation provides the national cultural baseline referred to in chapter 2.5.2 - Integration of national cultural elements.

The total number of operational staff is expressed in FTE, and is the sum of the five different organisational roots listed (executive, middle management, safety, operational or aircrew). This might not reflect the true actual

² Variants of the same aircraft type are counted as one



manpower of the probed organisation but is used to calculate a survey participation rate. This rate is provided for each root to indicate the sample size.

3.1.2 Complexity

A second section on the organisational overview contains the visualization of the complexity. At present, the area of operations specified on the granted Operations Specification is translated in a geographical area where events are most likely to occur. The basis for this visualisation is the statistical information provided in the IATA safety database on occurrence/incident locations.

It is known that this information might not be accurate, as the distribution of flights over these various different areas of operation is not taken into consideration. The information is included to facilitate further analysis and possible discussions downstream in the verification process described in chapter 4 - Validation of dashboard.



Figure 3.1-2 Visualisation of organisational complexity

The special approvals graph is used to indicate where, from a statistical point of view, events are most likely to occur in an organisation. In the current dashboard version, the method for deriving this event distribution corresponds to the EASA safety data annually published.

The information on subcontracted activities is used to indicate which typical operational processes are subcontracted. Subcontracting is a normal process foreseen in the regulations. However the retention of responsibility over these subcontracted processes requires typically more control elements. Particularly for operational processes, arrangements should exist to ensure that the safety related events occurring in the subcontracted activities are known. For this purpose more emphasis on the arrangements made with the subcontractor that relate to safety is to be expected.

With the subcontracting of operational processes, the process might drift out of scope for the safety management system, whilst the operator retains responsibility over the process. The overview of subcontracted processes is used



to assess the coverage of the safety management system. Organizations with a mature safety culture will want to include as many data points as possible into their management system.

3.1.3 Communication



Figure 3.1-3 Visualisation of staff language proficiency and cultural analysis

Communication is an integral part of safety management. The level of language proficiency in the organizational language is an indicator on how well the information in documents and manuals can be understood. Significant differences between organisational levels could indicate a higher likelihood for communication challenges. The graph provided here displays the result of a self-assessment question in the survey, but can be mirrored for organizations which use English in their documentation against a question that surveys the understanding on the survey.

By correlating the native language of a respondent to Hofstede's cultural analysis, an averaged score is calculated for each of the organizational levels. With these averaged scores it becomes possible to visualize the differences between the organizational levels on the typical categories that define national culture. As with the language proficiency, large differences highlight different on the topics described in chapter 2.5.2 - Integration of national cultural elements.

3.1.4 Experience

Staff experience plays an important part in various safety culture dimensions identified. In general, it can be expected that the experience expressed in years increases with the executive management displaying the highest experience.

When the SMART matrix, explained in chapter 3.2 - Safety Survey Dashboard, displays a hotspot, the professional experience level for that safety root could indicate a causal relation between the hotspot and experience level. In general, experience can be offset with an increased training level. This assessment is part of the verification method described in chapter 4 -



Validation of dashboard. Significant differences in staff experience for different organizational levels can indicate an unbalance between the safety roots concerned.



Figure 3.1-4 Visualisation of staff experience

3.1.5 Responses

The lower section on the Organisational Overview provides information on the quality of information that is included in the data analysis. The first chart relates to a self-evaluation question. For organizations that use the English language in their documents, this question can verify the language proficiency in the above section.

The second chart presents the suppressed response result data per safety root. The SMART dashboard contains a logic to exclude survey data that does not correlate with a normal survey response time from the dashboard.



Figure 3.1-5 Visualisation of survey appreciation and result suppression

3.2 Safety Survey Dashboard

The Safety Survey Dashboard is an interactive sheet and the heart of the tool. The top side of the dashboard is intended to easily visualize hotspots in the SMART matrix, and zoom into the survey results to further assess areas of interest. For this purpose, the sheet contains buttons to select a specific matrix combination.



	Awareness & Behaviour	Commitment & Engagement	Effectiveness	Promotion & Information	Identification & Reporting	Training & Knowledge	Grand Total
Exec	7,0	10,0	8,4	10,0	9,6	7,3	8,5
Middle	4,6	7,2	6,9	8,0	9,5	5,5	6,5
Safety	8,0	8,7	8,6	10,0	10,0	7,3	8,5
Ops	5,2	7,3	8,4	10,0	10,0	10,0	7,9
Aircrew	6,0	8,4	6,8	10,0	10,0	8,3	7,7
Grand Total	6,1	8,5	7,8	9,7	9,8	7,4	7,9



The top horizontal row of the SMART matrix represents the six safety dimensions identified. The vertical left column indicates the safety roots, or organisational layers surveyed. In the figure above the safety root 'middle management' scored lowest on the safety dimension 'awareness and behaviour' and highest on 'identification and reporting'.

The numbers presented in each cell are derived from the average score from the survey respondents. The number 0 denotes the lowest score, and is indicated in a red colour grade. The number 10,0 indicates the highest attenable score, and is indicated in a green colour grade.

The column and row labelled 'grand total' display the respective averages for either the safety root or safety dimension using the same colour convention.

Below the matrix an interactive section allows querying specific topics by selecting a matrix combination.





The control buttons above the chart (Root, Dimension, Question) select what elements from the matrix will be displayed in the chart with best and worst scoring responses.

The control buttons below the chart (Root and Dimension) create a specific focus by selecting a safety root, and safety dimension and displaying the highest and lowest scoring responses. This function allows the assessor to understand underlying factors of a low or high score in the matrix.



In the above figure, a selection is made (shaded grey action buttons) to display the underlying questions from the lowest scoring matrix. For this purpose the middle management is selected as safety root, and the 'awareness and behaviour' safety dimension is chosen.

The chart shows that the lowest scoring questions for this safety root are:

- 1. Anonymous reporting can be misused by disgruntled staff and should be discouraged;
- 2. The organisation expects that deadlines and flight schedules are met at all costs; and
- 3. Performance reviews of managers should be rated more positive when fewer safety events are reported in their unit.

The assessor can then use this information to further form an opinion on what this actually means for the safety culture of the organisation. For this example, the scoring on the first question might indicate a lack of training on the concepts and goals of the reporting system. Alternatively, it could for example indicate that the middle management itself have fear that safety reports might actually trigger a lower personal performance review. In this context the third worst scoring response is interesting, as it relates to a performance review. The assessment process is further explained in chapter 4 - Validation of dashboard.

Note that the SMART questions are designed in such a way that a negative answer can actually indicate a positive outcome. The questions are designed to ensure that a balance exists between negative and positive answers to ensure continued engagement during the survey. For example, in the question 'Performance reviews of managers should be rated more positive when fewer safety events are reported in their unit', a negative answer actually indicates a more accurate knowledge on the fundamentals of safety management. The argument being that organisations connecting lower reports to a higher performance review, incentivise non-reporting of events. So for this specific question to end up on the lowest scoring response side, actually indicates that the middle management believes their unit functions better when fewer events are reported.

The SMART matrix should not be interpreted as a finite answers. The system is designed to provide an assessor with information so that a focus can be created in the assessment of the safety culture.







The lower part on the Safety Survey Dashboard contains the averaged response score as per selection of the safety root and dimension. This information is relevant in the verification process.



3.3 Safety Reporting Dashboard

The Safety Reporting Dashboard contains information from the operational complexity questions that are related to safety management. The section is intended to provide guidance for the assessor on the basic functions of the safety management system.

Parts of the information requested in the operational complexity questions is intended to allow benchmarking on the safety management system inputs and outputs between operators, or consecutive years for one particular operator.

3.3.1 Safety Inspections and Audits



Figure 3.3-1 Visualisation of safety inspections and audits

Information on the number of scheduled and unscheduled audits, compared with the organisational size provides information on the size of the safety management system. The number of completed audits and inspections, as well as the identified number of corrective actions required over the last 12 months, provides the assessor with basic information on the functioning of the system.

As the SMART system is intended to be used by both large and small organizations, a deliberate decision was made to limit the requested information to cater for the majority of organisational sizes. In any case, assessors with a regulatory position are likely to receive more detailed and continuous information on the functioning of the Safety Management System.

3.3.2 Safety Events and Monitoring



Figure 3.3-2 Visualisation of safety events and monitoring

The Safety Events and Monitoring section contains more detailed information on the events and consequent actions.

The number of safety events reported in relation to the number of occurrences that are mandatory reportable provide indications on the organisational knowledge on actual safety related events.

Organizations where the ratio between safety events reported and MOR Scheme Occurrences is low will likely only have insight in the more serious safety events. They receive the 'tip of the iceberg' events that are more obvious and easier to see.



Organizations with a high ratio typically have a well-functioning voluntarily reporting system in place. More events are included in the safety database, as more events are being reported. As a consequence the safety department is able to understand where less critical reported events might cumulate into a more serious safety occurrence. This increases the pro-activeness of the safety management system and is the result of a safety culture where reporting is valued highly.

The number of Safety Performance Indicators (SPI) that are continuously monitored provides information on the number of probes used by the SMS to detect. In that sense it provides information on the ability of the safety department to provide early information on negative trends provided sufficient data enters into the system.

The number of Safety Review Board (SRB) meetings organized in the last 12 months provides information, together with the SPI's monitored, on the activity of this board in relation to reported events and trends monitored. This provides an indication on the possible response time of the safety management system to act on negative trends.

For larger organizations, the functions for compliance monitoring and safety management are usually covered by separate units. Smaller organizations typically integrate the compliance monitoring and the safety management functions in one department under the responsibility of one individual. The chosen organisational model provides information on the amount of manpower the organisation has attributed specifically to safety management. In addition, the chosen model is usually related to the organisational size. Although this knowledge does not provide any information on the quality of the processes related to safety management, it gives an indication of the desired safety culture that the organisation is pursuing.

3.3.3 Subcontractors



Figure 3.3-3 Visualisation of organisational complexity

The section on subcontractors provides information the subcontracted operational activities.

From safety culture point of view it is important to understand how these subcontracted activities interact with the internal safety management system. The most basic elements that indicate this are related to auditing/inspecting (compliance monitoring) and event reporting (safety management).

Subcontracting typically involves operational activities performed by frontline staff. This type of staff will be mostly confronted with safety related operational events in a last line of defence capacity. Ensuring that these safety events flow into the safety management system as input is highly valuable to increase the effectiveness of the system. A typical paradox might present related safety reporting by subcontractors and performance monitoring of those same subcontractors. Safety reporting by the subcontracted staff is a typical direct indicator of the organization's safety culture, and that of the subcontractor.

Some organizations provide access and stimulate safety reporting that includes the staff and activities that are subcontracted. Subcontractors might have a negative connotation on safety reports by their staff towards resulting



from a commercial interests. These reservations can negatively influence the practical participation of frontline workers employed by subcontractors.

3.3.4 Reporting

The second section on the Safety Reporting Dashboard provides information on how the reporting function and process is perceived by staff. This is considered a reliable indicator on the safety culture as experienced by the staff.



Figure 3.3-4 Visualisation of reporting system

The first chart displays the safety report input in function of the safety root. In a safety culture that is balanced, all safety roots would display involvement in the reporting. Participation rates in the organisational levels that are closer to operational activities should be highest.

Safety roots with a low participation rate in the reporting system could indicate simply a high barrier to report, and more deeper elements related to how the organisation is perceived. A low participation rate for frontline staff usually indicates that there are unknowns associated with the system, a lack of trust exists, or the expectancy that their reports likely will not change organisational habits.

For this purpose the Net Promotor Score (NPS) on the reporting process is included in the dashboard. Higher NPS scores indicate that the respondent is more likely to re-use the system, or provide positive feedback on its functioning towards colleagues. Lower scores indicate the opposite.





Figure 3.3-5 Visualisation of reporting obstacles

Acknowledging the reception of a safety report provides gratification to the reporter. As such positive feedback system towards safety reporters is essential to stimulate reporting rates. The lower charts on the Safety Reporting Dashboard provide information on the effectiveness of the reporting tool.

Higher feedback rates indicate a more pro-active safety culture that stimulates event reporting. Lower feedback rates are typical for organizations with a less mature safety culture.

In sequence the question "Did you experience a safety event" is posed after "Did you report as safety event". The purpose of this sequence is intended to provide information on hidden events in the organisation. Events that are experienced or witnessed but not reported can indicate system usability barriers, unawareness on how or what to report, complacency at the reporter or the feeling of repercussions to a report. In figure 3.3-5 above, the 50% of the staff experienced a safety event, but did not report this.



3.4 Maturity of safety culture dimensions

The survey results presented by the SMART matrix can be combined with a linear maturity level or safety culture ladder that are normally used in the context of Safety Management.

This method will rate the level of maturity for each of the safety dimensions across the organisation. Following descriptions for the different safety dimensions can be used when the tool user wants to quantify the maturity level in for the purpose of a report.

