Safety
Regulation
Division

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Safety Culture & Safety Management Systems in Ireland

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Executive Summary

IAA Survey of Safety Culture and Safety Management Systems in Ireland

Background and Wider Context

The Safety Regulation Division (SRD) of the Irish Aviation Authority (IAA) regulates the safety standards of the Irish civil aviation system. Safety is the fundamental principal which guides the work of the IAA. The SRD continuously seeks ways to improve it.

The SRD discharges its regulatory responsibilities through an oversight programme of inspections and audits of industry stakeholders. This includes overseeing their Safety Management Systems (SMS).

Regulatory audits focus on the more *formal* aspects of the SMS. The various components such as policy, procedures, records and internal company audits are all examined. Compliance with safety rules and regulations is influential in lowering the risk of accidents.[1]

Whereas the more *formal* aspects or the 'nuts and bolts' of the SMS is well monitored by the regulatory authority, it was felt that there was a need to explore some of the '*softer'* cultural issues – beliefs, values, attitudes – and the impact of the introduction of SMS on safety *culture* in organisations. There is a considerable body of evidence showing a link between mature safety culture and positive safety behaviour. This survey was initiated to have a view of both the safety culture and the safety systems across the entire aviation sector in Ireland. This report tabulates the results and is being made available to the aviation industry.

Survey Objectives

The International Civil Aviation Organisation (ICAO) requires the establishment of State Safety Programmes (SSPs) and the implementation of SMS in the aviation sector in order to achieve ever greater levels of safety in civil aviation. (ICAO standards require that its 190 member States develop and implement SMS programs to achieve an acceptable level of safety in aviation.)

[1] Didla, S., Mearns, K., and Flin, R. (2009) *Safety citizenship behaviour: a proactive approach to risk management* Journal of Risk Research Vol. 12, Nos. 3–4, April–June 2009, 475–483

The primary objective of the survey is the continuous improvement of safety culture and safety management systems in the aviation sector consistent with the ICAO objectives.

The IAA SRD collected data which provided an overview of the maturity of safety culture throughout the aviation sector. Having collated such data it will be possible to measure and consequently manage the overall safety process, keeping in mind the adage that *'you cannot manage what you cannot measure'.* Ultimately it is hoped that the analysis of the data will identify areas of strength and areas needing development, thus assisting in identifying a pathway of continuous improvement for all stakeholders, be they organisations, individuals or regulators.

Survey Methodology

The survey was open to all members of the aviation industry who wished to participate - including personnel from airlines, aircraft maintenance, ground handling and engineering service companies. Enterprise Ireland figures suggest that there are approximately 11,000 to 12,000 people employed in aviation-related activities in Ireland.

The IAA drafted a questionnaire of 35 questions / statements covering key aspects of safety culture and safety management systems such as general awareness of safety statements, company commitment to safety, level of support and recognition for safety within the organisation, and safety training.

The survey was sent to all organisations in the aviation sector, including airlines, aircraft maintenance, ground handling and engineering service companies. It was also highlighted on the IAA website.

The survey was completed by, amongst others, cabin crew, flight crew, air traffic controllers, management, training staff, safety managers, operational staff, support staff and administrative staff. Participation in the survey was voluntary.

The IAA received 1,044 responses to this survey – a much higher response than anticipated given that it was a voluntary process. The IAA is pleased with the high response rate and is satisfied the data provides a reasonable representation of the overall industry.

In this report, the tabulated data and observations drawn from the survey are presented. It provides an overview of the results; summary statistics for each question / statement in the survey instrument; and also gives a synopsis of the free-text comments (230 of the 1,044 respondents provided such additional comments.)

Survey Results

The survey has provided the IAA with valuable information and the results will be used over the next two years to help prioritise the tasks of the Authority in the development of safety culture and SMS promotional material and in the performance of safety oversight of the aviation industry in Ireland.

The IAA has deliberately refrained from publishing a long list of conclusions. Instead it has published in detail the tabulated data and invites all interested stakeholders to review these tables and establish if they can identify any areas which they may need to address in their own organisations.

It is important to emphasise, however, some pertinent points about the survey results.

- Respondents demonstrated a strong knowledge of Safety Management Systems and their own personal role in ensuring an effective system.
- There is evidence of a generally positive safety culture throughout the industry, representing a firm foundation for safety culture.
- All respondents, from management to line operations, state their commitment to safety and see safety as a personal responsibility.
- Respondents understand the need to report incidents and learn from them as an organisation, to improve safety.

As one would expect, the results also highlight areas where improvements can be made. For example:

- The need for effective and frequent communication between operational staff and management is paramount in dealing effectively with safety concerns and the responses suggest that there is scope for improvement in this area.
- There is a strong personal belief in the importance of hazard identification and reporting however the responses indicate that subsequent risk management should happen more swiftly and effectively.

Note on ICAO Safety Management System Framework

In the design of the survey and the presentation of this document, the questions were matched with the ICAO Safety Management System framework (i.e., 4 components, each with various associated elements – safety policy and objectives; safety risk management; safety assurance; and safety promotion.) This approach also dovetails into the State Safety Programme which shares some SMS components. Needless to say it is essential that the SSP and organisations' SMS complement one another.

Conclusion

From an overall safety perspective, it was reassuring to have so many respondents to the survey. The time taken to participate in and complete this survey is greatly appreciated. Thank you.

Whilst this document represents the results of this Safety Culture survey, it hopefully promotes dialogue between individuals, their employers and the IAA on how Safety culture and SMS can be continuously improved. The IAA will welcome this development and will participate in and facilitate any resulting safety initiatives.

We all have our part to play when it comes to safety, a fact appreciated by the majority of respondents to our survey. In this vital area of safety, the words of Mahatma Gandhi have special resonance: *'You must be the change you want to see in the world'*.

Safety Culture

Evolutionary Journey of Aviation Safety

Airlines are considered to be High Reliability Organisations (HROs), in other words they are organisations who have fewer than their 'fair share' of accidents. [2] Statistically aviation is viewed as being the safest mode of transport e.g. Transport Trends (2009) [3] concludes that 'in terms of fatalities per passenger kilometre, air continues to be the safest mode of transport.'

Unfortunately it was not always so, especially in the early days. Along the evolutionary journey of aviation safety there has been many major milestones. These significant events have acted as catalysts to change and development. Regrettably many of these events were paid for in the cruellest currency of all, people's lives. How and why this impressive successful metastasis has come to fruition has been the subject of much study. In recent years it is fair to say there has been a shift in focus from the individual to the organisation.

To this end much research has informed and supported a practical application with the development and implementation of Safety Management Systems. A recent *Flight International* magazine article [4] credits changes in safety management thinking and action with the huge improvement in safety in the last five years of the twentieth century and the first five of this one. It explains how 'rather than basing safety improvement strategies on reaction to individual accidents as they occurred, policy formulation was able, for the first time, to be driven by hard data gathered over extended periods of time. So precise areas of risk could be identified, quantified and prioritised for detailed treatment.'

ICAO standards require that its 190 member States develop and implement SMS programs to achieve an acceptable level of safety in aviation operations. Ireland as one of the signatory states has followed suit in enforcing this requirement.

The Irish Aviation Authority Safety Regulatory Department (SRD) effects its regulatory responsibilities through an oversight programme of inspections and audits of Irish aviation service providers which includes overseeing their SMSs.

[2] Reason, James T. (2008) *Managing the Risks of Organisational Accidents*, Ashgate Publishing Ltd., Gower House, Croft Road, Aldershot, Hants GU11 3HR, England.

[3] Transport Trends (2009) http://www.dft.gov.uk/pgr/statistics [Accessed: 28 September 2010]

[4] Learmount, David (2010) 'Out of Ideas' *Flight International* 3 August [Online] Available at: http://www.flightglobal.com/articles (Accessed: 25 August 2010).

These audits deal with the policies, procedures and processes of SMSs. While the 'nuts and bolts' of the SMSs are being examined it was felt there was a need to explore the softer cultural aspects of beliefs, values and attitudes. Indeed one of the challenges for any organisation implementing SMS is to assess and develop a positive safety culture. [5] It was this challenge that motivated the IAA to conduct this survey.

Learning the hard way

The first known aviation fatalities were the deaths of balloonists Pilatre de Rozier and Pierre Romain on the 15th June 1785. While the first powered fixed-wing aircraft fatality in history occurred at Fort Meyer, Virginia on the 17th September 1908 when Lt. Thomas Selfridge was killed while a passenger in a plane piloted by Orville Wright [6].

In more recent times the Tenerife disaster on the 27th of March 1977 remains the deadliest accident in aviation history with the highest number of airliner passenger fatalities. In this disaster, 583 people died when a KLM Boeing 747 attempted take-off and collided with a taxiing Pan Am 747 at Los Rodeos. Pilot error, communications problems, fog, and airfield congestion (due to a bombing and a second bomb threat at another airport) all contributed to this catastrophe. In the past aviation safety improvement was characterized by a fly-crash-fix-fly approach. We would fly airplanes, have the occasional unfortunate crash, and we would investigate the cause(s) to prevent it happening again.

Until recently the basic methodology had changed little, the primary method of research concerning the mitigation of risk in aviation has been reactive – post-event analyses of incidents and accidents[7].

One of the turning points in post event analysis occurred following TWA flight 514 on the 1st December 1974 from Indianapolis and subsequent diversion to Washington's Dulles Airport.

[5] Stolzer, Alan J., Halford, Carl D., Goglia, John J., (2008) *Safety Management Systems in Aviation* Ashgate Publishing Limited, Gower House, Croft Road, Aldershot, Hampshire GU11 3HR, England.

[6] Wiegmann, Douglas A. and Shappell, Scott A. (2003) *A Human Error Approach to Aviation Accident Analysis* Ashgate Publishing Ltd., Wey Court East, Union Street, Farnham, Surrey GU9 7PT, England.

[7] Stolzer, Alan J., Halford, Carl D., Goglia, John J., (2008) *Safety Management Systems in Aviation* Ashgate Publishing Limited, Gower House, Croft Road, Aldershot, Hampshire GU11 3HR, England.

The Boeing 727 crashed into a mountain 25 miles from Dulles destroying the aircraft and killing all 92 people on board. However the significance lays in the fact that the National Transportation Safety Board (NTSB) investigation revealed a similar type event had occurred 6 weeks previously with a more fortuitous outcome. The carrier involved had implemented an anonymous safety awareness program, which resulted in the carrier becoming aware of the occurrence.

Subsequently a notice to its flight crews was issued in order to preclude the recurrence of a near-fatal misinterpretation of an approach clearance. The NTSB reported that in retrospect it was most unfortunate that the incident was not subject to uninhibited reporting that could have resulted in timely dissemination of the safety message. Consequently in 1976 the Federal Aviation Administration (FAA) funded, National Aeronautics and Space Administration (NASA) administered Aviation Safety Reporting System (ASRS) was set up. In 2009 the ASRS received 48,946 voluntary reports.

Human Factors

Errare humanum est – to err is human (Plutarch, c 100 AD).

As aircraft became more reliable the role played by human error came to the fore as playing a significant role in accident causation. In recent times the number of accidents attributable to catastrophic failure of the aircraft is very infrequent. Therefore it was felt if the aviation industry was to realize a further reduction in the aviation accident rate, the *human causes* of accidents needed to be more effectively addressed. [8]

Following the Tenerife accident in 1977 a raft of studies directed primarily at the Human Factors arena was undertaken and disseminated throughout the aviation industry. Today commercial pilots, cabin crew and engineers are all required to undertake and pass Human Factors training modules.
It is by education and training that aviation workers can be made aware of possible risks and thereby become more alert to warning signs that can be dealt with appropriately and safely.

[8] Wiegmann, Douglas A. and Shappell, Scott A. (2003) *A Human Error Approach to Aviation Accident Analysis* Ashgate Publishing Ltd., Wey Court East, Union Street, Farnham, Surrey GU9 7PT, England.

For example a pilot who has not undertaken human factors training, suffering from the early but brief stages of hypoxia will be unaware of the insidious gradual deterioration in personal performance which results in the loss of ability for critical self appraisal. If no corrective action is undertaken swiftly in this scenario then it's likely that the loss of the pilot and his / her charges will be the most likely outcome.

This was illustrated in the case of the famous golfer Stewart Payne who was among 4 passengers and 2 flight crew who lost their lives on the 25th October 1999, when their Learjet 35 crashed near Aberdeen, South Dakota. The National Transportation Safety Board determined that the probable cause of this accident was incapacitation of the flight crew members as a result of their failure to receive supplemental oxygen following a loss of cabin pressurization, for undetermined reasons.

Whether the root cause was a technical malfunction of the supplemental oxygen system or delayed reaction by the flight crew will never be determined, but one thing is certain - forewarned is forearmed. Needless to say the topics for Human Factors curricula are extensive, ranging from physiology, cognitive perception, memory limitations, stress, judgement etc.

The mitigation of risk factors provided by such education is all the more critical when we consider that, 'for as long as the human being is part of the aviation system, human capabilities and limitations will influence safety.' We need to keep in mind that we are firstly human beings, not pilots, air traffic personnel or engineers, etc., and this automatically means we all suffer from human frailties of one sort or another. [9]

A more recent perspective on human error proffered by the renowned Professor of Human Factors and Systems Safety; Sidney Dekker explains how the old view sees human error as a cause of incidents, while the new view sees human error as the symptom. If one is to then address or prevent incidents, the corrective course of action in the first instance will possibly involve suspension, retraining, or prosecution of the individual. In the later newer view, the system needs to be addressed in order to effect improvement and eliminate possible future re-occurrence.

Consequently he then argues that rather than individuals *versus* systems, we should begin to understand the relationships and roles of individuals *in* systems.[10]

[9] Campbell, R.D. and Bagshaw, M. (1991) *Human Performance and Limitations in Aviation* BSP Professional Books, Osney Mead, Oxford OX2 OEL

[10] Dekker, Sidney (2007) *Just Culture Balancing Safety and Accountability* Ashgate Publishing Ltd., Wey Court East, Union Road, Farnham, Surrey GU9 7 PT England.

There is no doubting the fact that the part played by Human Factors is still highly significant, especially when the following statement from the UK CAA Global Fatal Accident Review 1997–2006 is considered, 'two-thirds of all fatal accidents involved a flight crew related *primary* causal factor and 7% involved an aircraft related *primary* causal factor.' [11] However what is changing is the perspective taken in relation to such human factors.