SMART Score	0 – 1,9	2,0 – 3,9	4,0 – 5,9	6,0 - 7,9	8,0 – 10,0
Maturity level	1. Pathological	2. Reactive	3. Calculative	4. Proactive	5. Generative
Awareness and Behaviour	No safety awareness. Unsafe behaviour is normal. Safety considerations do not affect behaviour. Unsafe behaviour in the benefit of other interests is rewarded.	Passive awareness. Unsafe behaviour is tolerated Safety considerations barely affect behaviour. Unsafe behaviour in the benefit of other interests is allowed.	Selective awareness. Behaviour is affected by safety considerations. Unsafe behaviour in the benefit of other interests is sometimes allowed, but in genera there is mutual expectation of safe behaviour.	Active awareness. Safe behaviour is normal. Safety considerations largely set behaviour. Unsafe behaviour is not tolerated.	Constant vigilance. There is a constant vigilance with respect to unidentified safety risks.
Commitment and Engagement	Safety is not taken seriously. Safety plays no role in decision making and day-to-day operations.	Safety is not a core value. Safety plays a role in decision making only to meet the legal requirements.	Safety is not a core value. Safety considerations are taken into account in decision making.	Safety is a core value. Safety plays an important role in decision making and day-to-day operations.	Safety is a core value. Safety is recognized as an essential for the continuity of the organisation.
Effectiveness and Promotion	No measure is taken against safety risks. Safety is no topic of communication.	No measure is taken against safety risks. Safety is only a topic of communication after severe safety occurrences.	Measures are taken if the safety risks are too large. Safety is only a topic of communication after safety occurrences.	Measures are taken to reduce known safety risks as much as possible. Safety is a regular topic of communication.	Measures are taken to reduce known safety risks as much as possible. Safety is a main topic of communication.
Information	Uninformed culture. The safety risks induced by the organisation's operation are not recognised or are ignored.	Circumstantial information exchange. The safety risks induced by the organisation's operation are recognised.	Bureaucratic information exchange. The safety risks induced by the organisation's operation are recognised.	Proactive information exchange. The safety risks induced by the organisation's operation are recognised.	Continuous information exchange. The safety risks induced by the organisation's operation are a main concern.
Identification and Reporting	There is no safety reporting system. No information on safety occurrences is gathered, let alone transmitted through the organisation.	There is no safety reporting system. Only information on safety occurrences is gathered. There is no feedback on safety occurrences.	A safety reporting system is installed because it is required by law. The safety reporting system is only used to gather information in the aftermath of safety occurrences. There is	The advantages of a safety reporting system are recognized. The safety reporting system is used to detect safety issues before it is too late. There is no feedback on safety reports.	The safety reporting system is considered as a main part of the organisation. The safety reporting system is continuously monitored to detect safety issues. Feedback on safety

Table 3.4-1 Maturity of safety dimensions



			no feedback on safety reports.		reports is part of the reporting system.
Training and Knowledge	Safety training is non- existent.	Safety training is rare. Only staff required by law is being trained.	Safety training is not part of normal procedures. Only specific staff is trained.	Safety training is part of normal procedures. All staff is being trained.	Safety training is extremely important. All staff is being trained.

3.5 Creating the dashboard

Compiling the SMART dashboard from the survey results is a technical process that is covered in appendix A1.2-Process and workflows.

The person responsible for assessing the safety culture is responsible for this process. After the SMART dashboard is created, it is recommended to remove the unprocessed survey results from the online environment.



4 Validation of dashboard

The three dashboards contain both objective and subjective information on the safety culture. It is essential to distinguish between these to ensure informed and unbiased opinions are formed. While objective evidence is valued for its reliability and impartiality, subjective evidence can provide insights into personal experiences and perspectives but may be less reliable and more influenced by individual factors. Both objective and subjective information are important in assessing safety culture.

Objective information

Objective information is based on observable, measurable, and verifiable facts or data. It is not influenced by personal feelings, interpretations, or biases. Objective evidence presents concrete, quantifiable information that can be independently confirmed or validated. It does not depend on an individual's personal perspective, emotions, or opinions. Objective information should yield the same results or conclusions when examined by different people.

Subjective Information

Subjective information is influenced by personal opinions, interpretations, emotions, or beliefs. It may not be easily verifiable or replicable by others. It relies on an individual's interpretation of events, experiences, or situations and can be influenced by the person's own biases, perspectives, and emotions, leading to potential variations in perception. Subjective information may vary from person to person due to differences in perception and interpretation.

Dashboard	Objective information	Subjective information
Organisational overview	 Aircraft types and numbers Home base Organisational language Organisational size Types of operation Staff experience Response suppression 	 Geographical area where events are likely Special approvals where events are likely Risk in subcontracted organizations Staff language proficiency Understanding of survey Cultural analysis
Safety Survey Dashboard		- SMART Matrix
Safety Reporting Dashboard	 Safety inspections and audits Safety events and monitoring Safety at subcontractors Safety events reported Number of safety events report 	 Safety reporting easiness Feedback on safety reports Safety reporting blockers

The persons verifying the SMART dashboard should have an accurate knowledge of, and practical experience in Safety Management to ensure that an unbiased opinion on the safety culture can be formed. Although the validation can be perceived as an audit or inspection, there are some key differences between the audit/inspection of a Safety Management System and the validation of a Safety Culture.

During the validation process, the following key principles should be embodied by the persons using the tool to prevent bias:

- 1) Maintain a neutral position during the entire validation process;
- 2) Use personal experience only as a guide to target areas of interest, not to differentiate between what is perceived as correct and incorrect;
- 3) Do not volunteer advice or an opinion on safety culture and safety management topics in the validated organisation;


- 4) Do not raise findings or observations but use the word 'opinion' to differentiate between the two different processes;
- 5) Formulate opinionated statements with the aim to contribute to an improvement for the safety culture; and
- 6) Reach consensus on the opinions stated with the probed organisation.

4.1 Validation process

The SMART system is intended to foster cooperation between both the tool user and the assessed organisation. For this purpose the goal of the validation process is to create a combined and shared opinion on the safety culture between the tool user and the assessed organisation, particularly for subjective information contained in the safety survey dashboard.

As a fundamental principle 'findings' on the safety culture should not be raised. Reason for this is the fact that a culture is not tangible or quantifiable in black and white terms such as 'correct' or 'incorrect'. Nevertheless, observations made during the validation process, can identify non-compliances with requirements. In such case the non-compliance should be brought forward to the compliance monitoring function of the organisation being assessed.



Figure 4.1-1 Validation process

During the validation process, both the tool user and the focal point in the assessed organisation use the validation actions to ascertain the results of the SMART dashboard. This process can either be combined or individually completed. The tool is not intended to develop an opinion on the safety culture supported by one side only. The end result of the validation process is a shared opinion between the tool user and assessed organisation.



4.1.1 Validation steps

The validation process starts after the SMART dashboard results have been generated. This process is explained in chapter 3.5 - Creating the dashboard, and is generally performed by the person assessing the safety culture.

It is recommended to follow the steps below in the validation process to ensure a shared opinion can be formed at the end of the process.



4.2 Validation method for Safety Survey Dashboard

The tool contains a sheet labelled "Validation actions" to facilitate on-site verifications by tool users of the SMART matrix results.

The top part of the "validation actions" sheet is used to select a safety root and dimension combination for validation. In the example below, a validation is sought after on the safety awareness and behaviour of middle management staff.

The goal of the validation method is always to substantiate subjective results originating in the Safety Survey dashboard with objective evidence or opinions.



	Select SMART matrix to be validated							
	Please select a Root: Middle Management	1	Please select a Dimension:					
		-						
	Expectations for validation							
1	Expect evidence of communication between middle management and executives on staff requirements.							
2	Recruitment process or initial training contains behavioural assessment elements related to	o safe	ety					
3	MM level is able to vocalize what safety means, and how it is managed							
4	Prioritization on urgent safety issues							
5	Frequent communication exists between operational management and safety							
6	Reporters receive reedback after providing safety related information	o etai	ff on cafaty related issues					
8	Individual staff reacts positive to possible participation in activities that increase safety	e sta	in on safety related issues					
9								
⊢	Review Facilitators and Obstacles for this selected SMART matrix							
⊢		Г						
	Facilitators		Obstacles					
1	Allocating resources strategically based on production	1	Upkeeping production irrespective of resources available					
2	Recruiting based on appropriate function profiles that include risk taking and safety	2	Recruiting and promoting solely on organisational goals excluding safety					
3	Leading by example on safety	3	Communicate with hollow words on safety					
4	Pro-active addressing safety issues	4	Laid back attitude towards clear safety objectives					
5	Continuous and active communication between management and safety	5	One directional communication					
6	Provide feedback after safety notification received	6	Single fully automated standard response, or no response at all to notifications					
7	Expressing mutual expectations between organisational layers related to safety management	7	Assuming human error is reason for unsafe situations					
8	Understanding of purpose, personal fulfilment and appreciation for individuals in participation	8	Lack of knowledge/insecurity on participating options, existing high workload					
9		9						
	Suggestions for verification		Method					
1	Verify existence of staff allocation based on safety arguments.	1	Interview					
2	Verify recruitment process for frontline staff	2	Document review					
3	Pose question: "How do you demonstrate your commitment to safety for the staff under your	3	Interview					
4	supervision ?" Verify the existence and functioning of a process to prioritize in urgency at safety department	4	Discussion					
5	Verify documented existence	5	Document review					
6	Verify documented existence	6	Discussion					
7	Pose question: "What safety expectations do frontline staff have for you based on your position?"	7	Interview					
°	Pose question: Describe your reeling when you would be invited to participate in a safety investigation r	°	Interview					
9		9						
	What to do	-						
1	Pose question: "How do you ensure that understaffing does not have a negative effect on safety goals?"							
2	If missing in recruitment process, verify existence of behavioural elements is annual staff assessments		Pose question: "How do you ensure newly hired staff has an positive attitude towards safety?"					
3	Follow up question: "Who are your rolemodels in safety in this organisation?"		Pose question: "How are topics that can affect operational safety discussed in the planning phase?"					
4	Pose nuestion: "When outside your scope of responsibilities, what method do you use to indicate an		Follow up question: "When within your area of responsibility, how do you prioritise decisions based on safety					
	decision is urgent based on safety arguments?"		ronow up question. When within your area or responsionity, now do you promise decisions based on safety arguments?"					
5	Assess if rate of communication between operational management and safety matches organisational size							
6	Assess the quality of feedback send in relationship to the event reported							
7	Follow up question: "How are these expectations expressed and communicated?"							
8	Expect high returns on internal postings for safety positions							
9								
1								

Figure 4.2-1 - Validation action sheet example

The validation process is constructed in the following manner:

- 1) Expression of facilitators and obstacles for the selected matrix combination;
- 2) Definition of expectations assuming that the queried safety root would have reached the highest maturity level (refer to chapter 3.4 Maturity of safety culture dimensions); and
- 3) Suggested methods for verification, with specified methods and what to do.



4.2.1 Facilitators and Obstacles

Facilitators and obstacles are factors or elements that can respectively aid or hinder the achievement of reaching a higher maturity level for the Safety Culture. Recognizing and addressing both facilitators and obstacles is essential for a successful validation of the presented SMART matrix.

Facilitators

Supportive Factors

These are elements or conditions that make it easier to accomplish a safety goal or task. For example, having a skilled team, access to necessary resources, or a well-designed plan can be facilitators in a Management of Change project.

Motivation and Enthusiasm

A high level of motivation and enthusiasm among individuals serves as a facilitator for a higher maturity in the safety culture. When people are excited about what they are doing, they are more likely to overcome challenges and achieve success.

Effective Communication

Clear and open communication channels can facilitate understanding, collaboration, and problem-solving in various contexts.

Training and Skill Development

Investing in training and skill development can facilitate personal growth and professional success. Acquiring new knowledge and honing skills related to safety management will improve the organizations safety performance.

Obstacles

These are factors that create difficulty or resistance in achieving a higher maturity level in the safety culture. Challenges can include limited motivation, resources and complex regulations, among others.

Lack of Knowledge or Skills

Insufficient knowledge or skills can be a significant obstacle. It may hinder individuals or organizations from effectively addressing safety problems, resulting in solid safety states that demotivate staff.

Resistance to Change

People's resistance to change can be a substantial obstacle in safety culture changes. Whether it's resistance to new technology or organizational changes, resistance can slow down progress.

Limited Resources

Inadequate funding, time constraints, and scarcity of essential manpower can pose obstacles to achieving an improved safety culture.

Regulatory Constraints

In some cases, regulations and legal requirements can act as obstacles to the development of safety culture, particularly if they are complex, stringent, or subject to frequent changes.



4.2.2 Expectations

Various expectations are defined for the selected hotspot or area of interest, tailored to the organisational layer or safety root.

These expectations are formulated assuming the presence of a high safety culture maturity. The purpose of formulating expectations is to precondition the mindset of the tool user with a benchmarked suggestion on what to look for during the validation process.

Not meeting these expectations does not necessarily correlate to a negative score for the safety culture. It can simply mean that the objectives of the safety dimension queried might be reached in a different manner than would normally be expected.

In all scenarios, it is important to reach a shared opinion. This is particular true to ensure that monitoring and action points are extracted to further improve the safety culture or the organizations awareness on hotspots.

4.2.3 Suggested methods for verification

This section is intended to provide the tool user and assessed organisation with suggestions to assess the expectation defined for that SMART matrix. The sections contains both suggestions and what to do to in order to form an opinion on the maturity of the safety culture for that matrix selection.

After performing the validation actions, the result can either be that:

- 1) The validation action supports the off-site defined SMART matrix hotspot; or
- 2) The validation action indicates that the hotspot score in the SMART matrix was incorrectly determined:
 - a. Too high; resulting in a lowering of the maturity level; or
 - b. Too low; resulting in a raising of the maturity level.