Another notable development in recent times has been the distinction between genuine human error and wilful acts. Some human factors professionals and researchers, such as Professor James Reason, have begun to distinguish between unsafe acts that are motivation driven (i.e. violations) and those that are truly cognitive in nature (i.e. errors). Such a distinction is indeed important when it comes to developing interventions for reducing unsafe acts and improving safety. [12]

Evolution from the Individual to the Organisation

In attempting to track the evolutionary journey of aviation safety from its origins to present times, it becomes evident that the focus has shifted from the aircraft to the individual and more recently onto the organisation (figure 1).

Today, neither investigators nor responsible organisations are likely to end their search for the causes of an organisational accident with the mere identification of 'sharp-end' human failures. Such unsafe acts are now seen more as consequences than as principle causes. [13] Blaming people for their errors – though emotionally satisfying – will have little effect on their future fallibility.[14]

This progression over time from technical failures to human error and finally organisational issues is also reflected in the International Civil Aviation Organisation (ICAO) Safety Management Manual (SMM) Doc 9859. This manual outlines a principled approach to the implementation of an SMS by aviation service providers and the progressive implementation and maintenance of civil aviation State Safety Programmes (SSPs), with emphasis on the role Civil Aviation Authorities (CAAs) play in supporting SMS implementation by service providers.

[11] Civil Aviation Publication (CAP) 776 (2008) *Global Fatal Accident Review 1997–2006* www.caa.co.uk

[12] Wiegmann, Douglas A. and Shappell, Scott A. (2003) *A Human Error Approach to Aviation Accident Analysis* Ashgate Publishing Ltd., Wey Court East, Union Street, Farnham, Surrey GU9 7PT, England.

[13] Reason, James, (1998) *Achieving a safe culture: theory and practice* Work & Stress, 1998, VOL. 12, NO. 3 293-306

[14] Reason, James (2008) *Managing the Risks of Organisational Accidents*, Ashgate Publishing Ltd, Gower House, Croft Road, Aldershot, Hants GU11 3HR, England

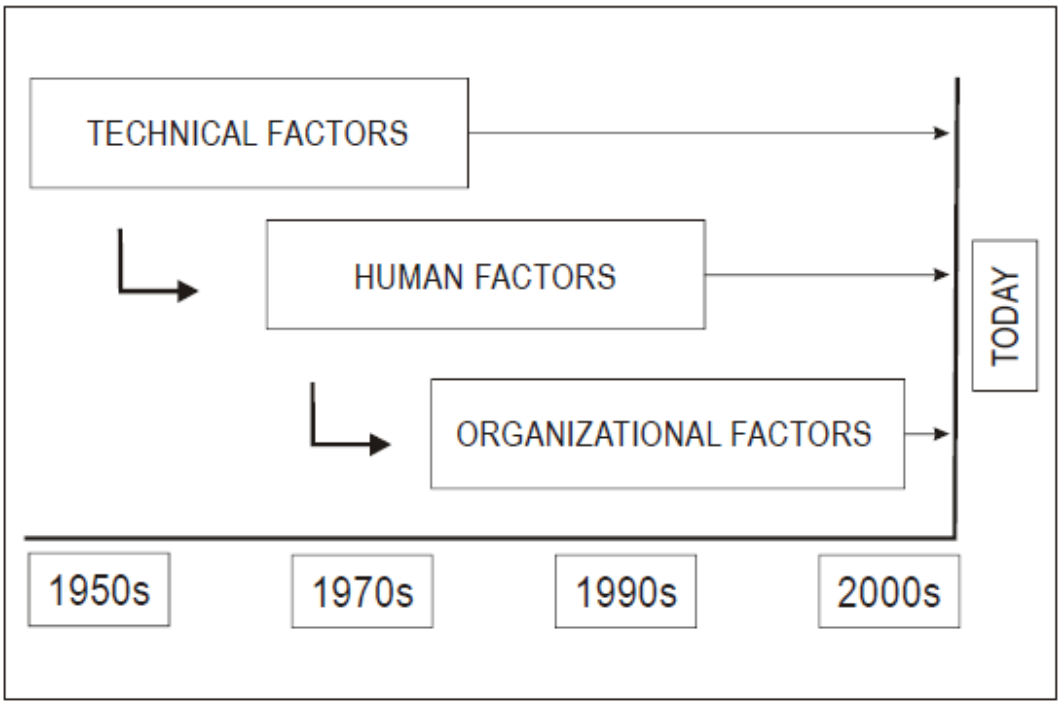


*Figure 1: The Evolution of Safety Thinking (*Source ICAO SMM DOC 9859)[15]

Similarly some research into the history of safety research and improvement has divided it into three phases. In the first phase, safety was seen as a technological issue and improvement was sought by developing safer machines and equipment. The primary aim of the second phase was the individual, with measures directed at upgrading employees' skills and efforts to increase employee motivation. The third phase of safety research starts around 1980 and is characterised by an increased focus on the organizational conditions for safety, especially the role of management systems. [16]

Much research has been conducted in relation to organizational accidents. Highly significant contributions to this body of work have been made by the aforementioned Professor James Reason. He developed the concepts of active failures and latent conditions. Active failures are the errors and violations of those at the human-system interface and latent conditions arise from the failure of designers, builders, managers and maintainers to anticipate all possible scenarios.
All of these concepts along with the other integral factors that come into play in any accident sequence are aptly demonstrated in Reason's *Swiss Cheese* model (figure 2). A more detailed description of the component parts has been quoted from Reason 1998.

[15] ICAO http://www.icao.int

[16] Antonsen, Stian (2009) *Safety Culture: Theory, Method and Improvement.* Ashgate Publishing Ltd., Wey Court East, Union Road, Farnham, Surrey GU9 7PT, England.

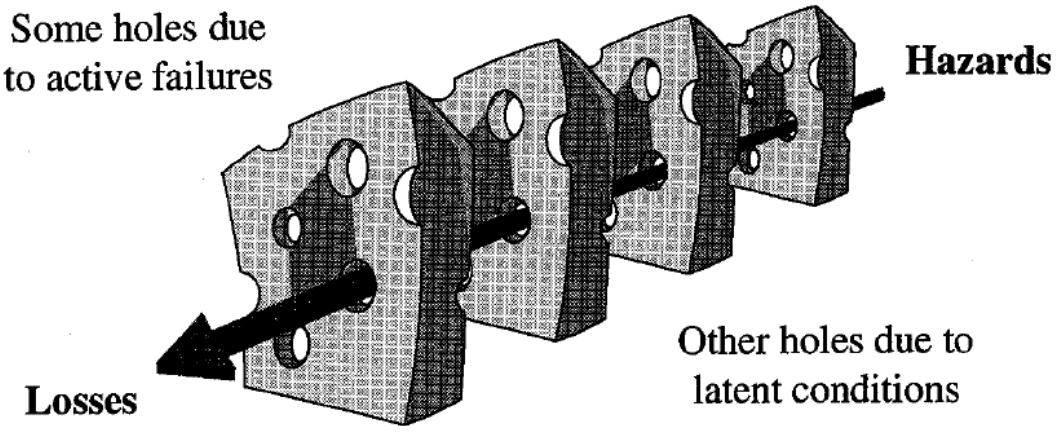


Figure 2 The 'Swiss cheese' model of in-depth-defences.

One way of representing the aetiology of an organizational accident is by the 'Swiss cheese' model shown. Here, the defences, portrayed as cheese slices, are shown as intervening between the local hazards and potential losses. Each slice of cheese represents one layer of defence.

In an ideal world, all of these layers would be intact. In reality, however, each layer has holes or gaps. These gaps are created by active failures - the errors and violations of those at the human-system interface and by latent conditions arising from the failure of designers, builders, managers and maintainers to anticipate all possible scenarios. The holes due to active failures are likely to be relatively short-lived, while those arising from latent conditions may lie dormant for many years until they are revealed by regulators, internal audits or by incidents and accidents.[17]

Having reviewed Reason's Swiss cheese model, it is easy to see how it could be concluded that aviation in particular is subject to the old saying that a chain is only as strong as its weakest link. [18] Summed up another way, crashes always involve a seeming conspiracy of disparate elements that may be innocent enough when present alone but make a fatal cocktail when mixed.

A more recent development in safety philosophy has been the bow tie analysis (see Figure 3). A bow tie is a risk assessment tool which is commonly used in other safety critical industries, such as petrochemical, mining and rail. It supplements other risk techniques and provides an easily understood visual tool to identify hazards, the top event, threats, and consequences if the top event occurs, barriers, recovery measures, escalation factors and their controls. [19]

[17] Reason, James, (1998) *Achieving a safe culture: theory and practice* Work & Stress, 1998, VOL. 12, NO. 3 293-306

[18] Waikar, Avinash and Nichols, Phillip (1997) *Aviation safety: a quality perspective* Disaster Prevention and Management Volume 6 · Number 2 · 1997 · pp. 87–93.

[19] www.canso.org

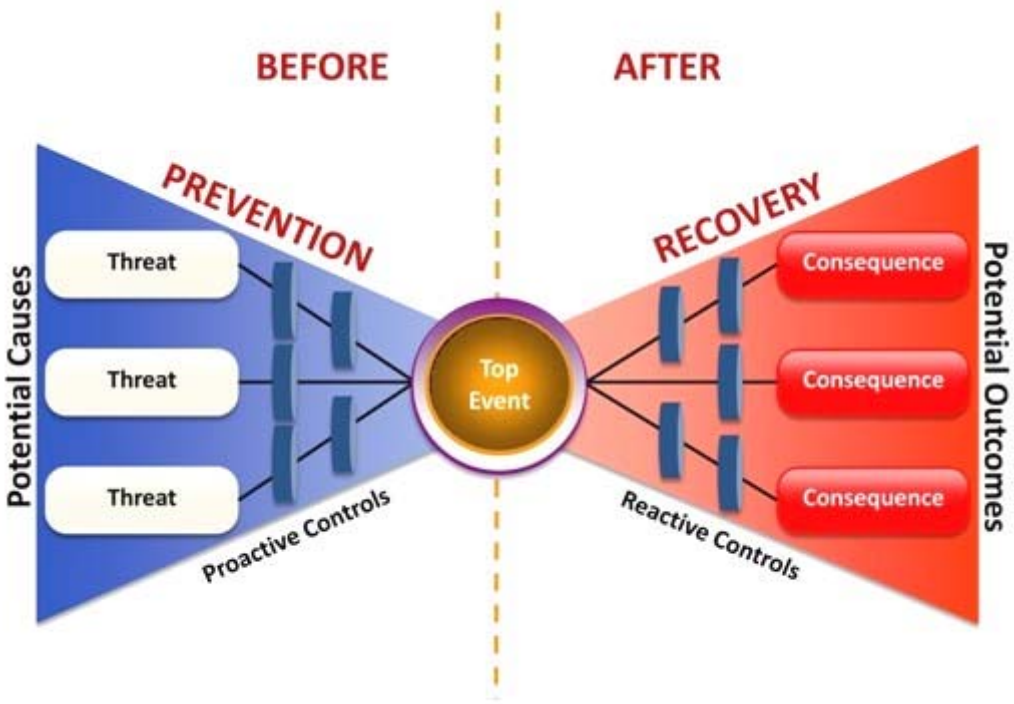


Figure 3. Bow Tie Risk Assessment Tool

Organisational Culture

Having realised the emerging role of organisations in accidents and more significantly their role in preventing them, it is necessary to explore the area of Organisational Culture, but what is Organisational Culture?

Among some of the significant academic contributors to the development of this field are Deal and Kennedy, who define a firm's culture as "the way we do things around here", while Peters and Waterman defines it as "a dominant and coherent set of shared values conveyed by such symbolic means as stories, myths, legends, slogans, anecdotes and fairytales". Organisational Culture has also been explained as the social glue that helps hold the organisation together by providing appropriate standards for what employees should say or do.

Culture can be categorised as being weak or strong. In a strong culture the organisation's core values are both intensely held and widely shared. A strong organisational culture increases behavioural consistency. Interestingly a strong culture can be a disadvantage when the organisation needs to change or diversify. [20]

[20] Robbins, Stephen P. (2001) *Organisational Behaviour* Prentice Hall Inc., New Jersey.

The organisational sociologist Geert Hofstede who has made significant contribution to the body of knowledge on organisational culture and it's interaction with national culture describes organisational culture as 'the collective programming of the mind which distinguishes the members of one group from another. [21] [22] [23]

Culture can be defined as the values beliefs, and norms shared by a group of people that influence the way they behave. We are all influenced by cultural issues. There are a number of characterisations of desirable cultures such as; informed culture, flexible culture, reporting culture, learning culture and just culture.[24]

Culture is what everyone in the workplace believes about the company, themselves and safety. These opinions, assumptions, values, perceptions, stereotypes, rituals, leadership, and stories all mesh together to form the culture which translates into policies, procedures and accidents/incidents. There are many factors invisible from the surface, the taboos, assumptions and norms which are never written down. These are the true forces behind safety behaviour[25].

Another important aspect is the interconnectedness of organisational culture, strategy and design. Corporate culture should reinforce the strategy and structural design that the organisation needs to be effective within its environment. [26]

The American sociologist Ron Westrum who has specialised in organisational dynamics in the aviation field puts it very eloquently when he says that *'culture is to an organisation what personality is to an individual, and every organisation develops a characteristic way of doing things'*.[27]

[21] Safety Culture in ATM Toolkit (2010) www.Skybrary.aero

[22] Hofstede, Geert (2001). *Culture's Consequences: comparing values, behaviors, institutions, and organizations across nations* (2nd ed.). Thousand Oaks, CA: SAGE Publications.

[23] Hofstede, Geert; Hofstede, Gert Jan (2005). *Cultures and organizations: software of the mind* (Revised and expanded 2nd ed.). New York: McGraw-Hill.

[24] Stolzer, Alan J., Halford, Carl D., Goglia, John J., (2008) *Safety Management Systems in Aviation* Ashgate Publishing Limited, Gower House, Croft Road, Aldershot, Hampshire GU11 3HR, England.

[25] Reese, Charles D. (2003) *Occupational Health & Safety Management: A Practical Approach,* Lewis Publishers, CRC Press LLC, 2000 N.W. Corporate Blvd. Boca Raton, Florida 33431.

[26] Daft, Richard L. (2001) *Organizational Theory and Design* South Western College Publishing.

[27] Reason, James, Parker, Dianne, and Lawton, Rebecca, (1998) Organizational controls and safety: The varieties of rule-related behaviour Journal of Occupational and Organisational Psychology (1998), 71. 289-304

Safety Culture

According to the little Oxford Dictionary, Safety is 'freedom from danger or risks'. Fundamentally there is a basic need for safety as outlined by 'Maslow's (1943) hierarchy of needs that security is a basic human instinct. Therefore, it comes as no surprise that protecting oneself from danger and risks is an important driver of human behaviour. [28]

Figure 4: Maslow's Hierarchy of Needs.