4.3 Formulating opinions on the safety culture

As most organisations have their specific systems in place, and the SMART method is intended to cover various organizations, the tool does not include a specific reporting form. However a format for the opinions on safety culture is provided in this section to ensure a unform understanding between tool user and assessed organisation.

Forming a shared opinion on the safety culture is an important step in the SMART process. It involves the tool users' and organizations assessment of the SMART matrix accuracy and the related information obtained during the validation of the Safety Survey Dashboard results. It's important to note that the opinion represents a shared professional judgment based on verified evidence.

When formulating an opinion, the goal and wording of this opinion should always be to promote maturity growth of the safety culture. For this purpose negative connotations should be avoided as much as possible.

In the SMART methodology, a formulated opinion should include:

- 1. The safety root to which it applies;
- 2. The safety dimension that it addresses;
- 3. The assessed and/or corrected maturity level present;
- 4. A description of the opinion; and
- 5. The facilitators and obstacles affecting further growth.



Table 4.3-1 Example of a formulated opinion

Reference	Safety Root	Safety Dimension	Maturity level	Opinion	Facilitators promoting growth	Obstacles hindering growth
1	Middle Management	Awareness and Behaviour	3. Calculative	A mutual expectation of safe behaviour is present between Middle management and operational staff. However, middle management has limited knowledge on actual safety risks taken by operational staff.	Training and skill development. Eagerness to understand risk at middle management level.	Lack of practical experience in function.

The formulated opinion should be acceptable for both the tool user and the assessed organisation. When the tool user and assessed organisation cannot agree on developing a shared opinion, the following elements should be considered by both the tool user and the assessed organisation.

Presence of bias

The presence of bias is more related to personal attitude than towards professional background and experience. Bias can prevent two parties from reaching a shared opinion. This is true for both the assessed organisation and the tool user.

Typically the source that is biased can be identified when one or more of the following is noticed:

- 1) Heavily opinionated or one-sided;
- 2) Unsupported or unsubstantiated claims;
- 3) Use of selectable facts that lean towards a known outcome; and/or
- 4) Presentation of facts as opinions.

Complacency

This presence of complacency is not related to the size or quality of the organisation but rather to past experiences of an individual. Complacency can be recognized when the organisational culture:

- 1) Depends mostly on rules and procedures; and/or
- 2) Does not contain challenging processes, procedures and standards.

A risk adverse cultures breads complacency; organizations that react negatively to mistakes made by managers and employees will find themselves with a workforce trained to follow existing rules and procedures without question.

Mismatch in reference framework

The reference framework describes the professional background and experience. Misunderstandings are more common when a gap exists between the reference framework of the assessed organisation and the tool user.



5 Verification of SMART method

5.1 Trial period

The SMART method has been verified in an operational environment using four different Commercial Air Transport organizations. These organizations agreed to participate in a trial period on the condition of anonymity.

The following characteristics describe the participating Air Organizations.

Organisation	Type of operations	Business model	Aircraft type	Staff in the organisation
1	Scheduled Commercial Air Transport (IFR)	Low Cost	Medium Haul Narrow body	1.500 +
2	Scheduled Commercial Air Transport (IFR)	Low Cost	Medium Haul Narrow body	1.200 +
3	Scheduled Commercial Air Transport (VFR)	Holiday	Small turboprop	1.000 +
4	Non-scheduled Commercial Air Transport (VFR/IFR)	VIP	Medium/Long Haul Business Jet	75

Table 5.1-1 Participating air operators

The trial was conducted in October 2023 over the course of a 3 weeks and guided by the contracted expert that developed the system.

A total of 966 staff members from the above organizations participated in the trial period. For the purpose of the trial, the participating air operators selected the staff to whom the SMART Safety Survey was send. The averaged response rate was approximately 30%.

The average time for a participant to complete the survey was approximately 12 minutes. It's best to keep surveys under 12 minutes – though 10 minutes is even better. Often, the longer the survey, the higher the dropout rate. Kantar has found that a survey that takes over 25 minutes loses more than three times as many respondents as one that is under five minutes.

No technical issues were reported by the participating organizations during the trial period.

Responses (Max 20)

3 # Responses (Max 20)



5.2 Result of trial period

	Awareness & Behaviour	Commitment & Engagement	Effectiveness	Promotion & Information	Identification & Reporting	Training & Knowledge	Grand
Exec	7,3	8,3	8,0	8,3	8,8	7,6	8,0
Middle	6,5	7,8	7,6	8,3	8,3	7,4	7,5
Safety	7,9	7,7	7,1	9,3	9,4	8,4	8,0
Ops	6,3	7,1	8,0	7,2	8,4	8,3	7,4
Aircrew	6,9	7,0	7,0	6,7	7,8	8,3	7,3
Grand Total	6,8	7,3	7,3	7,7	8,0	8,1	7,5

5.2.1 Safety Survey Dashboard examples

Figure 5.2-1 Safety Survey Dashboard - Organisation 1

Dim

	Awareness & Behaviour	Commitment & Engagement	Effectiveness	Promotion & Information	Identification & Reporting	Training & Knowledge	Grand Total
Exec	8,2	8,7	8,4	8,9	8,6	8,4	8,5
Middle	7,4	8,2	7,5	8,4	7,6	7,6	7,7
Safety	7,4	8,1	7,5	8,4	8,3	7,7	7,8
Ops	6,8	7,6	7,9	6,8	8,0	8,2	7,5
Aircrew	6,8	6,9	7,0	6,5	7,3	8,1	7,2
Grand Total	6,9	7,0	7,1	6,9	7,4	8,0	7,3

Figure 5.2-2 Safety Survey Dashboard - Organisation 2

	Awareness & Behaviour	Commitment & Engagement	Effectiveness	Promotion & Information	Identification & Reporting	Training & Knowledge	Grand Total
Exec	7,0	10,0	8,4	10,0	9,6	7,3	8,5
Middle	4,6	7,2	6,9	8,0	9,5	5,5	6,5
Safety	8,0	8,7	8,6	10,0	10,0	7,3	8,5
Ops	5,2	7,3	8,4	10,0	10,0	10,0	7,9
Aircrew	6,0	8,4	6,8	10,0	10,0	8,3	7,7
Grand Total	6,1	8,5	7,8	9,7	9,8	7,4	7,9
							7
	Root		Dimensions		Quest	tion	[#

Figure 5.2-3 Safety Survey Dashboard - Organisation 3

	Awareness & Behaviour	Commitment & Engagement	Effectiveness	Promotion & Information	Identification & Reporting	Training & Knowledge	Grand Total
Exec	7,3	8,8	6,6	8,4	8,2	6,7	7,5
Middle	7,0	8,5	8,2	9,7	9,3	7,0	7,9
Safety	8,0	5,3	6,1	7,8	6,5	6,8	6,7
Ops	6,5	7,3	8,3	7,7	8,9	8,6	7,8
Aircrew	7,1	7,1	7,0	7,0	8,0	8,5	7,5
Grand Total	7,0	7,3	7,1	7,7	8,1	8,1	7,5
	Root		Dimensions		Quest	ion	3



The above figures clearly indicate differences in safety culture dashboard of the assessed organizations.



In organisation 1 a focus on the Operations and Aircrew safety roots would seem the most logical, considering that these have the lowest score on average.

For organisation 3 the results indicate a focus on the Awareness and Behaviour dimension of safety culture. With a specific attention on the lower scoring safety roots "Middle management" and "Operations".

For organisation 4, the Safety staff root indicates a point of interest, with a focus on the Commitment & Engagement, Effectiveness and Identification and Reporting safety dimensions. Another area of interest for this organisation would be the Executive safety root, specifically the Effectiveness and Training/Knowledge safety dimensions.

The above mentioned focusses were discussed with the representatives of organizations 3 and 4. Both organizations confirmed the validity of those areas of interest by means of their own internal procedures and organisational knowledge.

5.2.1.1 Matrix combinations examples

For organisation 3, a matrix combination was selected in the SMART dashboard. The results of this selection are produced below in figure 5.2-5.



Figure 5.2-5 – Middle Management // Awareness and Behaviour – Organisation 3

The figure above indicates the best and worst scoring responses for this specific matrix combination. On the worst scoring side, the middle management displays a negative sentiment towards anonymous reporting. This is of particular interest considering their opinion that performance reviews should be higher when fewer safety events are reported. This combination would warrant a focus on how the organisation would reacts towards this opinion.

The figure also displays a limitation that exists in version 1.0 of the dashboard that is related to the amount of survey questions. For some safety roots, the number of survey questions is too low to prevent that a question appears both as the best scoring and worst scoring response. The addition of extra survey questions will prevent this, but will also increase the time required to complete the survey.



For organisation 4 a matrix selection for the Safety root and Commitment and Engagement dimension was made. This resulted in the below figure 5.2-6.



Figure 5.2-6 – Safety // Commitment and Engagement – Organisation 4

The best scoring responses for this matrix combination indicates that the safety department receives frequent information from staff on safety related issues. The biggest difference to the ideal score results from how a gap between what the documented safety policy says and how the organisation actually works.

5.2.2 Organisational overview examples

The organisational overview dashboard provides information on communication, staff experience and survey response rates. For each of the participant organizations, different information was displayed in the dashboard.

The figures below were selected to display those organizations where the variety of the information provided was most obvious.



The figure on communication above indicates that the self-assessment on language proficiency for the various safety roots throughout the organisation varies significantly. The safety staff assessed their (English) language skill the highest, whilst the operational staff and executive level rated themselves lowest. These differences can be important with respect to, for example, the understanding of safety information for operational staff (lower score) when written by safety staff (highest score). In this example, the safety information provided could be more tailored to the target group, for example by reducing sentence length and adjusting the vocabulary.



The Hofstede Cultural Analysis for organisation 1 shows a significant difference for Operations staff across all cultural dimensions defined by Hofstede. This remarkable difference with the rest of the organisation will have an effect on the interaction between those safety roots. The exact manifestation for these effects with respect to the safety culture will need to be understood.



Figure 5.2-8 - Staff experience – Organisation 4

The staff experience for organisation 4 shows that a high percentage of operational and safety staff have a limited professional experience of less than one year. This could point towards a validation of those safety roots. When comparing this figure 5.2-8 with the hotspots identified in figure 5.2-4 the safety dimensions for Training and Knowledge actually score highest for the operational staff. In this organisation the lack of staff experience seems to be offset by providing training, which demonstrates a positive safety culture.



Figure 5.2-9 - Survey responses – Organisation 2

The survey response section on the overview for organisation 2 correlates on language proficiency with the above self-assessment. Curiously, all participating organisation displayed a distribution that followed more or less the same pattern. The higher organisational safety roots (Executive and Middle Management) assessed themselves to have more difficulty in understanding the survey compared to the more operational safety roots. This effect could be explained by the idea that in operational organizations usually the frontline staff is more confronted with safety events, and possibly has a better understanding of the vocabulary associated with safety management.

The dashboard suppressed the survey results of approximately 20% or the Aircrew, 12% of Middle Management and 3% of Operational staff. This suppression is caused by an unrealistic (fast) survey response time. This is usually associated with complacency behaviour where the participant wants to participate, but easily disconnects whilst doing and starts to randomize survey answers. In order to assess whether complacency truly exists in that safety root, the survey response rate can be used.



5.2.3 Safety Reporting Dashboard examples

The safety reporting dashboard contained some errors during the trial period, and the information in this section is therefore unfortunately not representative. The source of the errors is known, and this will be corrected in a newer release of the SMART Dashboard.

The figure below demonstrates how the staff views the reporting system in place for organisation X. The statement that half of the people that experienced a safety event did not report this on the argument that reporting will not change anything is worrying. This would indicate a pathological or reactive safety culture for this safety root.









Appendices

A1 SMART user guide

A1.1 Access to the tool

The SMART tool consists of three main elements:

- 1. The Safety Survey form developed in MS Forms;
- 2. The Operational Complexity Survey form developed in MS Forms; and
- 3. The SMART dashboard developed in MS Excel.

	Safety Survey form	Operational Complexity form	SMART Dashboard v1.0
Purpose	Surveying the safety roots	Accessing the organisational size and complexity	Analysis of results and follow up
Uses	MS Forms	MS Forms	MS Excel
Access		Contact info@sig-aviation.nl	

The above QR codes are dynamic and will remain the same when the URL of the master files is updated. To receive information on updates of the SMART method, use the following QR code to register your contact details.



A1.1.1 Setting up the SMART system



If unable to setup the system successfully, use the QR code for the **Error! Reference source not found.**SIG Aviation offers free support and hosting of the SMART system.

CAUTION

Do NOT change the questions (order or content) in MS Forms or the Dashboard input sheets. Failure to do so will result in the Dashboard being unable to process the survey results.

The SMART Survey Dashboard contains macro's that are designed to auto-generate the content of the dashboard from the survey results. Disabling these macro's will result in the Dashboard being unable to process the survey results.

Setting up a new organisation

Step 1)

Create a new folder on your Microsoft One Drive³ with the name of the new organisation



³ For organizations without One Drive, SIG Aviation offers hosting for the duration of the survey.



Step 2)

Copy the SMART Dashboard (XLS file) downloaded with the QR code above⁴ and paste into the newly created folder and rename as "[ORGANISATION NAME] – EASA SMART Survey Dashboard"



Step 3)

Go to the SMART Forms using the above QR code and create a copy of the EASA SMART Survey Master form by clicking the three dots and then copy.

Forms				?	0
🐻 New Form	Quick import			III). Explore templates ${}^\vee$	
🕒 Recent 🕒 My forms 🔲 F	illed forms 🔐 Shared with me	2 Favourites		Filter by keyword 🗮 👪	
		🖸 Open			
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ð' q 🖆 🔟	>	Copy গণ Move to a group			
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	EASA SMART Survey Master	Copy 첫 Move to a group 와 Favourite — Remove from Recent	- Wizz Air Malta		

Step 4)

This will create a new copy of the form on your own personal instance of MS Forms (as shown by the red circle). Next click the three dots and select "Move to a Group" this will open a pop-up to the right. Select a destination then click "Move"

⁴ Contact SIG Aviation to obtain the master files if not received.





Step 5)

Open the newly created form and then rename it to "EASA SMART Survey – [ORGANISATION NAME]" by altering the text in the top field



Step 6)

Click the Responses tab and click "Open in Excel" to create an Excel workbook which will save the responses.



Step 7)

This will open the form in Excel online. Click the editing dropdown in the top right and click Open in Desktop App



Step 8)

Once open in Excel, save the file to One Drive and into the newly created Organisation folder from step 1) under the name EASA SMART Survey – [ORGANISATION NAME]



EASA SMART Su	rvey - Wizz Air Hungary 1 $ g^{R}$ + Last Modified: Just now		James Littlewood
\bigcirc	Save a Copy		
☆ Home	(L) Recent	↑	
New	SIG Aviation	EASA SMART Survey - Wizz Air Hungary Excel Workbook (*xlixx)	▼ Save
Open Get Add-ins	OneDrive - SIG Aviation james@SIGAviation306.onmicrosoft.c	More options	
Info	Sites - SIG Aviation james@SIGAviation306.onmicrosoft.c	Name 1	Date modified
Save a Copy	Other locations		
Print	This PC	Archive - do not use	27/09/2023 16:43
Share Export	Add a Place		

All new responses to the MS Form will automatically be updated into this Excel sheet.

Step 9)

Repeat the process for the Operational Complexity Survey. Create a copy of the **Operational Complexity – Master** survey, rename it to "Operational Complexity – [ORGANISATION NAME]" and then **Move to a Group** -> **SIG Aviation**. Since there should only be one response to this survey, there is no need to create an Excel sheet that is auto-updated. Once there has been a response, access the results through the **Responses** tab of the survey in MS Forms, click the **Open in Excel** icon highlighted below and copy the data out of the Excel Online spreadsheet.

 Forms			Operational Complexity - Master - Saved \smallsetminus			
Questions	Responses 1			Preview	Style Collect responses	🖵 Present 😶
		Operational Complex	vity - Master			Í
		1 Responses	05:04 Average time to complete	Active _{Status}		
		View results		関 Open in Excel 🛛 …		

Step 10)

Share the Forms with the organisation. To do this, go back to the Form, click **Collect Responses** in the top right. Ensure **Anyone can respond** is selected and then copy the link which can then be distributed via email. It is personal preference if you want to shorten the URL by clicking the checkbox.

Clicking on the icon with QR code will generate a QR code to allow access to the survey.







A1.2 Process and workflows

The SMART process involves three sequential main steps:

- 1) Initial Set-up
- 2) Off-site Assessment
- 3) On-site Verification

A1.2.1 Initial Set-up

The initial set-up step is intended for the tool user to brief the assessed organisation on the purpose of the SMART process and ensure that a common understanding of the objectives exists. For this purpose, a neutral MS PowerPoint presentation has been developed that can be used as a general guide by the tool user.

For tool users that are not part of the organisation to be assessed, or act as Civil Aviation Authority, a specific Non-Disclosure Agreement might be requested from the organisation to be assessed to ensure data protection and confidentiality.

During the initial set-up both tool user and assessed organisation nominate a person who will act as focal point for the respective organisation. This person will have the following responsibilities during the initial set-up process.

Tool user	Organisation to be assessed	Reference to
Explanation of SMART method	-	This entire document
-	Prepare NDA	
Prepare Tool	Selection of survey participants	
Send survey link to Organisation	Distribute survey invitation to staff	A4 Example of invitation leaflet
Close participant survey	Complete survey on Organisational data	
Insert data tables in SMART Dashboard	-	A1.3.1 Updating the dashboard

A1.2.2 Off-site Assessment

The off-site assessment period covers the time period from when the survey is closed and the dashboard is created up to the moment of an on-site verification, if decided upon. The Tool user distributes the dashboard to the nominated person in the assessed organisation so that both organizations can assess the results independently.

During the off-site assessment the Tool user will most likely focus on defining areas of interest, whilst the organisation that is being assessed focusses on whether or not the identified hotspots are recognized, and if not, what substantive objection information can be prepared for the review meeting. During this phase, both organizations use the information provided in chapter 4 -



Validation of dashboard.

The review meeting is intended to form a shared opinion between tool user and assessed organisation on the safety culture in terms of maturity and suitability for the organisation. In typical aviation oversight, it would be the tool user that contributes with viewpoints from safety intelligence (theory), whilst the organisation offers a safety mindfulness (practical) perspective.



Tool user	Organisation to be assessed	Reference to
Update the SMART dashboard	-	A1.3.1 - Updating the dashboard
Distribute Dashboard	-	
Form opinion on Safety Survey Dashboard from Safety Intelligence perspective	Verify Safety Survey Dashboard from Safety Mindfulness perspective	 3.2 - Safety Survey Dashboard 3.4 - Maturity of safety culture dimensions 0 - Validation of dashboard A3.3 - Safety Culture maturity levels
Organise review meeting	Prepare objective information for review meeting	0 - Validation of dashboard
Create shared and mutually acc	epted opinion on safety culture	

A1.2.3 On-site Verification

The on-site verification is intended to allow an on-site audit-type review of the dashboard results. The goal of the SMART method is to facilitate a shared and mutually accepted opinion on the safety culture in an organisation. The purpose of the on-site verification is to verify in what ways the Safety Survey Dashboards represents the reality.

CAUTION

Although the term 'audit' is used, it must be emphasized that the goal on this on-site verification is not to create findings on safety culture. The auditor is reminded that the term 'finding' should be used in a regulatory or procedural compliance context, and not in a reference to a culture. A more suitable term for this purpose would be an 'opinion'.

The existing controls, and possible improvements to those controls, for identified hot spots are always controlled by the organisation that is assessed and can their existence can be verified by the tool user.

Tool user	Organisation to be assessed	Reference to
Propose on-site verification	-	
Indicate hotspots of interest	Prepare existing controls for hotspots of interest	
Create shared and mutually acc		



A1.3 How the tool works

Data from the surveys is copied and pasted into the INPUT SHEETS tabs (yellow coloured) in the dashboard. These light-yellow tabs are related to the safety reporting dashboard.

There are various sheets that are hidden for normal users, but function as the engine of the dashboard.

The purple "Look-Up sheets" tabs join reference data into the main data set e.g. taking the long name for each root and replacing it with a shorter version to make it easier to read (e.g. "*Middle Management (line management, department head, etc*" to "Middle").

The most important tabs in this section are Main Look-Up and OC Look-Up. These tabs ensure that the dashboard is able to process the input data from the Safety survey and Organisation Complexity (OC) survey respectively.

These sheets exist so that the wording of each question can be changed without it affecting the performance of the dashboard.

It is vital that the following information is correct in this sheet:

- 1. The order of the questions as they appear in the columns in the output of the survey
- 2. The appropriate root and dimension for each question
- 3. The question style appropriately identifies whether "Strongly Agree" is a strong positive or a strong negative

The cleaned wording is the wording that is shown in the dashboard – it trims blank spaces and removes numbers from any repeated questions.

There are binary flags on the right-hand side which allow the background queries to quickly filter out data which isn't relevant for the analysis on a particular dashboard page.

The dark blue tabs are the dashboard sheets which are for external view by the organisation.

The light blue sheets contain the pivot tables which run the Safety Survey Dashboard analysis and create the data for the charts that specific dashboard.

The orange tabs are related to the Organisation Overview dashboard. The sheets closest to the left of this section contain the pivot tables which operate the charts. The other sheets contain the raw data for these sheets as outputted by the background queries running from the survey data.

FINAL



A1.3.1 Updating the dashboard

To be conducted once the organisation has completed the survey.

Step 1)

Open the Dashboard for the organisation and navigate to the yellow **Responses** sheet. Clear any existing data from the table by selecting all information in Row 2 (ID #1 and below) and below and hitting delete. N.B. *Clicking on any* row in the table and clicking CTRL + A will select the correct information to be deleted.



Step 2)

Go the organisation's survey results workbook (e.g. *"EASA SMART Survey – [ORGANISATION NAME*) and select all the response data. Copy and paste this into the "Responses" sheet in the main dashboard. Ensure that you copy all of the rows data from the survey results (excluding the header row).

Step 3)

To update the Operational Complexity information, go to the yellow **Operational Complexity** sheet. Clear any data in the same manner as step 1. Go to MS Forms, select the relevant organisation's Operational Complexity Survey. Go to **Responses** -> **Open in Excel** and copy the most recent single row of data into the **Operational Complexity** table of the dashboard.

	Excel Operational Co	omplexity - Master 🤹 🗸							@ (1)
File	Home Insert	Draw Page Layout Formulas	Data Review View H	lelp Table Design		ΠC	omments 🗠 Catch up	🖉 Editing 🗸	R^{R} Share \simeq
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Tablat	Cipecard	Fore	Algoment	Number	30/45	Uelo	Eating	ADD-IFS	~
lable		C. 1 -							
	A	ВС	DE	F	G	н	Lange and the	J	К
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3									1
4									

Step 4)

Go to the Data tab in the Excel toolbar and click Refresh All. Wait for the queries to finish updating.

III Excel	EASA SMART Survey Dashboard - Master 🍝 -					۵ 🚲
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Step 5)

Click Refresh All again to update the charts in the Dashboard

The dashboard is updated with the survey information

A1.3.2 Adjusting the Survey Cut-Off Time

The survey cut-off time is used to suppress individual response results in the dashboard that are likely not authentic due to an excessively fast survey response time.

Step 1)

To adjust the cut-off time, go to the Survey Duration Cut-Off Time sheet.

Step 2)

Change the value in the top table, keeping the "00:00:00" time format.



QID	≚ Sur	vey Cut Of
	1	0:00:30
	2	0:00:30
	3	0:00:30
	4	0:00:30
	5	0:00:30

In the above example, the cut-off time is set to 30 seconds. This setting will supress all individual results for which the survey took 30 seconds or less to complete in the dashboard.

A1.3.3 Troubleshooting

Charts in the Organisation Overview Dashboard aren't working

- 1) Go to the organisation Overview Analysis sheet
- 2) Compare how the sheet looks versus the master version
- 3) Check that the dashboard has been updated got to Data -> Refresh all. Click refresh, waiting for the background queries to update, click refresh again
- 4) Ensure that the filters are applied correctly:
 - a. If the question wording has been updated, the filters will need to be amended to account for this. The original question wording is written above each pivot table.
 - b. Ensure that the filter is correctly applied to either 1) the column label or 2) to the question filter.



A2 Survey questions

A2.1 Operator Complexity

A2.1.1 General questions

Question number	Туре	Content
M1	Open	What is the name of the organisation?
M2	Open	In what country is the homebase located?
M6	Open	How many different aircraft types are listed on the AOC?
M7	Open	What is the operational language used in the organizational manuals?
M16	Open	What is the approximate number of staff making executive decisions?
M16	Subtitle	Related to the operational part of your organisation and expressed in FTE. These staff are typically designated as Accountable Manager, Nominated Person, COO, etc.
M17	Open	What is the approximate number of staff in middle management?
M17	Single answers	Related to the operational part of your organisation and expressed in FTE. These staff are typically designated as line manager, head of units, etc.
M18	Open	What is the approximate number of staff involved in Operations?
M18	Subtitle	Related to the operational part of your organisation and expressed in FTE. Not including aircrew. These staff are typically designated as office staff, flight planners, operations engineers, etc.
M19	Open	What is the approximate number of staff qualified as Aircrew?
M19	Subtitle	Related to the operational part of your organisation and expressed in FTE. These staff are typically designated as commander, first-officer, flight engineer, purser, flight attendant, etc.
M20	Open	What is the approximate number of staff working in the Compliance and Safety department?
M20	Subtitle	Related to the operational part of your organisation and expressed in FTE. If the compliance and safety departments are functionally separated, only provide information on safety staff. These staff are typically designated as auditor or inspector, safety action group member, etc.
M21	Open	How many aircraft are operated in total?