So what is safety culture? In order to better understand the concept of Safety Culture a few of the many definitions available are reproduced here. The UK's Health and Safety Commission 1993 defines it thus, 'The safety culture of an organisation is the product of individual and group values, attitudes, competencies, and patterns of behaviour that determine the commitment to, and the style and proficiency of, an organization's health and safety programmes. Organizations with a positive safety culture are characterized by communications founded on mutual trust, by shared importance of safety, and by the efficacy of preventive measure.' [29]

It has also been defined as the set of beliefs, norms, attitudes, roles and social and technical practices within an organisation which are concerned with minimising the exposure of individuals both within and outside an organisation to conditions which are considered to be dangerous. [30]

[28] Didla, S., Mearns, K., and Flin, R. (2009) *Safety citizenship behaviour: a proactive approach to risk management* Journal of Risk Research Vol. 12, Nos. 3–4, April–June 2009, 475–483

[29] Reason, James, Parker, Dianne, and Lawton, Rebecca, (1998) Organizational controls and safety: The varieties of rule-related behaviour Journal of Occupational and Organisational Psychology (1998), 71. 289-304

[30] McDonald, N. Corrigan, S. Daly, C. Cromie S. (2000) *Safety Management Systems and Safety Culture in Aircraft Maintenance Organisations* Safety Science 34 (2000) 151±176 www.elsevier.com/locate/ssci

The European Aviation Safety Agency (EASA), European Commercial Aviation Safety Team (ECAST) SMS Working Group cite the following definition of Safety Culture, Safety Culture is the set of enduring values and attitudes regarding safety issues, shared by every member of every level of an organization.

Safety Culture refers to the extent to which every individual and every group of the organization is aware of the risks and unknown hazards induced by its activities; is continuously behaving so as to preserve and enhance safety; is willing and able to adapt itself when facing safety issues; is willing to communicate safety issues; and consistently evaluates safety related behaviour. [31]

The essence of safety culture resides in the people's beliefs about the importance of safety; including what they think they're co-workers, supervisors and leaders really believe about safety's priority. It is demonstrated through attitudes, accepted norms and behaviours. It's about how things work and the way things are done around here.[32]

The term *'safety culture'* originated in the investigation report following the 1986 Chernobyl nuclear accident. Subsequently the International Atomic Energy Agency (IAEA) refers to the multilevel model of culture that was developed by the distinguished management consultant and organizational psychologist Edgar Schein. In an effort to understand safety culture in its entirety, they identify the artefacts, espoused values and basic assumptions that form the totality of the concept of culture as it applies to safety. They then give the following examples for each of the three levels (table 1).

[31] European Aviation Safety Agency http://www.easa.eu

[32] Safety Culture in ATM Toolkit (2010) http://www.Skybrary.aero [assessed 16-08-10]

Level	Example
Artefacts	
– objects	Safety policy statement
– language	Zero lost time accidents
– stories	The day the boss broke her / his ankle
– rituals	Safety award presentations
– behaviour	Use of safety equipment
Espoused values	Safety is the top priority Zero tolerance for safety deficiencies Blame-free work environment Errors are learning opportunities
Basic assumptions	Accidents are caused by carelessness Some people are accident-prone Risks have to be taken to achieve targets Safety can always be improved Accidents are avoidable Properly designed plant is inherently safe

Table 1. Safety culture in nuclear installations Guidance for use in the enhancement of safety culture (2002) IAEA-TECDOC-1329 [33]

[33] www.iaea.org

The Eurocontrol White Paper entitled Safety Culture in Air Traffic Management Dec. 2008 outlines how Safety Culture encompasses the following aspects:

1. Reporting Culture, which encourages employees to divulge information about all safety hazards that they encounter.
2. Just Culture, which holds employees accountable for deliberate violations of the rules but encourages and rewards them for providing essential safety-related information.
3. Flexible Culture, which adapts effectively to changing demands and allows quicker, smoother reactions to off-nominal events.
4. Learning Culture, which is willing to change based on safety indicators and hazards uncovered through assessments, audits, and incident analysis. Reason (1997).

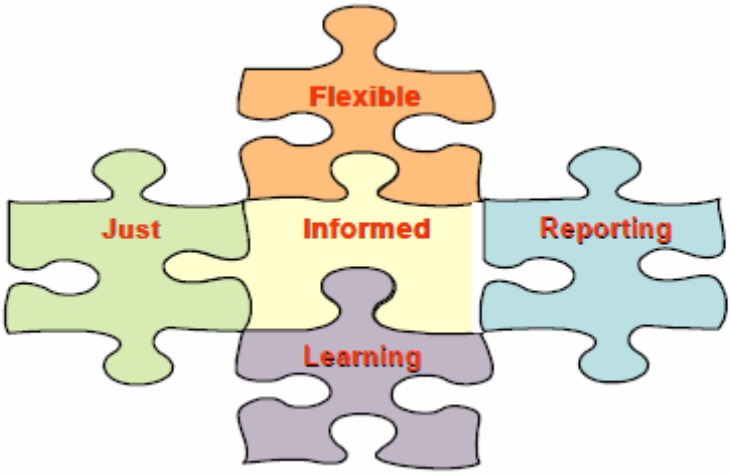


Figure 5: Key Components of Safety Culture
Source Safety Culture in Air Traffic Management, Eurocontrol White Paper (2008)

James Reason sums it up neatly by stating that a safe culture is an informed culture and this, in turn, depends upon creating an effective reporting culture that is underpinned by a just culture in which the line between acceptable and unacceptable behaviour is clearly drawn and understood, [34] (see figure 5).

Reporting also contributes to organizational learning.[35]

[34] Reason, James, (1998) *Achieving a safe culture: theory and practice* Work & Stress, 1998, VOL. 12, NO. 3 293-306

[35] Dekker, Sidney (2007) *Just Culture Balancing Safety and Accountability* Ashgate Publishing Ltd., Wey Court East, Union Road, Farnham, Surrey GU9 7 PT England.

In addition to categorising culture vis a vis its nature and strength, it can also be described in terms of its maturity. The following diagram represents the various levels safety culture maturity that may exist within an organisation (figure 6).

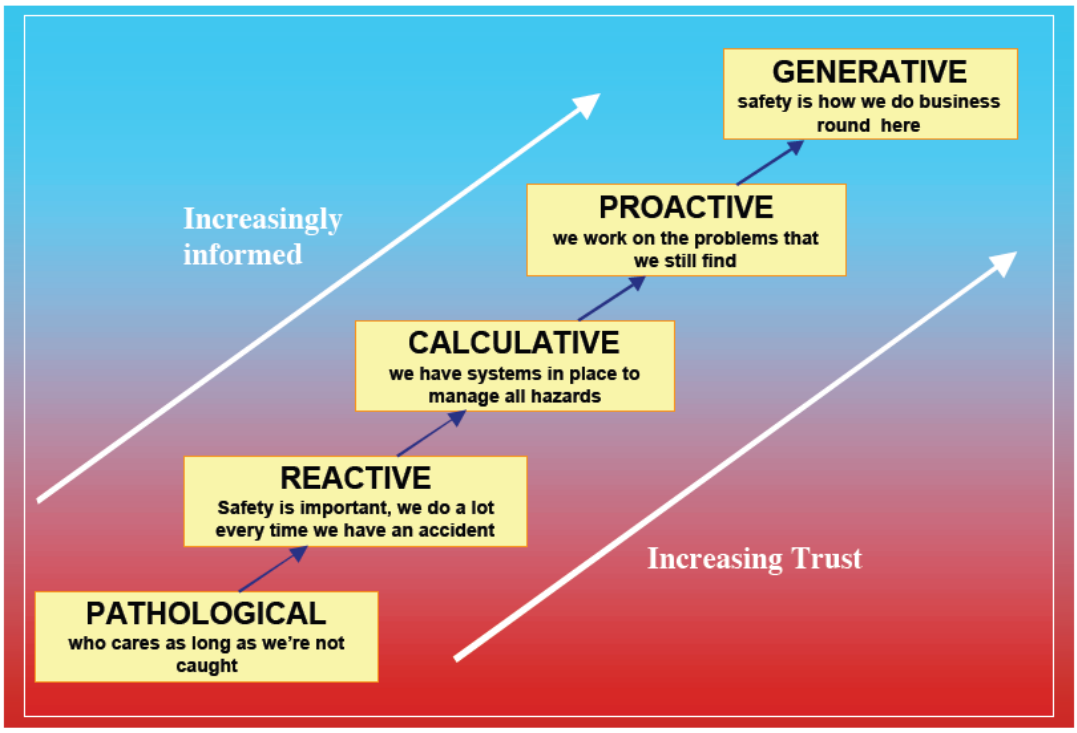


Figure 6: The evolutionary model of Safety Culture[36]

This model has been adopted by the ECAST SMS Working Group who has drawn up associated levels.

Maturity Levels 1 – 5

The five maturity levels are articulated as follows:

Level 1 (Pathological): Who cares as long as we're not caught

Level 2 (Reactive): Safety is important; we do a lot every time we have an accident

Level 3 (Calculative): We have systems in place to manage all hazards

Level 4 (Proactive): We work on the problems that we still find

Level 5 (Generative): Safety is how we do business around here[37]

[36] Hudson P (2001) Safety Management and Safety Culture. The Long and Winding Road. As presented to CASA Sept.102001, Canberra.

[37] Piers, Michel Montijn, Carolynne, Balk, Arjen (2009) *Safety Culture Framework for the ECAST SMS-WG* http://www.easa.europa.eu/essi/ECAST_SMS.htm [Accessed 7August 2010]

Poor safety culture' has been identified among the causes of numerous high-profile accidents in other industries[38], such as the fire at King's Cross underground station [39]; the sinking of the Herald of Free Enterprise passenger ferry [40], the passenger train crash at Clapham Junction [41], the disasters of the Space Shuttles Challenger and Columbia, the Überlingen mid-air collision accident, and the BP oil refinery accident [42].

There is no doubting the reasons for pursuing a strong safety culture or indeed the rewards for attaining this goal but the dilemma lies in the how and the challenging journey required to reach it. As James Reason puts is so succinctly, 'few things are so sought after and yet so little understood.' The hard work and dedication to the cause are indicated when he goes on to state that 'a safety culture is not something that springs up ready-made from the organizational equivalent of a near-death experience, rather it emerges gradually from the persistent and successful application of practical and down- to-earth measures.'

National Culture

The significance of the influence exerted by national culture on organisational safety cultures is worth exploring. However objective and uniform we try to make organisations, they will not have the same meaning for individuals from different cultures. [43]

The following presentation depicting safety culture as a tripartite concept; one which is based on national, organisational and professional aspects is very interesting.

[38] Eurocontrol (2008) White Paper on Safety Culture in Air Traffic Management :www.eurocontrol.int

[39] Fennell, D. (1998). Investigation into the King's Cross underground fire: Department of Transport, HMSO.

[40] Sheen, M. J. (1987). M.V.Herald of Free Enterprise. London: HMSO: Department of Transport.

[41] Hidden, A. (1989). Investigation into the Clapham Junction Railway Accident: Department of Transport, HMSO.

[42] Baker, James A., et al. "The Report of the BP U.S. Refineries Independent Safety Review Panel." January 2007. 22 Mar. 2007 http://www.bp.com/liveassets/bp_internet/globalbp/globalbp_uk_english/SP/STAGING/local_assets/assets/pdfs/Baker_panel_report.pdf

[43] Trompenaars, Fons and Hampden-Turner, Charles, (2010) *Riding The Waves of Culture Understanding Cultural Diversity in Business* www.nicholasbrealey.com UK Flight Safety Committee http://www.ukfsc.co.uk

Figure 7: A model of the intersection of cultures and their outcomes (adapted from Helmreich and Merritt, 1998).44

Similarly the ICAO Doc 9859 Safety Management Manual, adopts the philosophy that, organizations, 'being groups of people, are not immune to cultural considerations. Organizational performance is subject to cultural influences at every level. The following three levels of culture have relevance to safety management initiatives, since the three levels are determinants of organizational performance,'(see figure 8).

[44] Source Isaac and McCabe (2009) Safety Culture in ATM: through a glass darkly Hindsight 09 www.skybrary.aero

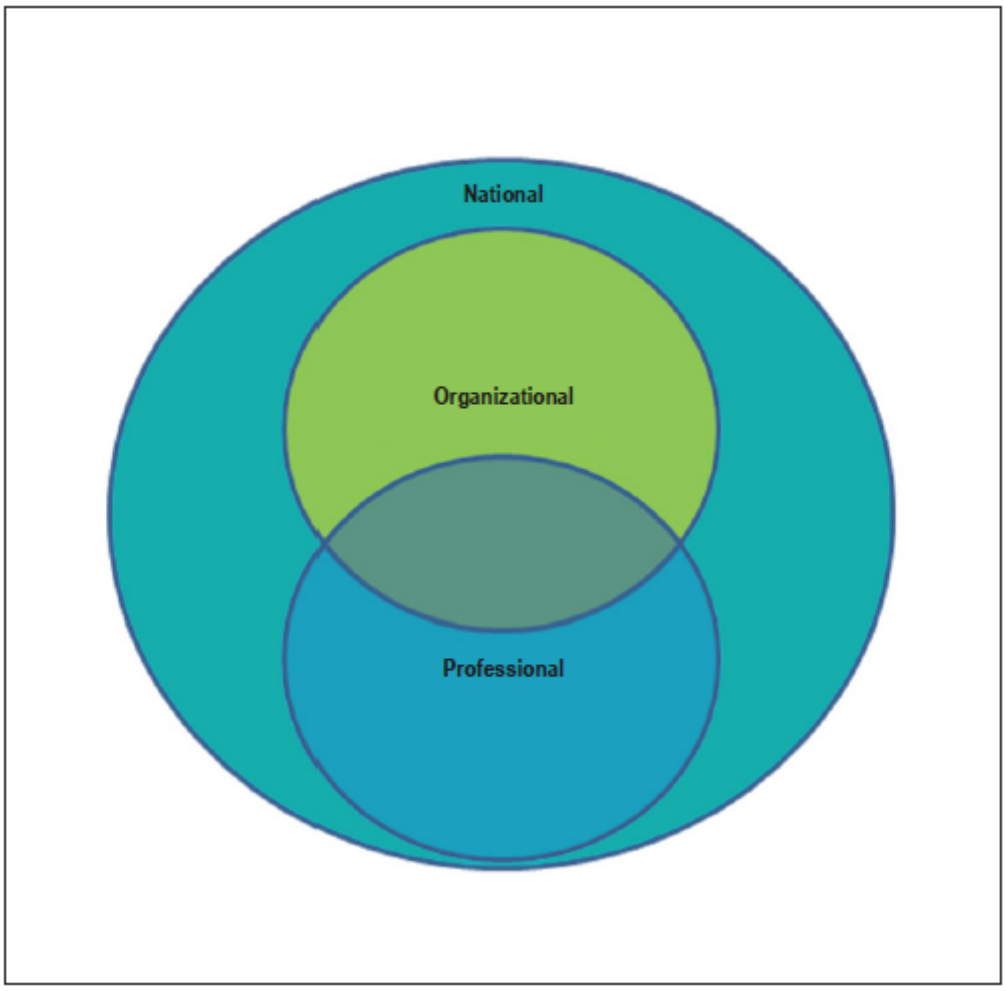


Figure 8. Three Distinct Cultures Source ICAO Doc 9859 Safety Management Manual

However, later arguments suggest that more proximal influences such as perceived management commitment to safety and the efficacy of safety measures exert more impact on workforce behaviour and subsequent accident rates than fundamental national values. [45]

Another interesting perspective on the distinction between national culture and organisational culture is proffered by James Reason when he says, 'national cultures arise largely out of shared values, organisational cultures are shaped mainly by shared practices.'