A2.1.2 Type of operations questions

Question number	Sequence	Туре	Content
М3		Multiple answer question	What type of Air Operations are conducted?
М3	а	Answer option	Commercial Air Transport (Scheduled)
M3	b	Answer option	Commercial Air Transport (Unscheduled)
M3	С	Answer option	Passengers
M3	d	Answer option	Cargo



M3	е	Answer option	Aerial work
M3	f	Answer option	Emergency Medical Services
M4		Multiple answer question	Which of the following Operational Approvals are listed on the AOC?
M4	а	Answer option	PBN - Performance Based Navigation
M4	b	Answer option	MNPS - Minimum Navigation Performance Specified
M4	С	Answer option	RVSM - Reduced Vertical Separation Minima
M4	d	Answer option	LVO - Low Visibility Operations
M4	е	Answer option	ETOPS - Extended Range Operations
M4	f	Answer option	DG - Transport of Dangerous Goods
M4	g	Answer option	SET-IMC - Single Engine Turbine / IMC

A2.1.3 Area of operations questions

Question number	Sequence	Туре	Content
M5		Multiple	In which of the following geographical areas is the organisation
		answer	active?
		question	
M5	а	Answer option	AFI
M5	b	Answer option	NASIA
M5	С	Answer option	ASPAC
M5	d	Answer option	CIS
M5	е	Answer option	EUR
M5	f	Answer option	LATAM/CAR
M5	g	Answer option	MENA
M5	h	Answer option	NAM

A2.1.4 Subcontracted activities questions

Question number	Sequence	Туре	Content
M8		Multiple answer question	Which of the following Operational Processes are subcontracted?
M8	а	Answer option	(Recurrent) Flight Training and Checking (Simulator)
M8	b	Answer option	(Recurrent) Ground Training and Checking (CBT)
M8	С	Answer option	(Recurrent) Ground Training and Checking (Classroom)
M8	d	Answer option	Planning of Crew Training
M8	е	Answer option	Operational Control and Flight Watch
M8	f	Answer option	Crew Scheduling
M8	g	Answer option	Operational Flight Planning
M8	h	Answer option	Document Management (revision and control)



M9		Multiple answer	At the home base, which of the following operational processes related to individual flights are subcontracted?
		question	
M9	а	Answer option	Aircraft cleaning (CLNG)
M9	b	Answer option	Cargo handling and loading (CRGO)
M9	С	Answer option	Line Maintenance (LMX)
M9	d	Answer option	Passenger Services (PAX Serv.)
M9	е	Answer option	Ramp Services (RMP Serv.)
M9	f	Multiple	Away from the home base, which of the following operational
		answer	processes are typically subcontracted?
M9	g	Answer option	Aircraft cleaning (CLNG)
M9	h	Answer option	Cargo handling and loading (CRGO)
M9	i	Answer option	Line Maintenance (LMX)
M9	j	Answer option	Passenger Services (PAX Serv.)
M9	k	Answer option	Ramp Services (RMP Serv.)
M10		Single answers	Are safety inspections or audits performed for subcontracted services?
M11		Single answers	Are subcontracted organizations able to report safety events?
M12		Open	Approximately how many safety reports were received from subcontractors in the last 12 months?
M13		Open	Approximately how many safety inspections at sub-contractors were performed in the last 12 months?

A2.1.5 Safety Management questions

Question number	Sequence	Туре	Content
M22		Open	How many safety inspections/audits were scheduled in the last 12 months?
M23		Open	How many safety inspections/audits were completed in the last 12 months?
M24		Open	Approximately, how many corrective actions were implemented in the last 12 months as a result from a safety inspections/audits?
M25		Open	How many Safety Performance Indicators are established and continuously monitored?
M26		Open	How many occurrences were reported by the organisation under a Mandatory Occurrence Reporting Scheme in the last 12 months?
M27		Open	How many Safety Review Board meetings were completed in the last 12 months?
M28		Open	Approximately, how many safety events were reported in the last 12 months?
M29		Open	How many Safety Investigations were completed in the last 12 months?
M30		Open	How many unscheduled or adhoc safety inspections/audits were performed in the last 12 months?



M31		Multiple answer question	Is the organisation using or applying other safety related programs/standards than those applicable for the AOC?
M31	а	Answer option	Fatigue Risk Management System
M31	b	Answer option	Flight Data Monitoring Programme
M31	С	Answer option	Problematic Substance Use Prevention Programme
M31	d	Answer option	Mental Health Programme for aircrew
M31	е	Answer option	IATA Operational Safety Audit (IOSA)
M31	f	Answer option	FSF - Basic Aviation Risk Standard (BARS)
M31	g	Answer option	Line Operations Safety Audit (LOSA)
M31	h	Answer option	Other
M32		Single answers	Is the person responsible for safety management different than the person responsible for compliance monitoring?
M33		Single answers	Is safety management integrated in the compliance monitoring department?

A2.2 SMART questions

A2.2.1 Executive level

Awareness and behaviour

Question Number	Sequence	Content
E2	С	In my position, I have the authority to bypass established procedures to achieve a deadline.
E3	а	Anonymous reporting can be misused by disgruntled staff and therefore should be discouraged.
E3	С	Humans make errors, this happens to all of us. How we deal as executives knowing this is more important than the error itself.
E5	С	I have a clear and actual knowledge on the status of the safety audits/inspections that have been carried out.
E6	g	When making decisions I am conscious on how staff would perceive my decision from a safety perspective.
E6	h	Our staff sometimes acts unsafe. This is a given of human behaviour.

Commitment and Engagement

Question Number	Sequence	Content
E2	а	The safety level of this organisation is something that is frequently on my mind.
E3	i	We commit resources, such as time and money, towards real safety goals.
E4	b	We have clearly defined organisation goals related to safety.
E4	е	I am satisfied with the overall safety culture within the organisation.
E4	j	Risk awareness by employees has a negative impact on organisational goals.
E5	b	The safety policy of this organisation has been developed using my input.

Effectiveness



Question Number	Sequence	Content
E2	b	Sometimes I feel alone in advocating our safety practices.
E3	d	Middle management filters what is being reported on safety issues to prevent blame.
E3	g	The executive management has, in general, a good knowledge and understanding of the risks associated with the activities in this organisation.
E4	d	Safety concerns are addressed proactively rather than reactively in this organisation.
E4	f	In my opinion the risk level in the organisation is as low as reasonably practicable.
E4	k	Before implementing organisational changes, I always require the effects of that change on our safety level to be assessed.
E5	е	The executive officers have regular meetings with the safety manager.
E6	С	The Safety Management System is mostly a system that functions on paper and documents.
E6	f	We mostly learn from things that already went wrong in this organisation.

Identification and Reporting

Question Number	Sequence	Content
E2	е	We have staff that is misusing the safety reporting system for personal gain.
E3	j	People who report a safety issue receive confirmation that their report has been received.
E4	i	I feel confident that the CAA is fully informed on all safety that should be reported to them.
E5	f	Reporting on safety issues is an easy process for the staff.
E6	i	It is clear that some of the problems we decide upon as executives have been reported through the safety reporting system.

Promotion and Information

Question Number	Sequence	Content
E4	а	The safety metrics used in our Safety Management System enable me to understand the actual safety level.
E4	g	Our safety department communicates frequently on safety objectives.
E5	а	Our safety performance is discussed during executive meetings.
E5	d	Employee surveys or other forms of feedback provide valuable insight with respect to safety.
E6	j	Our staff sees a reward in working safe.

Training and Knowledge

Question Number	Sequence	Content
E2	d	Safety needs to be managed as an individual and not an organisational responsibility.
E3	b	Management of units where fewer safety issues are being reported should be rewarded.



E3	f	Establishing the safety culture of an organisation is mainly the responsibility of staff themselves.
E3	h	In our organisation, risk has been fully eliminated by implementing the Safety Management System.
E4	С	All our staff has been provided with safety training that is applicable to the work they perform.
E4	I	The cost of safety (equipment, resources, etc) is high in relation to the benefit.
E5	g	I have received training on the functioning of the Safety Management System and my responsibilities in this system.
E6	а	Safety reports should be kept confidential and internal within the safety department.
E6	b	The term 'Just Culture' means that we ignore failure modes identified as 'human failures'.
E6	d	When accidents do not happen, the organisation is safe.
E6	е	Safety is actively managed.

A2.3 Middle Management level

Awareness and behaviour

Question Number	Sequence	Content
MM2	а	I give staff feedback regarding their safety behaviour, such as praise or criticism for actions.
MM3	а	Anonymous reporting can be misused by disgruntled staff and therefore should be discouraged.
MM3	b	Performance reviews of managers should be rated more positive when fewer safety events are reported in their unit.
MM3	С	This organisation expects that deadlines and flight schedules are met at all costs.
MM4	b	I want a complete and through review of a situation, before it can be reported.
MM4	d	Shortcuts in procedures are sometimes required to ensure work is completed on time.
MM5	b	Discussions on safety issues in unit meetings are usually difficult.

Commitment and Engagement

Question Number	Sequence	Content
MM3	d	The organisation is making strong efforts to improve our safety practices.
MM3	е	When addressing a topic on safety, I felt never questioned or pressured.
MM4	С	I feel engaged in the safety culture of this organisation.
MM5	С	I know and understand the safety policy of this organisation.
MM6	h	I frequently tell staff under my supervision to report events they share with me.

Effectiveness

Question	Sequence	Content
Number		



MM3	f	There are undealt safety issues present on which reporting is not appreciated by this organisation.
MM4	е	My superiors have a good knowledge and understanding of the risks present in my unit.
MM4	h	The safety department contributes to our unit meetings by participating or providing information.
MM4	i	The operational risks present in the unit(s) under my supervision are as low as is reasonably practicable.
MM5	d	Safety Audits and Inspections are carried out in the unit(s) under my supervision.
MM5	е	We actively ask for employee feedback to determine the root cause of a safety issue.
MM5	g	I have an interest in safety related information when reading professional articles.
MM5	i	The safety department provides me with clear information and useful analysis of safety situations

Identification and Reporting

Question Number	Sequence	Content
MM6	а	Staff under my supervision has reported safety issues in the last 6 months.
MM6	b	It is clear what events must be reported, and within what time frame those events must be reported.
MM6	С	There are several ways to report issues, such as through a primary system, email, text messages, offline, etc.
MM6	d	Reporting on safety issues is an easy process for the staff under my supervision.

Promotion and Information

Question Number	Sequence	Content
MM5	а	Our safety department communicates frequently on safety objectives.
MM5	f	When someone reports a safety issue to me, I encourage that behaviour.
MM5	h	The staff under my supervision understands the basic safety principles.

Training and Knowledge

Question Number	Sequence	Content
MM2	b	In 99% of the situations, the root cause of a safety issue is human error
MM2	С	Safety needs to be managed as an individual and not an organisational responsibility.
MM3	g	The costs of safety (equipment, resources) are higher than the benefits.
MM4	а	Safety reports should come from the Head of Unit directly.
MM4	f	When we change a procedure of process in my unit, we assess the effects on safety beforehand.
MM6	е	A hazard reporting system is in place, and I have been trained on how to use it.
MM6	f	All staff in my unit has been provided with safety training that is applicable to the work they perform.



MM6	g	The term 'Just Culture' means that we ignore failure modes identified as
		'human failures'.

A2.4 Safety Management level

Awareness and bel	Awareness and behaviour		
Question Number	Sequence	Content	
S2	С	Bypassing documented procedures is acceptable when there is no safety concern.	
S2	е	Anonymous reporting can be misused by disgruntled staff and therefore should be discouraged.	
S3	а	Staff that has reported a safety issue, should be asked to explain the issue in person in the safety office.	
S3	d	Creating a positive safety culture in the organisation is the responsibility of staff themselves.	
S4	е	The risk awareness of staff has positively improved during the last year.	
S8	а	Safety reports should be kept confidential and internal within the safety department.	

Commitment and Engagement

Question Number	Sequence	Content
S1	question	How confident are you that your department contributes to a higher safety standard in the organisation?
S2	b	The middle management makes continuous efforts to improve our safety practices.
S3	i	We have clearly defined realistic organisation goals related to safety.
S4	f	Management of Change principles and goals are understood throughout the organisation.
S5	b	Our safety policy has been developed using my input.
S5	е	The safety policy matches with how we work.
S5	h	The safety priorities of this organisation have been updated using my input.
S8	g	We frequently receive safety related information from staff.

Effectiveness

Question Number	Sequence	Content
S3	е	The executive management has a good knowledge and understanding of the risks associated with the activities in this organisation.
S3	h	The safety indicators (SPI) used in our SMS are usable to understand the actual safety level.
S3	k	Safety concerns are dealt with proactively rather than reactively in this organisation.
S4	а	The safety culture within the organisation excellent.
S4	b	The risks in this organisation are as low as reasonably practicable.
S4	g	Costs (equipment, resources, etc) are a decisive factor in relation to safety improvements.



S4	h	I can provide clear and objective information on the results of safety audits and inspections.
S8	b	Our SMS is mostly a system that functions on paper and documents.
S8	d	Safety does not happen, but needs to be actively managed.
S8	е	We manage safety in this organisation mostly from things that already went wrong.

Identification and Reporting

Question Number	Sequence	Content
S3	b	Management filters what is being reported by their staff on safety issues to look better.
S4	d	All events required to be reported, are really being reported to the CAA.
S5	f	Reporting on safety issues is an easy process for the staff.

Promotion and Information

Question Number	Sequence	Content
S3	f	We provide staff with examples of safety issues that must be reported to increase awareness.
S4	С	Our safety department communicates frequently on safety objectives.
S5	а	Employee surveys or other forms of feedback provide valuable insight with respect to safety.
S5	С	Staff appreciates our safety publications.
S5	d	We frequently publish safety information to our staff.
S5	g	We always provide feedback to safety reports, irrespective of what is reported.