Culture still seems like a luxury item to most managers, a dish on the side. In fact, culture pervades and radiates meanings into every aspect of the enterprise. [46]

[45] Merritt, A. (1998). *Replicating Hofstede: A study of pilots in eighteen countries* In R.S. Jensen (Ed.), Proceedings of the Ninth *International Symposium on Aviation Psychology* (pp. 667-672). Accessed on googlescholar.com

[46] Trompenaars, Fons and Hampden-Turner, Charles, (2010) *Riding The Waves of Culture Understanding Cultural Diversity in Business* www.nicholasbrealey.com UK Flight Safety Committee http://www.ukfsc.co.uk

No review of national culture would be complete without mention of the Dutch engineer and social scientist, Geert Hofstede and his four dimensions of national culture. These dimensions are termed Power-Distance, Individualism-Collectivism, the Masculinity-Femininity and Uncertainty-Avoidance.

Dr. Ashleigh Merritt undertook a study whereby attitudinal data from 9,000 male commercial airline pilots in 18 countries were used to conduct a replication study of Hofstede's four dimensions of national culture. She concluded that national culture can and should be added to the list of influences upon a pilot's work style and preferences and that in essence, training curricula which honour and build on the cultural preferences of pilots will be more readily accepted than a one-size-fits-all model. [47]

Ultimately organisations need to have a full appreciation of the influence national culture has on their functioning if safety measures are to be effective and worthwhile.[48]

Safety Management Systems (SMS)

Over the last decade the International Civil Aviation Organisation (ICAO) have progressively introduced new standards and recommended practices for the introduction of SMSs.

One of the cornerstones of SMS is hazard identification. Some historical perspective with regard to the relationship between accidents and lesser incidents should help emphasise the importance of recognising hazards at an early stage. By anticipating potentially dangerous situations, it enables the establishment of mitigating factors such as alternative procedures, more training or better equipment.

H.W. Heinrich changed the world of safety fundamentals forever with his pioneering work in the 1930s. One of his concepts, the accident triangle (pyramid), noted that for every 300 unsafe acts there are 29 minor injuries and one major injury. It's a familiar concept where so many near misses lead to an analogous number of first aid injuries and onward through the logic to recordables and ending in the inevitability of a fatality. [49]

[47] Merritt, A. (1998). *Replicating Hofstede: A study of pilots in eighteen countries* In R.S. Jensen (Ed.), Proceedings of the Ninth *International Symposium on Aviation Psychology* (pp. 667-672). Accessed on googlescholar.com

[48] Mearns Kathryn and Yule Steven (2009) *The role of national culture in determining safety performance: Challenges for the global oil and gas industry* Safety Science 47 (2009) 777–785 www.elsevier.com/locate/ssci

[49] Williamson, Dr Mike (2003) *Revisiting Heinrich's Accident Triangle* http://www.ishn.com

The ICAO Safety Management Manual reflects the significance of this concept in the emphasis that it places on hazards and the various components such as; differentiation between Hazards and consequences, Understanding hazards; Hazard identification; Hazard analysis; and Documentation of hazards. It also states that "hazard identification and safety risk management are the core processes involved in the management of safety". Figure 9 eloquently combines the accident triangle/iceberg with Reason's Swiss cheese model and draws attention to the focus of hazard identification.

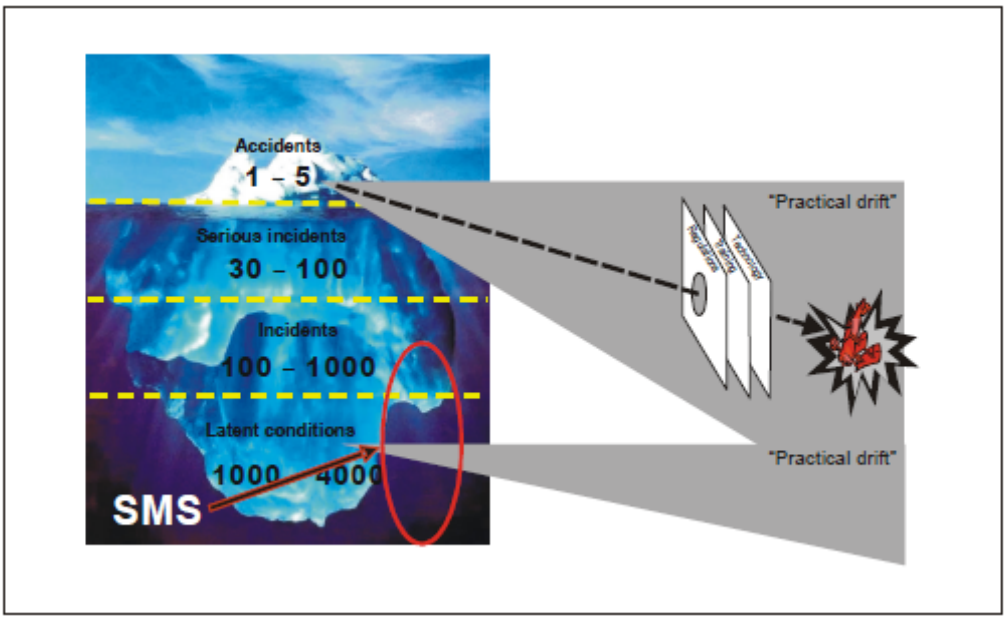


Figure 9. The focus of hazard identification. Source ICAO Doc 9859 Safety Management Manual

At the very core of the SMS is the need to identify potential hazards and then analyze risk. After that, the next steps are to rank hazards and assess risk, and then identify mitigation options. It's a closed loop process where identified risks are mitigated and the mitigations are monitored to provide continuous system safety.[50] However, this is very difficult to achieve without a reporting culture.

Implementing and maintaining an SMS or any safety process takes place in a competitive environment where other commercial processes vie for valuable limited resources. This has been recognised in the following extracts taken from ICAO DOC 9859.

[50] ICAO http://www.icao.int ICAO DOC 9859 Safety Management Manual

The resources available to aviation organizations are finite. There is no aviation organization with infinite resources. Resources are essential to conduct the core business functions of an organization that directly and indirectly support delivery of services. Resource allocation therefore becomes one of the most important, if not the most important, of the organizational processes that senior management must account for.

Unless the perspective of safety management as a core business function is adhered to by the organization, there is the potential for a damaging competition in the allocation of resources to conduct the core business functions that directly and indirectly support delivery of services. Such competition may lead to a management dilemma that has been dubbed the “dilemma of the two Ps”.

Simply put, the “dilemma of the two Ps” can be characterized as the conflict that would develop at the senior management level of the organization because of the perception that resources must be allocated on an either/or basis to what are believed to be conflicting goals: production goals (delivery of services) or protection goals (safety).

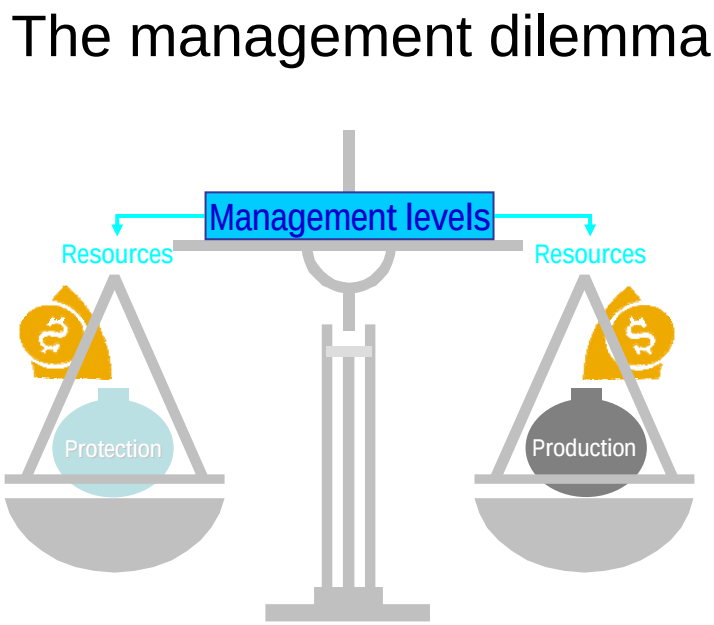


Figure 10-A: The management dilemma

Source ICAO Doc 9859 Safety Management Manual

Figure 10-A depicts a balanced allocation of resources to production and protection goals that results from organizational decision-making processes based on safety management as a core business function (i.e. just another core business function).

Because the management of safety is considered just another organizational process and safety management just another core business function, safety and efficiency are not in competition, but closely intertwined. This results in a balanced allocation of resources to ensure that the organization is protected while it produces. In this case, the “dilemma of the two Ps” has been effectively dealt with. If fact, it can be argued that in this case the dilemma does not exist.

Regrettably, the history of aviation shows that effective resolution of the dilemma has not been commonplace. What history shows is a tendency for organizations to drift into an unbalance in the allocation of resources because of the perception of competition between production and protection. In cases when such competition develops, protection is usually the loser, with organizations privileging production objectives (albeit introducing numerous caveats to the contrary).

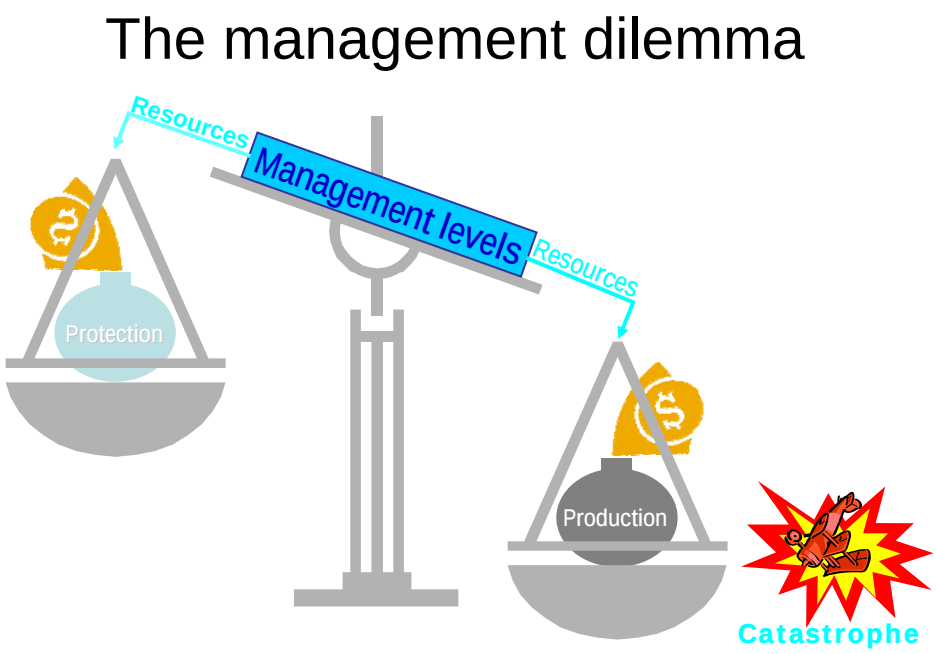
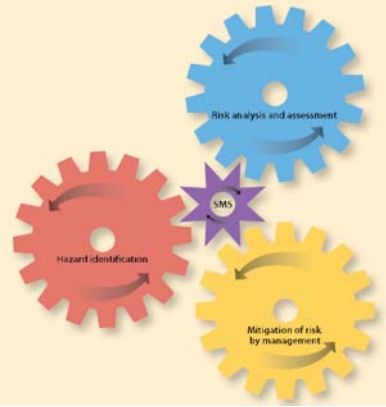


Figure 10-B: The management dilemma

Inevitably, as shown in Figure 10-B, such partial organizational decision making leads to a catastrophe. It is simply a matter of time.

Thomas Anthony presents a dynamic mental model of SMS in an article entitled 'SMS on Wheels'. The traditional pillar model emphasised the strength and supporting structures required to implement an SMS. The updated 'Wheels' model successfully demonstrates how each element influences the others and how all elements must work together for the system to function. Lubrication is essential for the whole process to operate smoothly and communication is identified as the vital lubricant for the successful operation of any SMS.[51]



The implementation of an SMS system will be discussed in greater detail in the next section of this document.

It is worth noting another organisational system that has played a very significant part in aviation regulatory compliance and safety trending, and that is Quality. Aviation is rife with safety-sensitive and critical job positions and requires extremely high levels of quality and reliability in hardware and personnel skills. Therefore, both quality control, and total quality management (TQM) are integral parts of the aviation sector. Reliability and safety in aviation is a complex team effort, and that is why we are saying that "safety is no accident. [52]

Nevertheless safety researchers have realised that in order to achieve high safety levels, mere compliance is not sufficient. [53]

[51] Thomas Anthony *SMS on Wheels* AeroSafetyWorld Sept 2009 www.flightsafety.org

[52] Waikar, Avinash and Nichols, Phillip (1997) *Aviation safety: a quality perspective* Disaster Prevention and Management Volume 6 · Number 2 · 1997 · pp. 87–93.

[53] Didla, S., Mearns, K., and Flin, R. (2009) *Safety citizenship behaviour: a proactive approach to risk management* Journal of Risk Research Vol. 12, Nos. 3–4, April–June 2009, 475–483

Linking SMS and Safety Culture

Having discussed the significance of safety culture and SMSs, there is a need to explore the possible links between both.