Training and Knowledge

Question Number	Sequence	Content
S2	а	Safety in this organisation is the sole responsibility of the Safety Department
S2	d	Creating safety is mostly an individual responsibility and not an organisational responsibility.
S2	f	Managers of units where fewer safety issues are being reported should be rewarded.
S3	С	The cost of safety (equipment, resources, etc) is often questioned by decision makers.
S3	g	In our organisation, risk has been fully eliminated by implementing the Safety Management System.
S3	j	All our staff has been provided with safety training that is applicable to the work they perform.
S8	С	When accidents do not happen, the organisation is safe.
S8	f	Its is understandable that humans make errors.
S8	h	I have received (recurrent) training on the functioning of the Safety Management System and my responsibilities in this system.



A2.5 Operations Staff level

Awareness and behaviour

Question Number	Sequence	Content
02	а	I feel insecure when reporting safety events in this organisation.
02	d	Making mistakes is not good, but I feel I can report those mistakes without being blamed.
02	е	When a decision needs to be made, and safety is affected, I will mention that to the person who is responsible.
O3	а	I witnessed (colleagues taking) shortcuts in procedures to ensure work is completed on time.
04	b	This organisation expects me to ensure deadlines and flight schedules are met at all costs.

Commitment and Engagement

Question Number	Sequence	Content
O3	b	I feel encouraged to report safety concerns or incidents.
O3	С	I never felt personally questioned when reporting something.
O3	d	There are undealt safety issues present in this organisation on which reporting is not appreciated.
O3	е	I feel safety is part of our organisational goals.
O3	f	My manager has a genuine interest on where we can improve safety

Effectiveness

Question Number	Sequence	Content
02	b	Our working methods and procedures do not consider safety as a top priority.
02	С	My tasks are performed on the basis of easily usable checklists and documented procedures.
02	f	Most internal investigations quote human error as the cause of an event.
02	g	A lot of the safety issues I see, could have been addressed in the organisation beforehand.
04	а	My manager has a good knowledge and understanding of the risks associated with my work.
04	С	During meetings that I attend, safety topics are discussed.
O5	b	I witnessed safety audits and inspections being carried out.

Identification and Reporting

Question Number	Sequence	Content
04	d	I witnessed changes in the organisation after something was reported by me or my colleagues.
04	е	I feel positive when I report a safety related event.
04	f	This organisation will not misuse safety reports for other purposes than to improve safety.
O5	е	I know several ways to report safety issues.



Promotion and Information

Question Number	Sequence	Content
O5	С	The organisation actively asks for my opinion on safety issues.

Training and Knowledge

Question Number	Sequence	Content
O5	а	I know and understand the safety policy of this organisation.
O5	d	I know what events need to be reported, and within what timeframe.
O5	f	A hazard reporting system is in place, and I have been trained on how to use it.
O5	g	The safety training that I received is applicable to the work that I perform.
O5	h	Due to my position, the safety in the organisation is something that I do not play a part in
O5	i	Training on safety is a recurring element in this organisation.

A2.6 Aircrew level

Awareness and behaviour

Question Number	Sequence	Content
A2	а	Reporting safety events in this organisation could affect my career progress.
A2	d	I receive feedback regarding my safety behaviour, such as praise or criticism for my actions.
A2	е	When a procedure has a negative impact on safety, I will mention that to the person who is responsible.
A2	f	Errors happen, but I feel I can report those mistakes without being blamed.
A3	а	Taking shortcuts in procedures to ensure an operational schedule can be met is part of how we work.
A4	b	It is difficult to get understanding from the organisation on how to mitigate the daily operational risks based on personal experience.

Commitment and Engagement

Question Number	Sequence	Content
A3	b	The people to whom I report safety concerns or incidents are encouraging me to report.
A3	С	I am tired of repeatedly reporting the same safety issue and never seeing a change.
A3	e	I feel we all (including management) work together towards a common safety goal.
A3	f	The non-flying staff has a genuine interest on where we can improve safety.
A3	g	Operational decisions based on safety arguments are never challenged.

Effectiveness



Question Number	Sequence	Content
A2	b	Most internal investigations quote human error as the cause of an event.
A2	С	My tasks are performed on the basis of easily usable checklists and documented procedures.
A2	g	A lot of the safety issues I see, could have been addressed in the organisation beforehand.
A3	d	There are undealt safety issues present on which reporting is not appreciated by this organisation.
A4	а	My manager has a good knowledge and understanding of the risks associated with my work.
A4	С	Safety topics are discussed proactively as part of a standard working method between the flight and cabin crew.
A4	g	I feel free to make operational decisions myself when I see a safety risk.
A5	b	I witnessed safety audits/inspections being carried out.

Identification and Reporting

Question	Sequence	Content
Number		
A4	d	I witnessed changes in the organisation after something was reported by me our my colleagues.
A4	е	I feel positive when I report a safety related event.
A4	f	This organisation will never use safety reports for other purposes than safety.
A5	е	I know several ways to report safety issues.

Promotion and Information

Question Number	Sequence	Content
A5	С	The organisation actively asks for my opinion on safety issues.

Training and Knowledge

Question Number	Sequence	Content
A5	а	The safety policy of this organisation reflects how we work.
A5	d	I know what events need to be reported, and within what timeframe.
A5	f	A hazard reporting system is in place, and I have been trained on how to use it.
A5	g	The training that I received gave me good knowledge on how the safety management system functions in our organisation.
A5	h	Due to my position, I feel that operational safety is not something I play a role in
A5	i	Training on safety is a recurring element in this organisation.


A3 Background information

A3.1 ICAO

A3.1.1 Annex 19

ICAO Annex 19, which focuses on Safety Management, does not explicitly define or address safety culture in its text. However, the first amendment recommended the development of a positive safety culture to support the safety management system.

ICAO Annex 19 interreacts with safety culture on the following elements:

SMS as foundation

Annex 19 establishes the foundation for implementing a safety management system (SMS) within organizations. A key element of a successful SMS is the development and nurturing of a positive safety culture. Safety culture is the shared values, beliefs, attitudes, and behaviours of individuals and groups in an organization with regard to safety.

Commitment to Safety

Annex 19 emphasizes the importance of top management commitment to safety. A strong safety culture begins with leadership's dedication to safety as a core value. This commitment sets the tone for the entire organization.

Reporting and Communication

Annex 19 encourages open and transparent reporting of safety-related concerns and incidents. A robust safety culture encourages employees at all levels to report safety issues without fear of reprisal, fostering a culture of trust and accountability.

Safety Promotion

Safety promotion is one of the components of an SMS outlined in Annex 19. It includes training, communication, and other activities aimed at promoting a positive safety culture within an organization. Safety promotion efforts are essential for creating awareness and reinforcing safety values.

Continuous Improvement

Annex 19 emphasizes the need for continuous improvement in safety performance. A strong safety culture fosters a commitment to ongoing learning and improvement, encouraging organizations to identify and address safety deficiencies proactively.

In summary, while ICAO Annex 19 does not explicitly define safety culture, it provides the framework and principles necessary for operators to develop and maintain a positive safety culture. Safety culture is an inherent part of an effective safety management system, and Annex 19 serves as a guide for aviation stakeholders to cultivate a culture of safety within their organizations.



A3.1.2 Doc. 9859

In Doc. 9859 ICAO lays out the principles for the content of the Safety Management Manual principles. The document contains some information on Safety Culture that is relevant for this project.

According ICAO, an organization's safety culture is often a reflection of the maturity of its Safety Management System. By trying to measure the actual maturity level, it is therefore possible to correlate with the existing safety culture. An increase in confidential reports and a decrease in anonymous reports is usually indicative of the organization's progress towards a positive safety culture.

ICAO states that the national culture influences the organizational culture. Although the conclusion is in relationship to the nature and scope of regulatory enforcement policies, the essence is valid and undeniable. The national culture, particularly related to how risk is perceived has an influence on the organisational (safety) culture.

Safety management requires that organizations manage the safety risks associated with organizational and operational changes. The effectiveness of this safety management process is related to the awareness of change, and the knowledge on what risks are associated with the change, the organisation and the activities. A positive safety culture therefore can be identified by a high level of change management by the organisation.

Staff contribution to safety thrives in a reporting environment that fosters trust - trust that their actions or omissions, commensurate with their training and experience, will not be punished, either directly or indirectly. In a trusted reporting system there should be evidence visible that feedback is provided to reporters, and that the reported events are not only related to predefined occurrence criteria. A high level of trust would be demonstrated by evidence that human errors from the reporter are included in the initial report from that reporter.

A3.2 Safety culture model

A model of safety culture is a conceptual framework or representation that helps organizations understand, assess, and improve their safety culture. Such models provide a structured way to analyse the various components, factors, and dynamics that contribute to an organization's safety culture.

While different models may have variations in their elements and terminology, they typically aim to capture the essential aspects of safety culture. The elements of the safety culture model proposed by EASA are summarized below.

A3.2.1 Allocation of resources

It appreciates the adequate provision of resources and time, as well as their optimal integration into production. The teams, together with staff and procedures, have an obvious safety relationship. Safety is essential when designing, designing, building, using and maintaining them.

The operational scenarios are changing, so the resources and procedures of the organisation must be adapted to the actual way in which it is worked and with the level of risk involved in a given change or activity.

Facilitators	Obstacles
 Allocate resources in a strategic way and according the operational production. Consider timetables, shifts, scheduling and limitations associated with the activity (fatigue, compatibility of work equipment). 	• Do not consider safety among the organisation's priorities (e.g. cost reduction without taking into account their impact on safety: training, equipment and resources).



- Recruitment model geared towards appropriate job profiles.
- Ensure qualification, through continuous training of adequate quality, duration and opportunity.
- Efficient change management system.
- Design of procedures to facilitate the execution of the work without having to be breached.
- Availability of adequate and sufficient material resources and equipment for production.
- Cost associated with the implementation of the measures (resources, training, equipment, procedures, etc.).
- Allocation of resources insufficient for the level of production.
- Changes in the staff training and training plan

A3.2.2 Commitment of the organisation

The commitment to safety reflects the extent to which different hierarchical levels within the organisation have a positive attitude towards safety and recognise their importance.

It seeks to measure the perception of the coherence and credibility of communication from the direction, through its commitment to safety, highlighting when it is a real concern, a bureaucratic formality or even a nuisance.

In this regard, processes such as: safety controls and assessments, investigations, audits or surveys, crucial for safety, could be perceived by management as a step for the functioning of the organisation, trying to restrict or remove them.

Management should be sensitive to employee safety concerns. The level of support the technical staff receives from their superiors and the actions to be taken will determine the extent to which staff are willing to identify problems in the future.

Facilitators	Obstacles
 Motivating and promoting culture of Safety from the management. Provision of resources for safety-related tasks (e.g. training). Established processes for continuous supervision of safety management. Continuous striking for a balance between business model, effectiveness and safety Considering safety gains as productive or efficiency gains 	 Do not consider safety among the organisation's priorities. Only investing in safety as regulatory compliance. Procedures not formalised with respect to safety management and supervision.

A3.2.3 Communication and training

Safety communication ensures that the information required in the field of safety flows and is distributed to all necessary persons within the organisation.

Safety communication should be targeted in three main areas: firstly, it must ensure that management is informed for proper safety decision-making; secondly, it must ensure that staff receive feedback on their safety notifications; and thirdly, ensure that staff are trained on the main safety aspects that affect the organisation.

The organisation shall establish appropriate information channels to ensure that safety communication is done in a clear way to the right people, thus preventing disinformation from being the source of new risks.

Facilitators	Obstacles
 Maintain continuous and active communication between management and safety department. Provide relevant and timely safety information channels for staff. Give feedback to staff after safety notifications, involving them in the actions carried out and the results of the analysis. 	 Do not consider safety among the organisation's priorities (e.g. management does not regularly participate in safety meetings). The lack of involvement of staff in safety matters. Responsibility for Safety Incidents, rather than looking for solutions. The lack of control of the flow and effectiveness of communication in safety matters



- Regularly check the flow of safety-relevant information, ensuring that it is understood and acts accordingly.
- Promote active transfer of safety knowledge and training (lessons learnt).
- Campaigns to disseminate good practices and safety experiences

The absence of channels to encourage knowledge transfer or training.

A3.2.4 Just culture

Organisations with a just culture are those in which the safety of the notifier is safeguarded, feedback after analysis and motivate reporting staff, including staff involved in in-flight data monitoring programmes (FDM). In a just culture environment, it is necessary to ensure staff trust in the organisation's reporting system by adequately protecting the information contained in the notifications and its notifiers, as well as in the FDM programme, ensuring that this information will not be used for purposes other than improving safety. As a result, a proper Just Culture will ensure continuous provision of quality information to improve safety analyses. Workers should not be exposed to any detriment by reason of the information they have supplied in the safety reports, except in cases of wilful misconduct or gross negligence.

Facilitators	Obstacles
 Establish mechanisms, procedures and protocols that clearly guarantee the protection of the notifier and ensure the deidentification of the information. Encourage employee participation and involvement in safety issues. Promote preventive and mitigating measures for the safety incidents investigated. Proactive approach to safety, acting accordingly. 	 The lack of involvement of staff in safety matters. Reactive and safety obligation response/approach. It acts as a response to a major event or because it is required by regulation. Responsibility for Safety Incidents, rather than looking for solutions. The lack of safety communication following incident analysis.

A3.2.5 Participation.