The Eurocontrol (2008) white paper on safety culture in air traffic management safety declares that the 'health of any organisation is the product of two key elements:

- The quality and execution of the systems and processes implemented to deal with risk and safety-related information (the Safety Management System, which may or may not be formalised), and
- The Safety Culture, which includes people's shared values, beliefs and attitudes about safety.

These two elements combine to characterise the way that people behave within their organisation, the "behavioural norms"'. (Se Figure 11 below)

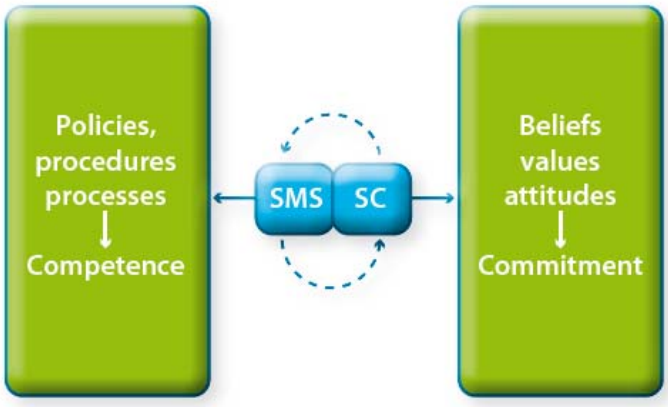


Figure 11 – Interdependence between Safety Management Systems (SMS) and Safety Culture (SC) in an organisation.[54]

Therefore SMS and Safety Culture are interdependent with the SMS embodying the competence to achieve safety, and Safety Culture representing the commitment to achieve safety.

However while it may be idyllic to believe that there is a perfect balance between SMS and safety culture, the reality can be quite different.

Figure 12 presents the potential disparity between what may be said about safety, and what is actually done. This conflict underpins people's real belief about how their organisation values safety, and so affects their own behaviour and, hence, real safety outcomes.

[54] Eurocontrol (2008) White Paper on Safety Culture in Air Traffic Management www.eurocontrol.int

Figure 12 Simplified Safety Culture Model[55]

Therefore, when examining Safety Culture, it is important not to rely only on official documents such as the SMS and even observation of the behaviour may not be sufficient. It is necessary to probe people's real beliefs about safety, including their beliefs and perceptions of other's values too, especially their peers and superiors.

When safety is endorsed at every stage and every level, the gap between what one is 'expected' to do and what 'more' one can do is reduced considerably. This also indicates the influence of safety culture. [56]

This is also emphasised by researches Gill and Shergill (2004) who have identified that 'the effectiveness of a Safety Management System depends on how well it permeates in the fabric of the organisation—'the ways in which things are done'—so that a positive safety culture is generated and maintained in an ongoing manner.'[57]

Another major contributor to this field, Stian Antonsen, makes the following distinction between the safety management approach and the safety culture approach when he explains that 'the safety management philosophy is predominantly orientated towards *formal* organization. The safety culture approach, on the other hand, is oriented towards the *informal* aspects of the organization.'[58]

[55] Eurocontrol (2008) *White Paper on Safety Culture in Air Traffic Management* www.eurocontrol.int

[56] Didla, S., Mearns, K., and Flin, R. (2009) *Safety citizenship behaviour: a proactive approach to risk management* Journal of Risk Research Vol. 12, Nos. 3–4, April–June 2009, 475–483

[57] Gill, Gurjeet K., and Shergill, Gurvinder S. (2004) *Perceptions of safety management and safety culture in the aviation industry in New Zealand* Journal of Air Transport Management 10 (2004) 233–239

[58] Antonsen, Stian (2007) *Safety Culture and the Issue of Power* Safety Science, www.elsevier.com

The Irish Aviation Authority Safety Regulatory Division (IAA SRD) in discharging its regulatory duty by implementing its surveillance programme of Irish aviation service providers regularly conducts Airline SMS audits. These audits focus on the more formal aspects of the SMS. The various components such as policy, procedures, records, company audits etc. are all examined. It has been found that compliance with safety rules and regulations is influential in lowering the risk of accidents.[59]

Given that this regulatory function which deals with the 'nuts and bolts' of the SMS is well monitored by the regulatory authority, it was felt that there was need to explore the impact of the introduction of SMS on organisations' safety cultures. It was this knowledge gap that motivated the present research.

Measuring Safety Culture

Attempting to measure safety is a daunting task. In years gone by, accident and incident rates were the yardstick used to measure the level of safety. No matter how difficult the task it must nonetheless be tackled. In U.K. industry, particularly in the energy sector, there has been a movement away from `lagging' measures of safety based on retrospective data, such as lost time accidents and incidents, towards `leading' or predictive assessments of the safety climate of the organisation or worksite.[60]

A challenging conundrum is presented by the fact that safety is a dynamic non-event. 'Non-events, by their nature, tend to be taken for granted, particularly in the face of continuous and compelling productive demands.

Safety is invisible in the sense that safe outcomes do not deviate from the expected, and so there is nothing to capture the attention. If people see nothing, they presume that nothing is happening, and that nothing will continue to happen if they continue to act as before. But this is misleading because it takes a number of dynamic inputs to create stable outcomes.[61]

[59] Didla, S., Mearns, K., and Flin, R. (2009) *Safety citizenship behaviour: a proactive approach to risk management* Journal of Risk Research Vol. 12, Nos. 3–4, April–June 2009, 475–483

[60] Flin , R., Mearns, K.,O'Connor, P., Bryden, R. (2000) *Measuring safety climate: identifying the common features* Safety Science 34 (2000) 177±192 www.elsevier.com/locate/ssci

[61] Reason, James, Parker, Dianne, and Lawton, Rebecca, (1998) Organizational controls and safety: The varieties of rule-related behaviour Journal of Occupational and Organisational Psychology (1998), 71. 289-304

A further presentation of this conundrum was editorialised in a recent article in Flight International magazine entitled 'Out of Ideas,' when it was explained that: 'A snapshot of global airline fatal accident figures for the first half of 2010 continues an established trend indicating that airline safety performance has stagnated at 2003 levels.'

This is significant because until then airline accident rates had declined steadily since airline flying began.' [62]

It has been noted that in commercial aviation the fatal accident rate has remained steady at around one per million departures for the past 25 years-despite the very considerable technological changes that have taken place in this period.[63]

Further evidence of this plateauing is presented in CAP 776 (2008) *Global Fatal Accident Review 1997–2006* records that 'the overall fatal accident rate for the ten-year period 1997 to 2006 was 0.79 fatal accidents per million flights flown or 0.49 when expressed as per million hours flown.' This levelling off of the accident rate is illustrated below (figure 13).

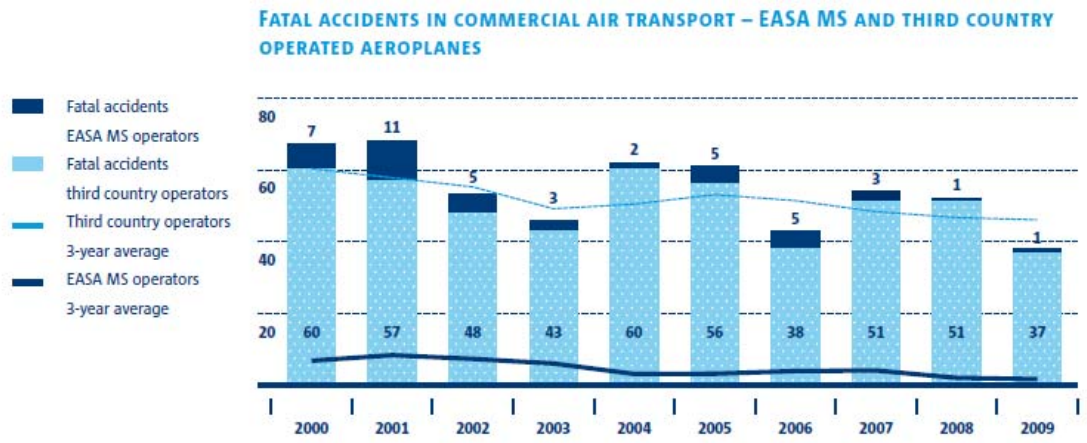


Figure 13: Fatal accidents in commercial air transport – European Aviation Safety Agency (EASA) Member States (MS) and third country (non-member states, rest of the world) operated aeroplanes [64]

[62] www.flightglobal.com

[63] Reason, James, Parker, Dianne, and Lawton, Rebecca, (1998) *Organizational controls and safety: The varieties of rule-related behaviour Journal of Occupational and Organisational Psychology* (1998), 71. 289-304

[64] EASA Annual Safety Review 2009

While this is a very welcome phenomenon it does present the difficulty of what other options are there for exacting a measurement of safety and more importantly tracking safety trends, before the outcome is too late, with possible catastrophic consequences. In the absence of sufficient accidents to steer by, the only way to sustain a state of intelligent and respectful wariness is by creating a safety information system that collects, analyses and disseminates the knowledge gained from incidents, near misses and other 'free lessons'. To achieve this, it is first necessary to engineer a reporting culture - not an easy thing, especially when it requires people to confess their own slips, lapses and mistakes.[65]

The traditional approach of safety management was narrowly focused on technical factors such as design of equipment, safety policies and programmes. Subsequent investigations indicated that a behaviour-oriented approach is needed because it is becoming apparent that employee attitudes and behaviours govern how they identify risks in the workplace.[66]

However, as with any cultural approach to understanding organizations, attempts to `measure' safety culture have to meet the challenge of evaluating invisible norms and assumptions based on visible indicators which themselves only gain meaning through the knowledge of those norms and assumptions [67]

Despite these challenges effective efforts to achieve safety must recognize the importance of culture. Organisations must have a full understanding of cultural influences on their operations if safety efforts are to succeed. The basic premise of this discussion is that it is essential to build on the strengths of national culture and to enhance professional and organisational cultures to establish a robust safety culture.[68]

[65] Reason, James, Parker, Dianne, and Lawton, Rebecca, (1998) Organizational controls and safety: The varieties of rule-related behaviour Journal of Occupational and Organisational Psychology (1998), 71. 289-304

[66] Didla, S., Mearns, K., and Flin, R. (2009) *Safety citizenship behaviour: a proactive approach to risk management* Journal of Risk Research Vol. 12, Nos. 3–4, April–June 2009, 475–483

[67] Grote G., and Künzler C (2000) *Diagnosis of Safety Culture in Safety Management Audits* Safety Science, www.elsevier.com

[68] Helmreich, R.L. (1999). Building safety on the three cultures of aviation. In Proceedings of the IATA Human Factors Seminar (pp. 39- 43). Bangkok, Thailand, August 12, 1998

Leadership

An aspect worthy of special mention is the part played by leadership. Some researchers suggest that a strong emphasis should be put on how safety features in the strategic priorities of senior management and how this priority is manifested in policy.[69]

The significance of leadership has been recognised in other industries and is emphasised in the following article entitled *"Creating a Culture of Safety – Why CEOs hold the key to improved outcomes."* When the non-profit VHA Foundation, Irving, Texas, embarked on a national patient safety initiative and looked to outside industries, its MD, vice president of clinical improvement services Ken Smithson recorded the following common denominator. *'We noted that all of the high-reliability industries studied place a premium on safety as an integral part of the organization's culture, and the CEOs occupied the leading role in fostering that culture.*'

Another Healthcare company CEO David Bernd attributed many of his company's achievements to the fact that *'we don't talk about safety as a priority; we think about it as a core value.;* While another MD Gary Yates explains, *'We've all had to become students of safety to understand how to translate our good intentions as leaders into improvement,*'and says, the system has learned, for example, that cultural change occurs when new behaviours that help prevent errors become pervasive habits.[70]

Leadership in safety matters has to be demonstrated at the highest levels in an organization. Safety has to be achieved and maintained by means of an effective management system. This system has to integrate all elements of management so that requirements for safety are established and applied coherently with other requirements, including those for human performance, quality and security, and so ensure that safety is not compromised by other requirements or demands. The management system also has to ensure the promotion of a safety culture, the regular assessment of safety performance and the application of lessons learned from experience.[71]

Likewise the IAEA (2006) *Fundamental Safety Principles* insists that 'a safety culture that governs the attitudes and behaviour in relation to safety of all organizations and individuals concerned must be integrated in the management system.

[69] McDonald, N. Corrigan, S. Daly, C. Cromie S. (2000) *Safety Management Systems and Safety Culture in Aircraft Maintenance Organisations* Safety Science 34 (2000) 151±176 www.elsevier.com/locate/ssci

[70] Birk, Susan (2009) *Creating a Culture of Safety – Why CEOs hold the key to improved outcomes* Healthcare Executive MAR/APR 2009 Business Source Premier

[71] ICAO http://www.icao.int ICAO Doc 9859 Safety Management Manual

Safety culture includes:

- individual and collective commitment to safety on the part of the leadership, the management and personnel at all levels;
- Accountability of organizations and of individuals at all levels for safety;
- Measures to encourage a questioning and learning attitude, and to discourage complacency with regard to safety.'[72]

Perceived management commitment to safety will be a key factor in determining levels of safety behaviour in the workforce.[73]

By the same token the ICAO Safety Management Manual (2009) reiterates the importance of implementing safety from the top down when it states that 'the perspective of the management of safety as an organizational process and of safety management as a core business function clearly places ultimate safety accountability and responsibility for such function at the highest level of aviation organizations'.

The quest of safety culture improvement is worth pursuing as it should yield benefits in safety behaviours for organisations. There is a considerable amount of evidence showing a link between positive safety culture and safety behaviour. Safety initiative and safety participation have shown a positive correlation with a lower frequency of accidents. A positive safety culture is an influential factor in encouraging people to participate in Safety Citizenship Behaviours (SCBs), in addition to the innate human need for self-preservation.

The concept of citizenship behaviour is based on the principle of reciprocity i.e. employees tend to reciprocate a high-quality relationship with their supervisor (i.e. relationship based on trust, support and fairness) by engaging in behaviours valuable to the organisation. Organisations need individuals who are proactive in participating and initiating improvements in safety.[74]

Finally, it is worth remembering the following quote from more than 90 years ago, when the philosopher George Santayana said, *"those who cannot remember the past are condemned to repeat it."*[75]

[72] www.iaea.org Fundamental Safety Principles FS-1

[73] Mearns Kathryn and Yule Steven (2009) *The role of national culture in determining safety performance: Challenges for the global oil and gas industry* Safety Science 47 (2009) 777–785 www.elsevier.com/locate/ssci

[74] Didla, S., Mearns, K., and Flin, R. (2009) *Safety citizenship behaviour: a proactive approach to risk management* Journal of Risk Research Vol. 12, Nos. 3–4, April–June 2009, 475–483

[75] Jim Hall, Chairman NTSB 'We Are All Safer" 2nd Ed 1998.

Implementation of a Safety Management System

As already discussed in the previous section ICAO define a **safety management system (SMS)** as a systematic approach to managing safety, including the necessary organisational structures, accountabilities, policies and procedures. This section provides a synopsis of an SMS as defined in ICAO Safety Management Manual, Document 9859 and outlines what the IAA seek to confirm is in place when auditing an SMS system in an organisation.

The objective of a Safety Management System is to provide a structured management approach to control safety risks in operations. Effective safety management must take into account the organisation's specific structures and processes related to safety of operations. Use of SMS can be generally interpreted as applying a quality management approach to control safety risks. Similar to other management functions, safety management requires planning, organising, communicating and providing direction.

An SMS is ***systematic*** because safety management activities are in accordance with a pre-determined plan and applied in a consistent manner throughout the organization. A long-range plan to keep the safety risks of the consequences of hazards under control is developed, approved, implemented and operated on a non-stop, daily basis.

As a consequence of their systematic and strategic nature, SMS activities aim at gradual but constant improvement, as opposed to instant dramatic change. The systematic nature of an SMS also leads to a focus on processes rather than outcomes. Although outcomes (i.e. adverse events) are duly considered to extract conclusions that support the control of safety risks, the main focus of an SMS is the capture of hazards, which are the precursors to outcomes, during the course of the routine operational activities (processes) that the organization engages in during delivery of services.

An SMS is ***proactive*** because it builds on an approach that emphasizes hazard identification and safety risk control and mitigation, before events that affect safety occur. It involves strategic planning, seeking to keep safety risks under the constant control of the organization, instead of engaging in repair action when an adverse event is experienced, and then reverting to "sleep mode" until the next adverse event is experienced and repair action is reengaged. In order to sustain effective hazard identification, constant monitoring is conducted of operational activities necessary for the provision of services. This in turn allows for the collection of safety data on hazards, allowing data driven organizational decisions on safety risks and their control, as opposed to formulating decisions on safety risks based on opinion or, even worse, on bias or prejudice.

Lastly, an SMS is ***explicit*** because all safety management activities are documented, visible and therefore defensible. Safety management activities and the ensuing safety management know-how of the organization are formally recorded in official documentation that is available for anyone to access. Thus, safety management activities are transparent. In this respect, the "safety library" discussed in Chapter 4 plays a fundamental role in ensuring that safety management activities and know-how are documented in formal organizational structures and do not reside in the heads of individuals. An organization that allows a situation to develop where safety management activities and know how reside in the heads of individuals exposes itself to a highly volatile situation in terms of preservation of safety activities and know-how.

SMS Framework

This section introduces the basic framework as defined by ICAO for the implementation and maintenance of a safety management system (SMS) by an organisation. The implementation of the framework shall be commensurate with the size of the organisation and the complexity of the services provided. The framework includes the following four components and twelve elements, representing the minimum requirements for SMS implementation.

1. Safety policy and objectives
    - 1.1 Management commitment and responsibility
    - 1.2 Safety accountabilities
    - 1.3 Appointment of key safety personnel
    - 1.4 Coordination of emergency response planning
    - 1.5 SMS documentation

2. Safety risk management
    - 2.1 Hazard identification
    - 2.2 Risk assessment and mitigation

3. Safety assurance
    - 3.1 Safety performance monitoring and measurement
    - 3.2 The management of change
    - 3.3 Continuous improvement of the SMS

4. Safety promotion
    - 4.1 Training and education
    - 4.2 Safety communication.

Safety Policy and Objectives

1.1 Management commitment and responsibility

Each organisation is required to define the organisation's safety policy which shall be in accordance with international and national requirements, and is signed by the Accountable Executive of the organisation. The safety policy reflects the organisational commitments regarding safety and includes a clear statement about the provision of the necessary resources for the implementation of the safety policy. The policy is communicated, with visible endorsement, throughout the organisation.

The safety policy also includes the safety reporting procedures and clearly indicates which types of operational behaviours are unacceptable. It also includes the conditions under which disciplinary action would not apply. The safety policy is periodically reviewed to ensure it remains relevant and appropriate to the organisation.

The ***management commitment and responsibilities*** element of an SMS outlines the importance of management commitment to SMS. In any organization, management control the activities of personnel and resources that provide a service. The organization's exposure to aviation safety hazards is a consequence of the provision of these services and committed and effective management will actively control the safety risks related to the consequences of these hazards. When assessing this element the IAA verify the organisation has a satisfactory and effective system by auditing the following:

- there is a safety policy in place.
- the safety policy reflects organisational commitments regarding safety management.
- the safety policy includes a clear statement about the provision of the necessary resources for the implementation of the safety policy.
- the safety policy includes the safety reporting procedures.
- the safety policy clearly indicates which types of operational behaviours are unacceptable. Likewise, the safety policy includes the conditions under which disciplinary action would not apply.
- the safety policy is signed by the Accountable Executive.
- the safety policy is communicated, with visible endorsement, throughout the organisation.
- the safety policy is periodically reviewed to ensure it remains relevant and appropriate to the organisation.
- there is a formal process to develop a coherent set of safety objectives.
- the safety objectives are linked to the safety performance indicators, safety performance targets and action plans.
- the safety objectives are publicised and distributed.

1.2 Safety accountabilities

The organisation must identify the Accountable Executive who, irrespective of other functions, is ultimately responsible and accountable, on behalf of the organisation, for the implementation and maintenance of the SMS.

The organisation must also identify the accountabilities of all members of management, irrespective of other functions, as well as of employees, with respect to the safety performance of the SMS. Safety responsibilities, accountabilities and authorities are all documented and communicated throughout the organisation, and include a definition of the levels of management with authority to make decisions regarding safety risk tolerability.

The ***safety accountabilities*** element of an SMS identifies the Accountable Executive who, irrespective of other functions, has ultimate responsibility and accountability, on behalf of their organisation, for the implementation and maintenance of the SMS. This section also identifies the accountabilities of all members of management, irrespective of other functions, as well as of employees, with respect to the safety performance of the SMS. When assessing this element the IAA verify the organisation has a satisfactory and effective system by auditing the following:

- the organisation has identified the Accountable Executive who, irrespective of other functions, shall have ultimate responsibility and accountability, on behalf of the organisation, for the implementation and maintenance of the SMS.
- the Accountable Executive has responsibility for ensuring that the safety management system is properly implemented and performing to requirements in all areas of the organisation.
- the Accountable Executive has full control of the financial resources required for the operations authorized to be conducted under the operations certificate.
- the Accountable Executive has full control of the human resources required for the operations authorized to be conducted under the operations certificate.
- the Accountable Executive has direct responsibility for the conduct of the organisation's affairs.
- the Accountable Executive has final authority over operations authorized to be conducted under the operations certificate.
- the organisation has identified the accountabilities of all members of management, irrespective of other functions, as well as of employees, with respect to the safety performance of the SMS.
- the safety responsibilities, accountabilities and authorities are documented and communicated throughout the organisation.

- the organisation has included a definition of the levels of management with authority to make decisions regarding safety risk tolerability.

1.3 Appointment of key safety personnel

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

Appointment of key Personnel

The ***appointment of key personnel*** element of the SMS outlines that the organisation has appointed a suitably qualified safety manager to be the responsible individual and focal point for the implementation and maintenance of an effective SMS. When assessing this element the IAA verify the organisation has a satisfactory and effective system by auditing the following:

- the organisation has appointed a qualified person to manage and oversee the day-to-day operation of the SMS.
- the person overseeing the operation of the SMS fulfils the required job functions and responsibilities.
- the safety authorities, responsibilities and accountabilities of personnel at all levels of the organisation are defined and documented.

1.4 Coordination of emergency response planning

The organisation must ensure that an emergency response plan that provides for the orderly and efficient transition from normal to emergency operations and the return to normal operations is properly coordinated with the emergency response plans of those organisations it must interface with during the provision of its services.

The ***coordination of Emergency Response Planning*** element of the SMS defines how an organisation ensures that an emergency response plan is defined and that the orderly and efficient transition from normal to emergency operations and the return to normal operations is properly coordinated with the emergency response plans of those organisations it must interface with during the provision of its services. When assessing this element the IAA verify the organisation has a satisfactory and effective system by auditing the following:

- the organisation has an emergency response / contingency plan appropriate to the size, nature and complexity of the organisation.
- the organisation coordinates its emergency response/contingency procedures with the emergency/response contingency procedures of other organisations it must interface with during the provision of services.
- the organisation has a process to distribute and communicate the coordination procedures to the personnel involved in such interaction.

1.5 SMS documentation

The organisation is required to develop an SMS implementation plan, endorsed by senior management of the organisation, which defines the organisation's approach to the management of safety in a manner that meets the organisation's safety objectives.

The organisation must develop and maintain SMS documentation describing the safety policy and objectives, the SMS requirements, the SMS processes and procedures, the accountabilities, responsibilities and authorities for processes and procedures, and the SMS outputs. Also as part of the SMS documentation, the organisation must develop and maintain a safety management systems manual, to communicate its approach to the management of safety throughout the organisation.

The ***SMS documentation element*** of the SMS outlines how an organisation develops an SMS implementation plan, endorsed by senior management of the organisation that defines the organisation's approach to the management of safety in a manner that meets the organisation's safety objectives. The organisation must develop and maintain SMS documentation describing the safety policy and objectives, the SMS requirements, the SMS processes and procedures, the accountabilities, responsibilities and authorities for processes and procedures, and the SMS outputs. Also as part of the SMS documentation, the [organization] must develop and maintain a safety management systems manual, to communicate its approach to the management of safety throughout the organization. When assessing this element the IAA verify the organisation has a satisfactory and effective system by auditing the following:

- the organisation has developed and maintains a safety library for appropriate hazard documentation and documentation management.
- the organisation has developed and maintains SMS documentation in paper or electronic form.
- the SMS documentation is developed in a manner that describes the SMS and the consolidated interrelationships between all the SMS components.

- the organisation has developed an SMS implementation plan that ensures that the SMS meets the organisation's safety objectives.
- the SMS implementation plan has been developed by a person or a planning group which comprises an appropriate experience base.
- the person or planning group has received enough resources for the development of the SMS implementation plan.
- the SMS implementation plan is endorsed by the senior management of the organisation.
- the SMS implementation plan is regularly reviewed by the senior management of the organisation.
- For new SMS, the SMS implementation plan proposes implementation of the SMS in phases.
- the SMS implementation plan explicitly addresses the coordination between the organisation's SMS and the SMS of other organisations they must interface with during the provision of services.
- the service provider has developed a safety management systems manual as a key instrument for communicating the organisation's approach to safety to the whole organisation.
- the SMS documents all aspects of the SMS including, among others, the safety policy, objectives, procedures and individual safety accountabilities.
- the SMS manual clearly articulates the role of safety risk management as an initial design activity and the role of safety assurance as a continuous activity.
- relevant portions of SMS-related documentation are incorporated into approved documentation, such as company operations manual, maintenance control/policy manual and airport operations manual, as applicable.
- the organisation has a records system that ensures the generation and retention of all records necessary to document and support operational requirements.
- the service provider's records system is in accordance with applicable regulatory requirements and industry best practices.
- the records system provides the control processes necessary to ensure appropriate identification, legibility, storage, protection, archiving, retrieval, retention time, and disposition of records.

Safety Risk Management

2.1 Hazard identification

The organisation must develop and maintain a formal process that ensures that hazards in operations are identified. Hazard identification must be based on a combination of reactive, proactive and predictive methods of safety data collection.

The ***Hazard Identification*** element of an SMS outlines how an organisation develops and maintains a formal process that ensures that hazards in operations are identified. Hazard identification shall be based on a combination of reactive, proactive and predictive methods of safety data collection. When assessing this element the IAA verify the organisation has a satisfactory and effective system by auditing the following:

- the organisation has a formal safety data collection and processing system (SDCPS) for effectively collecting information about hazards in operations.
- the organisation's SDCPS includes a combination of reactive, proactive and predictive methods of safety data collection.
- the organisation has reactive processes that provide for the capture of information relevant to safety and risk management.
- the service provider has developed training relevant to reactive methods of safety data collection.
- the service provider has developed communication relevant to reactive methods of safety data collection.
- reactive reporting is simple, accessible and commensurate with the size of the service provider.
- reactive reports are reviewed at the appropriate level of management.
- there is a feedback process to notify contributors that their reports have been received and to share the results of the analysis.
- the service provider has proactive processes that actively look for the identification of safety risks through the analysis of the organisation's activities.
- there is training relevant to proactive methods of safety data collection.
- the service provider has developed communication relevant to proactive methods of safety data collection.
- proactive reporting is simple, accessible and commensurate with the size of the service provider.
- the service provider has predictive processes that provide the capture of system performance as it happens in real-time normal operations.
- there is training relevant to predictive methods of safety data collection.

- the service provider has developed communication relevant to predictive methods of safety data collection.
- the predictive safety data capture process is commensurate with the size of the service provider.

2.2 Safety risk assessment and mitigation

The organisation must develop and maintain a formal process that ensures analysis, assessment and control of the safety risks in the organisation's operations.

The ***Safety risk assessment and mitigation*** element of the SMS outlines how an organization develops and maintains a formal process that ensures analysis, assessment and control of the safety risks in their operations. When assessing this element the IAA verify the organisation has a satisfactory and effective system by auditing the following:

- the organisation has developed and maintains a formal process that ensures analysis, assessment and control of the safety risks in the organisation operations.
- the organisation SMS documentation clearly articulates the relationship between hazards, consequences and safety risks.
- there is a structured process for the analysis of the safety risks associated with the consequences of identified hazards, expressed in terms of probability and severity of occurrence.
- there are criteria for assessing safety risks and establishing safety risk tolerability i.e. the acceptable level of safety risk the organisation is willing to accept.
- the service provider has safety risk mitigation strategies that include corrective/preventive action plans to prevent recurrence of reported occurrences and deficiencies.

Safety Assurance

3.1 Safety performance monitoring and measurement

The organisation must develop and maintain the means to verify the safety performance of the organisation and to validate the effectiveness of safety risk controls. The safety performance of the organisation must be verified in reference to the safety performance indicators and safety performance targets of the SMS.