The organisation should encourage the participation of all staff in the improvement of safety, facilitating understanding of the influence of individual work on safety.

At all times, it must be recognised that safety is not the work of others, but that all staff are able to participate in safety-related activities, such as surveys, training, awareness-raising campaigns, safety reports, etc. Moreover, staff should be considered by the organisation when making changes to systems and procedures, taking into account their needs and contributions, encouraging participation in change processes.

Employees and operational staff who contribute by their involvement to safety, fostering trust in reporting at all levels.

Facilitators	Obstacles
 Promoting Just Culture, in an open and fair safety reporting environment. Provide information channels that facilitate notification and access to information for staff Active transfer of knowledge and safety training (lessons learnt). Climate of trust between management and employees when addressing safety-related aspects and proposed measures to improve it 	 Responsibility for Safety Incidents, rather than looking for solutions (shortcomings in Just Culture). The absence of channels to encourage knowledge transfer or training. Promote individualisation of the activity, limiting the analysis teams and the involvement of staff in them. The lack of awareness or lack of interest on the part of the organisation of safety developments. The lack of knowledge of safety risks induced by individual actions or by the operation/activity of the air operator.



A3.2.6 Responsibility

The responsibility of personnel for safety is the recognition of the importance of each activity and its contribution to safety, either directly or indirectly.

In this respect, it is essential to know to what extent the persons in an organisation and those responsible for it are committed to safety.

The responsibility of staff means assuming that individual actions and attitudes themselves have an impact on safety. This will foster an overview of individual contributions, especially if they are far from operational activities, such as human resources departments, economic or commercial planning, technical office, etc.

Clearly define acceptable and unacceptable	
 behaviours in the organisation (e.g. in the framework of a code of ethics or ethics). Knowledge of the persons involved of the safety risks induced by their individual actions and the operations/activities of the air operator. Building trust between management and staff when addressing safety-related aspects and proposed measures to improve it. 	 The absence of an ethical framework for action to differentiate the correct and unacceptable patterns. A generalised punitive policy. Employees are systematically and rigorously punished for errors. Back relevant safety information. The lack of knowledge of safety risks induced by individual actions or by the operation/activity of the air operator.

A3.2.7 Risk awareness and management

An organisation with awareness and risk management is one that values the commitment to safety, reflecting the extent to which staff and management are aware of the risks associated with the activity faced by the organisation. Those risks should be identified, assessed and controlled.

Sometimes, under pressure, risks can be taken that need to be assessed and mitigated to an acceptable level. Communication, training, teamwork are tools that make it possible to adapt procedures to the reality and the changes we face in the environment. Safety must be the priority of air transport and this must be reflected in the decisions taken.

Facilitators	Obstacles
 Identify hazards effectively. Carry out in-depth investigations of events, seeking to establish the root cause and contributing factors. Continuously and systematically review safety improvements, their implementation and operation or effectiveness. Knowledge of the persons involved of the safety risks induced by their individual actions and operations/activities of the air operator. 	 No efforts are made to identify hazards. Surface investigations of occurrences, which are completed in the face of the first probable cause instead of searching for the root cause. Lack of awareness and lack of interest on the part of the organisation of safety developments. The lack of assessment of the correct implementation of safety improvements. The lack of awareness on the part of staff of the safety risks induced by actions individual or for the operation/activity of the air operator. Safety data is collected but there is no analysis or action taken in this respect

A3.2.8 Teamwork

Teamwork is an essential ability to efficiently develop safety within organisations.

It is necessary for each staff member to understand the roles and objectives assigned within the organisation, and also to know the roles and objectives of the other staff. In this way, staff will agree on what needs to be done and who should do it, achieving a well-integrated and organised team.

In addition, the work teams consist of a mix of personalities, who may also be the source of risks, and who should be properly identified and mitigated through good management of staff resources (e.g. through CRM programmes).



The organisation shall promote the creation of an open and participatory environment of communication, enhancing the collaboration of different appropriate professional profiles in the development of procedures and organisational changes.

Facilitators	Obstacles
 Provide staff with the knowledge, skills and attitudes needed for the safe development of their activities, by studying concepts such as error, stress, situational awareness, communication and teamwork. Consult and involve staff in the design of processes in which they are involved. Building trust among colleagues, promoting the participation and collaboration of different professional profiles in training activities with other profiles (e.g. cabin staff with flight crew, crews of flight with air controllers, etc.) Encourage the participation of staff of different professional profiles in safety studies 	 Absence of single channels for the communication between workers Do not consider constructive comments or criticisms communicated with a view to improving safety. Promoting individualisation of activity, limiting analysis equipment and on the staff participation in them. Search responsibilities before safety incidents, rather than finding solutions. The lack of knowledge of the roles and objectives of other staff within the organisation

A3.3 Safety Culture maturity levels

Maturity models are used to assess the maturity or readiness of an organization, process, or system in achieving specific goals or outcomes. The levels or stages in a maturity model are often qualitative in nature and are used to gauge the organization's progress rather than categorize it linearly.

There is not a standardized or universally accepted maturity model with specific maturity levels for Safety Management Systems (SMS) in aviation outlined by ICAO or EASA. However, different aviation organizations and authorities, including EASA, have provided guidance on SMS implementation and improvement that can be considered as a form of maturity progression. These guidelines generally follow a phased approach to SMS implementation and enhancement.

Most maturity models have several levels, with organizations progressing from one level to the next as they improve their processes. These levels are typically labelled as Initial, Managed, Defined, Quantitatively Managed, and Optimizing. Each level represents a higher degree of maturity and capability. One commonly referenced model of safety culture is the "Heinrich and Cooper Safety Culture Model," which outlines four main levels of safety culture. EASA developed this model further in the "Safety Culture Ladder" with 5 different levels.

While these maturity models involve a progression from one stage to another, it's important to note that the relationships between these stages are not linear. The goal is to advance through the stages by building on foundational capabilities and achieving higher levels of maturity and performance.



A3.3.1 Safety Culture Ladder



Figure A3.3-1 Safety culture ladder

Level 0 (pathological)

In a pathological safety culture, safety is considered as unimportant and even senseless. Safety consciousness is not present in any layer of the organisation, from management to staff. Action is taken only after severe safety occurrences, and only consists of identifying and punishing the directly responsible person(s). The organisation does not notice, or investigates, the organisational factors that are likely to exist in the root cause of the undesired event. Human failure is likely to be seen as the only cause for events to occur. If safety already is a subject of communication, it is only after severe safety occurrences and for only a short period of time. If there already is any awareness of existing safety risks, there is in general no willingness to do something about them. Employees raising safety concerns are not appreciated, in particular when organisational goals (e.g. profit, efficiency, quality, and environment) can be affected. Safety considerations do not play an important role in the behaviour of staff. Unsafe behaviour in the benefit of (other) interests is rewarded with appreciation or praise from management, and respect from co-workers.

Level 1 (reactive)

In a reactive safety culture, safety is generally regarded as a burden that is imposed from the Civil Aviation Authority. Work-around related to documented procedures exist to reduce the perceived burden as much as possible. Safety is taken into account to meet the requirements imposed by the regulations. Action is taken only to satisfy the authority, or after a safety occurrence, in which case it mainly consists of identifying and punishing the directly responsible person(s). Typically, organizational manuals in place at the organization for operation and compliance/safety will not match the day-to-day functioning and are set up in a generic manner to address any organization. Only if the safety occurrence is severe, it becomes object of communication and measures are taken to prevent recurrence. There is only willingness to take action against an existing safety risk when it is too late. Behaviour is barely influenced by safety considerations. Unsafe behaviour in the benefit of (other) interests is allowed. Safety investigations will be aimed at covering the organizational risk and attributing blame to individuals in the form of human failure.

Level 2 (calculative)

In a calculative safety culture, safety is considered as a factor that has to be accounted for. Safety is taken into account in management's decision making, but in itself safety is not a core value. Action is only taken after a safety occurrence, and next to identifying the person(s) directly responsible, it also aims at investigating the organisational processes that might have played a role. A safety issues reporting system is installed to meet legal requirements, and is only used for gathering information in the aftermath of safety problems. There is a general awareness of the safety risks induced by the operation, and one is willing to take measures if these become too large. The behaviour of frontline employees is influenced, amongst others, by safety considerations. There are situations in which unsafe behaviour in the benefit of other interests is allowed, but in general there is a mutual expectation of safe behaviour. The unbalance in the organization regarding safety culture is typically easy to determine with one-on-one interviews.

Level 3 (proactive)



In a proactive safety culture, safety is considered as a prerequisite. Safety is a core value of the organisation and plays an important role in decision making at the management level as well as in day-to-day operations. The safety reporting system is not only used for detecting severe safety issues, but also for issues with less or no impact. Safety reports only have consequences for the person(s) directly responsible if there appears to be intentional actions or negligence. The operations are regularly assessed for safety, and safety measures are thoroughly evaluated after implementation. After a safety occurrence, the first concern of management is to prevent recurrence. After that the person(s) directly responsible often are still pointed out and punished, but responsibility is also assigned to organisational factors. There is a general awareness of the safety risks induced by the operation, and action is taken to reduce these as much as possible.

Level 4 (generative)

In a generative safety culture, safety is the core value of the organisation and is recognised as essential for the continuity of the operation. There is a clear line between acceptable and unacceptable behaviour. As long as safety occurrences are not the result of negligence or intention there are no consequences for the person(s) directly responsible. In this atmosphere of trust the safety issues reporting system is widely used and the measures resulting from safety reports are fed back to the parties involved. One is aware of the existence of unidentified safety risks, aware of the fact that the next accident is just around the corner, and keeps a constant level of vigilance with respect to these unidentified risks. Safety is decisive for the behaviour of all operational staff, and unsafe behaviour is never tolerated.

A3.4 Cultural dimensions theory

Hofstede's Cultural Dimensions Theory is a framework used to understand the differences in national cultures, and how this affects interactions between those cultures.

The Cultural Dimensions Theory was created in 1980 by management researcher Geert Hofstede who carried out an extensive survey during the 1960s and 1970s, investigating variations in values within different sectors of a global manufacturing company. The study comprised over 100,000 employees from 50 countries across three regions.

The Cultural Dimensions Theory identified six categories that can define culture:

- 1. Power Distance Index
- 2. Collectivism vs. Individualism
- 3. Uncertainty Avoidance Index
- 4. Femininity vs. Masculinity
- 5. Short-Term vs. Long-Term Orientation
- 6. Restraint vs. Indulgence

Power Distance Index

The power distance index considers the extent to which inequality and power are tolerated.

A high-power distance index indicates that a culture accepts inequity and power differences, encourages bureaucracy, and shows high respect for rank and authority.

A low power distance index indicates that a culture encourages flat organizational structures that feature decentralized decision-making responsibility, a participative management style, and emphasis on power distribution. For example, in countries with high power distance, management may expect their staff to obey without questioning their authority. Conversely in countries with low power distance there tends to be more equality between management and staff, with management more likely to accept arguments from staff or challenging their authority.

Collectivism versus Individualism



The individualism vs. collectivism dimension considers the degree to which people are integrated into groups and their perceived obligations and dependence on groups.

In individualistic societies, the emphasis lies on personal achievement and rights, prioritizing needs of oneself and one's immediate family.

Collectivism indicates that there is a greater importance placed on the goals and well-being of the group. A person's self-image in this category is defined as "We" and individuals from collectivist backgrounds often prioritize relationships and loyalty more prominently than those in individualistic cultures.

Uncertainty Avoidance Index

This dimension considers how unknown situations, uncertainty and unexpected events are dealt with. A high uncertainty avoidance index indicates a low tolerance for uncertainty, ambiguity, and risk-taking. The unknown is minimized through strict rules, regulations, etc. Both the institutions and the individuals in these societies strive to reduce uncertainty by employing vigorous rules, regulations, and similar measures.

A low uncertainty avoidance index indicates a high tolerance for uncertainty and ambiguity. The unknown is more openly accepted, and there are lax rules, regulations, etc. Individuals and cultures with low uncertainty avoidance embrace and feel at ease in situations lacking structure or in fluctuating environments.

Femininity versus Masculinity

The masculinity vs. femininity dimension is often referred to as gender role differentiation and examines the extent to which a society values traditional masculine and feminine roles.

Masculinity includes the following characteristics: an appreciation of assertiveness, courage, strength and competition. Femininity includes characteristics such as: modesty, nurturing, and concerned with the quality of life. A high femininity score suggests that traditional feminine gender roles hold significant value within that society and for example, an organisation with a high rating would probably accept a balanced work-life situation. On the other hand, an organisation with a higher masculinity score is likely to highlight goal driven rewards for staff.

Short-Term Orientation versus Long-Term Orientation

The long-term orientation vs. short-term orientation dimension considers the extent to which an organisation views its time horizon. Companies that emphasize long-term orientation prioritize future outcomes, postponing immediate success for achievements over the long term. In these cultures, values like persistence, endurance, frugality, savings, sustained growth and adaptability take centre stage. Short-term orientation shows focus on the near future, involve delivering short-term success, and place a stronger emphasis on the present than the future. Short-term orientation emphasizes quick results.