The ***Safety performance monitoring and measurement*** element of an SMS outlines how an organisation develops and maintains the means to verify the safety performance of the organisation and to validate the effectiveness of safety risk controls. When assessing this element the IAA verify the organisation has a satisfactory and effective system by auditing the following:

- there is an internal process to verify the safety performance of the organisation and to validate the effectiveness of safety risks controls. This includes the use of safety reporting systems, safety studies, safety reviews, safety audits, safety surveys and internal safety investigations.
- safety reports are reviewed at the appropriate level of management and there is a feedback process to notify contributors that their reports have been received ensuring the results of the analysis is shared.
- procedures are in place for the conduct of internal investigations and to ensure that occurrences and deficiencies reported are analysed to identify all associated hazards.
- corrective and preventive actions are generated in response to hazard identification.
- there is a process for evaluating the effectiveness of the corrective/preventive measures that have been developed.
- there is an audit function with the independence and authority required to carry out effective internal evaluations covering all functions, activities and departments within the organisation. This includes ensuring that the auditors are adequately trained and act objectively and impartial to the organisation, there is a procedure outlining requirements for timely corrective and preventive actions in response to audit results, a procedure to record verification of action taken and a procedure for reporting audit results and maintaining records.
- the organisation has a system to monitor the internal reporting process and the associated corrective actions and to monitor and analyse trends in the data.
- the safety performance of the organisation is verified in reference to agreed safety performance indicators and safety performance targets for the organisation's SMS.

3.2 The management of change

The organisation must develop and maintain a formal process to identify changes within the organisation which may affect established processes and services; to describe the arrangements to ensure safety performance before implementing changes; and to eliminate or modify safety risk controls that are no longer needed or effective due to changes in the operational environment.

The ***management of change*** element of an SMS outlines how an organisation develops and maintains a formal process to identify changes within the organisation which may affect established processes and services; to describe the arrangements to ensure safety performance before implementing changes; and to eliminate or modify safety risk controls that are no longer needed or effective due to changes in the operational environment. When assessing this element the IAA verify the organisation has a satisfactory and effective system by auditing the following:

- there is a formal process to identify changes within the organisation which may affect established processes and services, specifically, changes to operations and key personnel.
- there are established arrangements to ensure safety performance prior to implementing changes.
- There is an established process to eliminate or modify safety risk controls that are no longer needed due to changes in the operational environment.

3.3 Continuous improvement of the SMS

The organisation must develop and maintain a formal process to identify the causes of substandard performance of the SMS, determine the implications of substandard performance of the SMS in operations, and eliminate or mitigate such causes.

The ***continuous improvement*** element of the SMS outlines how the organisation develops and maintains a formal process to identify the causes of substandard performance of the SMS, determine the implications of substandard performance of the SMS in operations, and eliminate or mitigate such causes. When assessing this element the IAA verify the organisation has a satisfactory and effective system by auditing the following:

- the organisation has developed and maintains a formal process to identify the causes of substandard performance of the SMS and the implications of the substandard performance on operations.
- the organisation has established a mechanism to eliminate or mitigate the causes of substandard performance of the SMS.
- the organisation has a process for the proactive evaluation of facilities, equipment, documentation and procedures (through audits and surveys, etc.).
- the organisation has a process for the proactive evaluation of an individual's performance, to verify the fulfilment of that individual's safety responsibilities.

Safety Promotion

4.1 Training and education

The organisation must develop and maintain a safety training programme that ensures that personnel are trained and competent to perform the SMS duties. The scope of the safety training has to be appropriate to each individual's involvement in the SMS.

The ***training and education*** element outlines how an organisation develops and maintains a safety training programme that ensures that personnel are trained and competent to perform the SMS duties. The scope of the safety training must be appropriate to each individual's involvement in the SMS. When assessing this element the IAA verify the organisation has a satisfactory and effective system by auditing the following:

- there is a documented process to identify training requirements so that personnel are trained and competent to perform their SMS duties.
- the safety training is appropriate to the individual's involvement in the SMS.
- the safety training is incorporated into indoctrination training upon employment.
- there is emergency response/contingency training for affected personnel.
- there is a process that measures the effectiveness of training.

4.2 Safety Communication

The organisation must develop and maintain formal means for safety communication that ensures that all personnel are fully aware of the SMS, conveys safety-critical information, and explains why particular safety actions are taken and why safety procedures are introduced or changed.

The Safety communication element of the SMS outlines how an organisation implements and maintains a formal means for safety communication that ensures that all personnel are fully aware of the SMS, conveys safety-critical information, and explains why particular safety actions are taken and why safety procedures are introduced or changed. When assessing this element the IAA verify the organisation has a satisfactory and effective system by auditing the following:

- there are communication processes in place within the organisation that permit the safety management system to function effectively.
- there are communication processes (written, meetings, electronic, etc.) commensurate with the size and scope of the service provider.
- safety-critical information is established and maintained in a suitable medium that provides direction regarding relevant SMS documents.
- safety-critical information is disseminated throughout the organisation and that the effectiveness of safety communication is monitored.
- there is a procedure that explains why particular safety actions are taken and why safety procedures are introduced or changed.

Safety Culture Survey

In this section the results of the Cultural Survey are presented. In order to provide the greatest level of transparency the detailed results for each question are tabulated. For ease of reading, a synopsis of the salient points for each of the questions, grouped under the 4 components of the SMS system, are presented below. Additionally a synopsis of the 'free text' comments received from some respondents (230 of the 1,044 respondents provided additional comments) is also included.

It is worth noting that some of the attitudinal statements could be interpreted as belonging to more than one of the groupings outlined. Secondly some of the core business categories had quite a small number of responses which were proportional when the overall numbers employed in those categories were taken into consideration. However it in turn means some of the responses then had a greater weighting on the results.

We invite all stakeholders to analyse the data and establish what you or your organisation can learn from the results. The IAA will use the data to focus the IAA's efforts in improving safety culture and SMS implementation in Ireland. This will become observable to stakeholders in numerous ways such as additional promotional material and more focussed auditing on particular aspects of SMS implementation.

Survey Structure and Timeline

The survey was open to all members of the aviation industry who wished to participate. The length of time the survey was originally to run was a month however at the end of that period the IAA was receiving a large number of responses. As a result the deadline to submit was extended by 2 weeks. In total the survey ran for six weeks. At the end of the extension very few responses were being submitted. This suggests the survey ran for a sufficient length of time for everyone who wished to participate to do so; however it does not guarantee that all sections of industry were representatively sampled.

A total of 1,044 members of industry responded, which was far higher then anticipated. Enterprise Ireland figures suggest there are approximately 11,000-12,000 people employed in all aviation related activities in Ireland.

Completed surveys could be submitted electronically through the IAA website or by posting them into the IAA. The survey was promoted in four ways:

- Organisation Safety managers were asked to notify their staff of the survey and were provided with an electronic version of the survey for their staff;

- IAA staff who were meeting their counterparts in industry brought paper copies of the survey with them and asked their counterparts to complete and return them at their leisure;
- Paper copies of the survey were left in the public areas of IAA headquarters for members of industry to complete.
- On the IAA website

The survey consisted of three sections. The first collected demographic information such as the area the respondent worked it. The second section consisted of 35 statements and respondents were asked to indicate on the five-point Likert scale (strongly disagree, disagree, no opinion, agree or strongly agree) their perception of the statement as it applied to their situation in their organization. The statements measured the participants' perceptions on areas such as safety policy, commitment, lessons learnt, communication, acceptable behaviour, hazards etc.

The final section was an open text box in which participants could write a comment.

As this is a survey rather then a census and it's the first of its type conducted by the IAA it is hard to assess how accurately it reflects attitudes in industry. However every care has been taken to reach all sections of the industry.

Questions related to Safety Policy and Objective

Q1. I am aware of my organisation's safety policy statement.

Q2. All employees at all levels are aware of the safety policy statement.

The results of the survey indicate a very strong individual awareness among respondents of their company safety policy statement. One interesting trend is that some respondents indicated that other staff might not be as aware as they themselves were. 26% of airline respondents disagreed or strongly disagreed while 37% of ANS respondents disagreed or strongly disagreed.

Q4. The safety policy statement is applicable to all levels within the organisation.

69% of respondents agreed or strongly agreed with this statement. 20% of airline respondents did not feel it applied at all levels of their organisation.

Q3. The safety policy statement is an accurate reflection of the company's commitment to safety.

In total 75% of respondents agreed or strongly agreed with this statement. Maintenance part M subpart G/F and ground handling were the categories who replied with the highest level of disagreement 3 out of 13 and 3 out of 14 respondents respectively.

Q5. There is adequate corporate support for implementing and maintaining a positive safety culture in my organisation

Overall 73% of respondents agreed or strongly agreed with this statement. 21% of airline respondents and 24% of ANS respondents disagreed or strongly disagreed.

Q6. There is clear recognition within my organisation of the need to develop and foster a good safety culture

80% of respondents agreed or strongly agreed with this statement. Aerodrome operators, flight training organisations and maintenance training part 147 were all in 100% agreement, while 9 of the 13 maintenance part M subpart G/F participants agreed.

Q8. Compliance with regulatory requirements is viewed as essential in maintaining a good safety culture.

89% agreed or strongly agreed with this question, demonstrating an understanding that regulation compliance in aviation is essential for safety. This high level of agreement was reflected across all categories.

Q17. Any safety concerns can be communicated to the next level in a non-punitive atmosphere.

71% agreed or strongly agreed that they can. It is worth examining the areas where there is disagreement on this question as a key test of any safety policy and objective is to ensure the organisation's personnel are willing to report any safety concerns and are not concerned that the will be punished for reporting any safety concerns or events. . 3 of the 13 of maintenance part M subpart G/F, 20% of airline and 20% of ANS personnel disagreed or strongly disagreed

Q22. In my organisation the concept of human error is understood.

In total 74% agreed or strongly agreed with this statement. Within ground handling operations half of the respondents disagreed or strongly disagreed that their organisation understood this concept. 4 of 13 maintenance part M subpart G/F partticipants agreed and 24% of respondents in ANS also disagreed or strongly disagreed.

Q23. Wilful acts of violation are not tolerated.

Overall 90% of respondents indicated they agreed or strongly agreed that wilful acts of violation are not tolerated in their organisations. ANS and maintenance part M subpart G/F returned lesser percentages of agreement, 74% and 69% respectively.

Q24. There is a distinction between genuine human error and wilful acts of violation.

81% of respondents agreed or strongly agreed that their organisations clearly understood the difference between genuine human error and wilful acts of violation. The exception is in the ground handling area where 36% of respondents disagreed or strongly disagreed that their organisations distinguish between genuine human error and wilful acts of violation.

Q25. Acceptable behaviour and unacceptable behaviour is clearly defined and understood.

75% agreed or strongly agreed that acceptable behaviour and unacceptable behaviour is clearly defined and understood. 5 of 13 respondents in the maintenance part M subpart F/G organisations disagreed with the statement. No part M or subpart F/G participants strongly disagreed with this statement.

Q28. Everybody is encouraged to develop and apply their own skills and knowledge in order to enhance organisational safety

58% agreed or strongly agreed with this statement while 18% had no opinion. Aerodrome operators (82%), commercial helicopter operators (87%), flight training organisations (7 of 8 respondents) and maintenance training part 147 organisations (6 of 8 respondents) agreed or strongly agreed

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Questions related to Safety Risk Management

Q15. I believe that "lessons learnt" provide a valuable means of strengthening our safety culture.

96% agreed (56% strongly agreed and 40% agreed) that lessons learnt provide a valuable means of strengthening safety culture. Similar levels of agreement were recorded across all business categories.

Q18. Safety concerns once raised are dealt with in a timely and comprehensive manner.

There was a 64% level of agreement overall that safety concerns once raised are dealt with in a timely and comprehensive manner. 62% for the Airline category, 61% for ANS and 6 of 13 participents for the Maintenance Part M subpart G/F category.

Q19. There is little point in reporting safety hazards.

A total of 77% of participants disagreed with this statement. 74% of the airline category disagreed or strongly disagree while 15% agreed or strongly agreed. ANS respondents recorded 90% disagreement or strong disagreement with the statement and 11 of 13 part M and subpart G/F respondents did so.

Q22. In my organisation the concept of human error is understood.

74% agreed or strongly agreed while 16% disagreed or strongly disagreed. In ANS 69% agreed or strongly disagreed while Maintenance Part M subpart G/F showed 8 of 13 respondents and Ground Handling 7 out of 14 respondents agreed or strong agreed with the statement.

Q26. In my organisation everybody is encouraged to voice any safety concerns.

There was 75% overall agreement with this statement with 75% in ANS and 72% in airline respondents. There was 15% disagreement with 9% expressing no opinion overall.

Q27. Reported safety concerns are analysed and appropriate subsequent action undertaken.

Q18. Safety concerns once raised are dealt with in a timely and comprehensive manner.

These questions were similar in that they addressed follow-up analysis and mitigation and both returned very similar results. Q18 returned 64% level of agreement overall while Q27 returned 69% level of agreement overall.

Q21. My organisation is sensitive to the influence of various national cultures in determining its own organisational culture.

There was a high level of 'no opinion' to this statement, with 34% overall expressing no opinion. It is possible that a number of respondents were unsure of the influence of national culture in their area as it may not affect them directly. This rose to 61% for ANS. Along with the high level of no opinions there was 21% overall disagreement which rose to 35% (5 of 14) for the ground handling sector.

Questions related to Safety Assurance

Q5. There is adequate corporate support for implementing and maintaining a positive safety culture in my organisation.

Overall 73% of respondents agreed or strongly agreed with this statement. 21% of airline respondents, 3 of 13 maintenance part M subpart G/F and 24% of ANS respondents disagreed or strongly disagreed.

Q9. The effectiveness of the Quality department plays a key role in fostering a positive safety culture.

A key feature of the safety audit and performance element is the effective auditing of the system. The results indicate that overall the majority (75%) of respondents believe the effectiveness of the Quality department plays a key role in fostering a positive safety culture. This falls to 51% agreed or strongly agreed in the ANS category.

Q16. There is a willingness to learn from the experience of other organisations.

74% of respondents agreed or strongly agreed that organisations are willing to learn from others mistakes. Within ANS the level of agreement with the statement dropped to 53%.

Q17. Any safety concerns can be communicated to the next level in a non-punitive atmosphere.

Overall 71% agreed or strongly agreed with this statement. Regarding categories, the respondents varied from everyone agreeing in both maintenance training 147 and flight training organisations to 67% agreement for airlines.

Q18. Safety concerns once raised are dealt with in a timely and comprehensive manner.

In total only 64% of respondents agreed or strongly agreed that concerns once raised are dealt with in a timely and comprehensive manner. The categories that returned the lowest levels of agreement were maintenance part M subpart G/F (6 of 13), ANS (61%), airline (62%) and maintenance part 145 (66%).

Q19. There is little point in reporting safety hazards.

77% disagreed or strongly disagreed with this statement, Key to a good SMS system is the willingness of staff to report safety events, hazards or safety concerns. It is evident from the survey results that the respondents believe this to be the case.