Restraint versus Indulgence

The indulgence vs. restraint dimension considers the extent and tendency for an organisation to fulfil its desires. Indulgence indicates that the organisation allows relatively easy gratification related to enjoying life and having fun. Restraint indicates that an organisation that, through a strict regulation of social norms, delays gratification of needs. In an organisation characterized by high indulgence, you may see the allocation of more funds towards how the organisation is perceived by the outside world. Conversely within a restrained organisation, the inclination leans towards being lean, buffering funds, and expenditure on practical necessities only.

A3.4.1 Advantages and Disadvantages

While Hofstede's Cultural Dimensions Theory provides a framework to help in understanding etiquette and communication across cultures, considerations are needed when recommending its application.

Advantages



Enhances cultural insight: It helps understanding of diverse cultures, fostering an appreciation for diversity.

Promotes global collaboration: It supports informed management of individuals from diverse cultures to reduce misunderstanding and conflict, while optimizing communication and collaboration.

Disadvantages

Dated Dimensions: It could be argued that the dimensions of power distance index, masculinity/ femininity, individualism/ collectivism, short term versus long term orientation and uncertainty avoidance do not fully capture the intricacies of various social cultures or their recent developments.

Cultures not individuals: Although the model aims to define cultures and not individuals, every individual is still ultimately unique, shaped by personal experiences that influences their values throughout life.

A3.5 Just culture principles

One key to the successful implementation of a 'just culture' reporting environment depends on how the organisation handles the consequence of human failure when this failure contributed to an unsafe event or non-compliance with a documented procedure or requirement.



Figure A3.5-1 Just culture and human error

Only a very small proportion of unsafe human acts are deliberate (e.g. criminal offences, substance abuse, use of controlled substances, sabotage, gross negligence). Lack of clarity where the majority of human errors exists between those two extremities of criminal offences and gross negligence, increased fear of sanctions against the reporter, particularly if they were partly or fully responsible for the reported occurrence.

Failures and 'incidents' are considered by organisations with good safety cultures as lessons that can be used to avoid more serious events. There is a strong drive to ensure that all events that have the potential to be instructive are reported and investigated to discover the root causes. Timely feedback is given on the findings and remedial actions, both to the work groups involved and to others in the organisation.

The following 6 pre-requisites, necessary to achieve a just culture, have been identified. Motivation and Promotion Staff must be motivated to report and the trend must be maintained. Ease of Reporting Reporting occurrences must be made as easy as possible and Staff must not perceive reporting as an extra task. Acknowledgement Reporters like to know whether their report was received and what will happen to it, what to expect and when.



Independence Some degree of independence must be granted to the managers of the reporting system. Feedback Feedback to reporters and other stakeholders is essential, otherwise the system will die out. Trust All of this can only happen if TRUST between reporters and the managers of the reporting system genuinely exists.

In all cases these qualities are essential to successful reporting systems. By measuring the existence of the above elements, information can be distilled on the actual safety culture in the organisation.

A3.5.1 Types of errors

Safety breaches in various systems and organizations can result from a wide range of failure modes. These failure modes represent the ways in which safety defences, safeguards, or procedures can break down or fail to prevent an incident. Understanding these failure modes is essential for improving safety and reducing the risk of incidents. Therefore each safety investigation will try to identify the failure mode.

As humans usually represent the 'system operator' level, any failure resulting in a breakdown of the system can easily be contributed to a human error. The traditional safety investigative report can be recognized by such conclusions. Today, the aim of a safety investigation is not only to identify at what level a human system operator failed, but also what underlying organisational factors exist.

To stop a safety investigation at the level of human error would be considered an incomplete conclusion. In a just culture it is accepted that humans make errors, and recognized that the organisation needs to ensure sufficient mitigations exist to prevent these errors from developing into safety events.

Therefor the existence of organisational contributing factors in safety investigations, such as the failure modes described below, is an indicator of a positively developed safety culture.

Procedural Failures

Inadequate or poorly designed procedures can contribute to safety breaches. This includes unclear instructions, incomplete documentation, and procedures that are difficult to follow.

Communication Failures

Inadequate communication, including miscommunication or lack of communication between individuals or teams, can result in safety breaches. Failure to convey critical information or misunderstandings can lead to incidents.

Inadequate Training

Insufficient training and education of personnel can lead to safety breaches. If employees are not adequately prepared to perform their tasks safely, errors and incidents can occur.

Lack of Supervision

Inadequate supervision or oversight can result in safety breaches, as employees may not adhere to safety protocols when they believe they are not being monitored.



Cultural Failures

Both the organizational and national culture play a significant role in safety. A culture that does not prioritize safety, tolerates shortcuts, or discourages reporting of safety concerns can contribute to safety breaches.

Regulatory Compliance Failures

Failure to comply with regulations, standards, or legal requirements can lead to safety breaches and legal consequences.

Operational Failures

Mistakes in daily operations, such as incorrect configurations, improper maintenance, or scheduling errors, can contribute to safety breaches.

A3.6 IATA Safety Culture

IATA recognizes that the global commitment to safety has increased significantly with the implementation of SMS. The development of a positive safety culture is envisioned as a three-aspect approach.



Figure A3.6-1 Three aspect approach to safety culture development

How people feel can be described as the 'safety climate' of the organization, which is concerned with the individual and group values, attitudes and perceptions. What people do concern their safety-related actions and behaviours. How the organisation operates relates to the policies, procedures, regulation, organizational structures, and the management systems.

Positive Safety Culture	Negative Safety Culture
One where the people in the organization believe in the value of safety, and are personally committed to safe working practices. It is one where these people take personal action to ensure safety in their workplace and hold others accountable for their own actions. And, finally, it is one where their actions are guided by a clear code, and supported by a non-punitive structure.	One where there is little or no commitment to safety at any level, where policies and procedures are not applied, where people may be afraid of rocking the boat and pointing out dangerous situations, and the structure aims to limit statistical occurrences rather than remedy potentially unsafe practices and prevent incidents.



To measure safety culture, IATA identifies the following different drivers:

- 1. Communications
- 2. Just Culture
- 3. Learning Organization
- 4. Management Commitment
- 5. Policies, Processes and Procedures
- 6. Reporting and Feedback
- 7. Safety Awareness
- 8. Senior Management Commitment

IATA recommends a survey tool, such as the SMART Safety Survey Dashboard, to quantify and measure the safety culture.

A3.7 Safety Management International Collaboration Group

The SM-ICG developed an Industry Safety Culture Evaluation Tool and guidance document. Although the title suggests that the tools aims to assess the safety culture, the documents clarifies that it does not assess the safety culture in a quantitative way.

The method contains predefined questions that are posed during an interview. For this interview, two organisational levels are used: management and workforce. The answers are translated into three different ratings from green, orange to red, adding to the possibility of bias. The likelihood of questions being skipped further downstream in the process is high.

The process of collecting information is considered time consuming and presents only a limited view. In addition, the system is prone for bias and results are difficult to reproduce.

The method defines safety culture in six high-level characteristics and describes indicators for these.

Commitment

The extent to which every level of the organization has a positive attitude towards safety and recognizes its importance. Top management should be genuinely committed to maintaining a high level of safety and motivating the workforce to do so as well.

Indicators:

- Management commitment
- Personal commitment
- Investment in safety

Justness ("Just Culture")

The extent to which safe behaviour and reporting of safety issues are encouraged or even rewarded and unsafe behaviour is discouraged.

Indicators:

- Evaluation of (un)safe behaviour
- Perception of evaluation
- Passing of responsibility



Information

The extent to which information is distributed to the right people in the organization. Work-related information must be communicated in the right way to the right people.

Indicators:

- Communication of safety-related information
- Safety reporting system
- Willingness to report
- Consequences of safety reports

Awareness

The extent to which the workforce and management are aware of the risks for themselves and for others implied by the organization's operations. The workforce and management should be constantly maintaining a high degree of vigilance with respect to safety issues.

Indicators:

- Awareness of job-induced risk
- Attitude towards unknown hazards
- Attention to safety

Adaptability

The extent to which the workforce and management are willing to learn from past experiences and are able to take whatever action is necessary in order to enhance the level of safety within the organization.

Indicators:

- Actions after safety occurrences
- Proactiveness to prevent safety occurrences
- Employee input

Behaviour

The extent to which every level of the organization behaves to maintain and improve the level of safety. From the management side, the importance of safety should be recognized and everything needed to maintain and enhance safety should be put in place.

Indicators:

- Working situation
- Employee behaviour with regard to safety
- Mutual expectations and encouragement

To describe the maturity level of each of these characteristics, the method uses a linear maturity rating similar to the model used in appendix A3.3 - Safety Culture maturity levels.



A4 Example of invitation leaflet





A5 Example Confidentiality Agreement

Party 1 - (Assessed organisation)	Party 2 - (Tool user//Assessing organisation)
Company name:	Company name:
Registered address:	Registered address:
Name:	Name:
Title	Title
Date:	Date:
Signature:	Signature:

Purpose:	Using the EASA SMART method for an assessment on the safety culture of Party 1
Confidentiality period:	5 years from the date of disclosure
Governing law:	As per the country of residence of Party 1
Dispute Resolution:	Litigation in courts of country of residence of Party 1

A5.1 Terms

1. What is Confidential Information?

- a) **Confidential Information** means information that is disclosed:
 - (i) by a party to this Agreement (the **Discloser**) or on the Discloser's behalf by its authorised representatives or its Affiliates,
 - (ii) to the other party to this Agreement (the Receiver), its Affiliates or Permitted Receivers, and
 - (iii) in connection with the Purpose.
- b) Affiliates means any:
 - (i) entity that directly or indirectly controls, is controlled by, is under common control with or is otherwise in the same group of entities as a party to this Agreement, or
 - (ii) fund or limited partnership that is managed or advised, or whose general partner or manager is managed or advised, by the Receiver or its Affiliate or which the Receiver or its Affiliate controls.
- c) **Permitted Receivers** means the Receiver's Affiliates and the Receiver's or its Affiliates' officers, employees, members, representatives, professional advisors, agents and subcontractors.
- d) Confidential Information does not include information that is:
 - (i) in the public domain not by breach of this Agreement,
 - (ii) known by the Receiver or its Permitted Receivers at the time of disclosure,
 - (iii) lawfully obtained by the Receiver or its Permitted Receivers from a third party other than through a breach of confidence,
 - (iv) independently developed by the Receiver, or
 - (v) expressly indicated by the Discloser as not confidential.

2. Who can I share it with?

- a) The Receiver may share the Confidential Information with its Permitted Receivers, but only if they:
 - (i) need to know it, and only use it, for the Purpose, and
 - (ii) have agreed to keep it confidential and restrict its use to the same extent that the Receiver has.
- b) The Receiver is liable for its breach of this Agreement and any act or omission by a Permitted Receiver which would constitute a breach of this Agreement if it were a party to it.



c) The Receiver may share the Confidential Information if required by law or regulation but must promptly notify the Discloser of the requirement if allowed by law or regulation.

3. What are my obligations?

The Receiver must:

- a) only use the Confidential Information for the Purpose,
- b) keep the Confidential Information secure and confidential and only disclose it as allowed by this Agreement,
- c) promptly notify the Discloser if it becomes aware of a breach of this Agreement, and
- d) within thirty days of the Discloser's request, take reasonable steps to destroy or erase any Confidential Information it holds, except the Receiver may retain copies of Confidential Information:
 - (i) that are securely stored in archival or computer back-up systems,
 - (ii) to meet legal or regulatory obligations, or
 - (iii) in accordance with bona fide record retention policies,
 - (iv) subject to this Agreement's terms.

4. How long do my obligations last?

- a) The Receiver's obligations in relation to Confidential Information start on the date Confidential Information is disclosed and last until the end of the Confidentiality Period.
- b) A party may terminate this Agreement with thirty days' prior written notice, but termination will not affect the parties' obligations in relation to Confidential Information disclosed before termination, which continue until the Confidentiality Period expires.

5. Other important information

- a) **No warranty**. All Confidential information is provided "as is" and with all faults. Neither party makes any warranties, express, implied, or otherwise, regarding the accuracy, completeness, or performance of its Confidential Information.
- b) No License. Nothing in this Agreement is intended to grant the receiving party a license or right to any of the disclosing party's rights (including without limitation, any intellectual property rights) or the disclosing party's Confidential Information, except as expressly set forth in this Agreement.
- c) **Notices**. Formal notices under this Agreement must be in writing and sent to the email addresses on the Agreement's front page as may be updated by a party to the other in writing.
- d) **Third parties**. Except for the Discloser's Affiliates, no one other than a party to this Agreement has the right to enforce any of its terms.
- e) **Entire agreement**. This Agreement supersedes all prior discussions and agreements and constitutes the entire agreement between the parties with respect to its subject matter and no party has relied on any statement or representation of any person in entering into this Agreement.
- f) Amendments. Any amendments to this Agreement must be agreed in writing.
- g) **Assignment**. No party can assign this Agreement to anyone else without the other parties' consent.
- h) Waiver. If a party fails to enforce a right under this Agreement, that is not a waiver of that right at any time.
- i) **Equitable relief**. The Discloser may seek injunctive relief or specific performance to enforce its rights under this Agreement.
- j) **Counterparts**. This Agreement may be executed in any number of counterparts and this has the same effect as if the signatures on the counterparts were on a single copy of this Agreement.
- k) **Governing Law**. The Governing Law (excluding any conflicts of laws principles) applies to this Agreement and related issues.
- I) **Dispute Resolution**. Any dispute arising in connection with this Agreement must only be resolved by the Dispute Resolution Method.