Q26. In my organisation everybody is encouraged to voice any safety concerns.

Overall 75% agreed with this statement. Airline (17%), ANS (18%) and maintenance part M subpart G/F (3 of 13) returned the highest levels of disagreement.

Q27. Reported safety concerns are analysed and appropriate subsequent action undertaken.

In total 69% agreed or strongly agreed that reported safety concerns are analysed and appropriate subsequent action undertaken. 16% of the overall respondents expressed no opinion. ANS respondents had 22% who disagreed or strongly disagreed that their organisation analyse safety concerns and take appropriate action.

Q28. Everybody is encouraged to develop and apply their own skills and knowledge in order to enhance organisational safety.

Overall 58% agreed or strongly agreed with the statement while 25% of airline, 4 of 14 of ground handling and 20% of ANS participants did not agree.

Q29. All staff are regularly updated on safety issues by management.

Q30. Safety reports are regularly feedback to frontline staff so that everyone learns the lessons.

In total 65% agreed or strongly agreed that safety reports are regularly feedback to frontline staff so that everyone learns the lessons. of 6 of 13 maintenance part M subpart G/F, 35% of ANS and 6 of 22 aerodrome operators disagreed or strongly disagreed.

Q32. Staff work continuously to identify and overcome threats to safety.

While overall 64% of the respondents agreed or strongly agreed with the statement, the levels of agreement varied.

Q33. While safety is important there is a limited supply of resources available and so it's not possible to invest fully in safety.

57% of participants disagreed or strongly disagreed with this statement. 11 of 14 ground handling and 6 of 13 maintenance training part 147 disagreed or strongly disagreed with this statement. The competition for resources has been discussed under 'the management dilemma' heading and the subsequent consequences have also been referred to.

Q34. The current challenging economic climate has resulted in re-organisation and/or downsizing which makes investment in safety difficult.

Overall there was 30% agreement with this statement and 54% disagreement with 17% no opinion. Part 147 respondents recorded the highest level of agreement with 5 of 8 respondents agreeing.

Q35. Our safety culture is excellent and requires no further improvement.

72% disagree or strongly disagree with the statement that their existing safety culture is excellent and requires no further improvement. This is important as it shows an understanding of the need for continuous improvement. There were a number of comments submitted by respondents related to this question and these are discussed later in this section.

Questions related to Safety Promotion

Q9. The effectiveness of the Quality department plays a key role in fostering a positive safety culture.

75% of participants agreed (51%) or strongly agree (24%). A further 15% neither agreed nor disagreed with the statement. The figures for the commercial helicopter, maintenance, airline operators and ground handlers were very similar to each other and the overall trend. 51% of ANS respondents agreed or strongly agreed.

Q10. Strong leadership skills are instrumental in promoting a positive safety culture.

85% of participants agreed (48%) or strongly agree (37%) that strong leadership skills are instrumental in promoting a positive safety culture. When the responses were examined by sector the responses mirrored the overall trend.

Q11. Staff training is viewed as playing an integral part in fostering a better safety culture.

49% of respondents agreed with the statement and 39% strongly agreed with the statement. Overall agreement with the statement was 88%. 6% of airline respondents either strongly disagreed or disagreed with the statement.

Q12. Good communication is an essential mechanism in fostering a better safety culture.

The majority of respondents (94%) agreed good communication is an essential mechanism in fostering a better safety culture. 2% of the overall respondents disagreed; these respondents were from the ANS and Airlines sector.

Q13. The circulation of information is viewed as key in nurturing safety culture.

50% of respondents agreed that circulation of information is viewed as key in nurturing safety culture and a further 39% strongly agreed with it; hence overall agreement with the statement was 89%.

Q14. All employees are regularly informed about "lessons learnt" from incidents or near misses.

69% agreed or strongly agreed with this statement. 23% of respondents either disagreed (18%) or strongly disagreed (5%). A further 7% neither agreed nor disagreed with the statement. 49% of ANS respondents and 23% of respondents in the airline sector answered they disagreed with the statement.

Q15. I believe that "lessons learnt" provide a valuable means of strengthening our safety culture.

96% of respondents either agreed (40%) or strongly agreed (56%) that "lessons learnt" provide a valuable means of strengthening their safety culture. Regardless of the sector the respondents were employed in their scores mirrored the overall trend.

Q26. In my organisation everybody is encouraged to voice any safety concerns.

Overall 75% of respondents either agreed (53%) or strongly agreed (22%) with the statement while 15% of respondents disagreed and a further 9% neither agreed nor disagreed. 53% of Part 145 maintenance respondents agreed with the statement and 25% strongly agreed which is higher then the overall trend. 53% of ANS respondents agreed and a further 22% strongly agreed while 18% disagreed or strongly disagreed with the statement.

Q28. Everybody is encouraged to develop and apply their own skills and knowledge in order to enhance organisational safety.

58% of the overall respondents agreed or strongly agreed with the statement while 23% disagreed or strongly disagreed. 87% of commercial helicopter operators scored either an agree (76%) or strongly agree (11%). Only 8 of the 14 ground handlers who responded agreed or strongly agreed with the statement.

Q29. All staff are regularly updated on safety issues by management.

72% agreed or strongly agreed and a total of 17% of respondents disagreed or strongly disagreed they are updated on safety issues by management. A further 10% neither agreed nor disagreed with the statement. 30% of ANS did not agree they are regularly updated by management and a

further 6% strongly disagreed they are updated. Another 10% neither agreed nor disagreed with the statement. In contrast 12 of the 14 ground handlers who responded agreed or strongly agreed with the statement.

Q30. Safety reports are regularly feedback to frontline staff so that everyone learns the lessons.

65% of respondents agreed or strongly agreed with the statement. Responses in the airline and maintenance sectors closely resemble the overall trend. 35% of respondents working in ANS disagreed with the statement; this is a higher negative result then the overall trend. In contrast 11 of the 14 ground handlers agreed with the statement.

Q31. Staff at all levels, fully understand the hazards and risks of their own operation.

Overall 48% of respondents agreed and a further 11% strongly agreed with the statement 'Staff at all levels, fully understand the hazards and risks of their own operation' while 25% of respondents either strongly disagreed or disagreed with the statement. 63% of respondents from ANS either agreed (53%) or strongly agreed (10%) with the statement while 28% indicated that they strongly disagreed or disagreed.

General (Free-Text) Comments Received

The IAA received over 230 individual free text comments from the 1,044 respondents. It would not have been appropriate to publish these comments in full as many contained information that would allow identification of individual organisations or persons.

The comments varied in subject matter, however there were a number of common themes. The top twelve themes accounted for 243 of the 275 comments (some free text comments submitted contained comments for a number of groupings).

The greatest number of comments, almost 90 in total, related to the implementation of safety culture in the respondents organisations. These comments ranged across the spectrum from stating that the safety culture in their organisation was excellent to completely ineffective. A common message was the ongoing balancing act between commercial/operational imperatives and safety imperatives.

Many respondents expressed concern that their organisations are more focussed on the commercial issues and are placing greater emphasis on operational priorities than on safety priorities. Also, some respondents felt that their organisations are not encouraging and supportive to staff when they raise safety concerns. Another issue to arise under the safety culture theme is that the safety culture will vary across different functional areas of a single organisation. Some highlighted that their area has an excellent safety culture but that in other areas of their organisation the SMS safety culture is effectively non-existent and is not promoted.

There was a large number of comments (approximately 28 of the 230 received) relating to question 35 of the survey – 'Our safety culture is excellent and requires no further improvement.' Respondents made the point that while their organisation's SMS may be excellent there is always room for improvement. The comment *'everyone keeps learning when dealing with safety, always room for improvement'* is a typical example of the responses received.

The issue of airline rostering was raised in 20 of the comments and in many cases the text included comments relating to another common theme – fatigue. 14 respondents felt that some rostering practices are leading to greater levels of fatigue than would previously have been the case and is impacting on morale in their area. The implementation of flight time limitations regulation was also raised in 17 of the free text comments . Some respondents felt that the need to position to a particular location should be considered in flight time limitation calculations and that the current EU regulation maximum flight time limitation of 900 hours per year is not appropriate for all aircraft operation types.

Workload was also cited in a number of responses (14 free text comments). Respondents felt their workload was continuously increasing and was leading to greater levels of fatigue and less time to consider safety related tasks.

18 of the 230 comments contained criticism of the IAA. These varied from IAA 'over regulating' and being too restrictive in implementing regulation to the IAA not regulating and not performing enough oversight.

There were 11 comments about the competency levels of co-workers. Flight Crew respondents commented that there is an over-reliance on automated systems on aircraft and younger pilots are not gaining enough experience on manually flying the aircraft. Lack of adequate English language proficiency among flight and cabin crew was also cited.

A small number of comments (11 of the 230) discussed the subject of safety promotion and felt both their employer and the IAA could be doing a better job in promoting better safety practices. The system of confidential reporting was mentioned by 8 participants. The comments grouped around two main issues - the organisation's confidential reporting system does not provide feedback and, secondly, people should be able to report safety concerns directly to the IAA in a confidential manner when they feel they cannot use their organisation's system. (this facility is now available on the IAA website).

Other comments received included topics such as safety learning and safety feedback, regulation, aerodrome design, use of standard operating procedures and indeed the survey itself.

Appendix A: Detailed Survey Results

The following section provides the detailed results for each question. The first page contains the results of the demographic information provided. The following pages then contain the results for each question. Each page contains the results of a single question with the results organised in two ways:

As a simple count subcategorised by industry sector

As a percentage of the industry sector

Demographic Data

Count of QC	QC						
FunctionalArea	16-19	20-29	30-39	40-49	50-59	60+	NA	Grand Total
Administration		4	6	4	7			21
ATCO		1	10	3	1			15
CabinCrew		45	31	12	3			91
Engineering		11	36	27	22	4	1	101
FlightCrew	2	125	250	181	60	9		627
NA			1	1				2
OperationalSupport		5	14	17	7	3		46
Other			1	1		1		3
SeniorManagement		1	20	33	23	9		86
Training		5	15	21	7	3	1	52
Grand Total	2	197	384	300	130	29	2	1044

Count of QD	QD			
FunctionalArea	Female	Male	NA	Grand Total
Administration	9	11	1	21
ATCO	3	12		15
CabinCrew	48	38	5	91
Engineering	3	96	2	101
FlightCrew	24	585	18	627
NA		2		2
OperationalSupport	11	33	2	46
Other	1	2		3
SeniorManagement	8	74	4	86
Training	4	47	1	52
Grand Total	111	900	33	1044

Count of QD	QC						
QD	16-19	20-29	30-39	40-49	50-59	60+	NA	Grand Total
Female		31	49	21	9	1		111
Male	1	158	322	272	118	28	1	900
NA	1	8	13	7	3		1	33
Grand Total	2	197	384	300	130	29	2	1044

Detailed Responses For Each Question

Question 1: I am aware of my organisation's safety policy statement:

Count of Q1	Q1			
QA_CoreBusiness	Aware	NA	Unaware	Grand Total
AerodromeOperator	22			22
Airline	743	2	68	813
ANS	43	1	5	49
Commercial Helicopter Operator	38			38
Ground Handling	14			14
Other	11	1		12
Maintenance Part M Subpart G/F	10	1	2	13
Flight Training Organisation	8			8
MaintenanceOrganisation(Part 145)	62		5	67
Maintenance Training Part 147	8			8
Grand Total	959	5	80	1044

Count of Q15	Q1			
QA_CoreBusiness	Aware	NA	Unaware	Grand Total
AerodromeOperator	100%	0%	0%	100%
Airline	91%	0%	8%	100%
ANS	88%	2%	10%	100%
Commercial Helicopter Operator	100%	0%	0%	100%
Ground Handling	100%	0%	0%	100%
Other	92%	8%	0%	100%
Maintenance Part M Subpart G/F	77%	8%	15%	100%
Flight Training Organisation	100%	0%	0%	100%
MaintenanceOrganisation(Part 145)	93%	0%	7%	100%
Maintenance Training Part 147	100%	0%	0%	100%
Grand Total	92%	0%	8%	100%

Question 2: All employees at all levels are aware of the safety policy statement.

Count of Q2	Q2						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	1	4	1	10	6		22
Airline	38	171	97	378	126	3	813
ANS	1	17	8	20	3		49
Commercial Helicopter Operator			3	28	7		38
Ground Handling	1	1		9	3		14
Other		1		7	3	1	12
Maintenance Part M Subpart G/F	1	4	2	4	2		13
Flight Training Organisation				8			8
MaintenanceOrganisation(Part 145)		14	12	34	6	1	67
Maintenance Training Part 147	1	2		4	1		8
Grand Total	43	214	123	502	157	5	1044

Count of Q2	Q2						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	5%	18%	5%	45%	27%	0%	100%
Airline	5%	21%	12%	46%	15%	0%	100%
ANS	2%	35%	16%	41%	6%	0%	100%
Commercial Helicopter Operator	0%	0%	8%	74%	18%	0%	100%
Ground Handling	7%	7%	0%	64%	21%	0%	100%
Other	0%	8%	0%	58%	25%	8%	100%
Maintenance Part M Subpart G/F	8%	31%	15%	31%	15%	0%	100%
Flight Training Organisation	0%	0%	0%	100%	0%	0%	100%
MaintenanceOrganisation(Part 145)	0%	21%	18%	51%	9%	1%	100%
Maintenance Training Part 147	13%	25%	0%	50%	13%	0%	100%
Grand Total	4%	20%	12%	48%	15%	0%	100%

Question 3: The safety policy statement is an accurate reflection of the company's commitment to safety.

Count of Q3	Q3						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator		1	1	11	9		22
Airline	29	101	94	403	178	8	813
ANS		5	8	27	9		49
Commercial Helicopter Operator		2	2	23	10	1	38
Ground Handling	2	1		2	9		14
Other				8	3	1	12
Maintenance Part M Subpart G/F		3		9	1		13
Flight Training Organisation				5	3		8
MaintenanceOrganisation(Part 145)		4	8	43	12		67
Maintenance Training Part 147				7	1		8
Grand Total	31	117	113	538	235	10	1044

Count of Q3	Q3						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	0%	5%	5%	50%	41%	0%	100%
Airline	4%	12%	12%	50%	22%	1%	100%
ANS	0%	10%	16%	55%	18%	0%	100%
Commercial Helicopter Operator	0%	5%	5%	61%	26%	3%	100%
Ground Handling	14%	7%	0%	14%	64%	0%	100%
Other	0%	0%	0%	67%	25%	8%	100%
Maintenance Part M Subpart G/F	0%	23%	0%	69%	8%	0%	100%
Flight Training Organisation	0%	0%	0%	63%	38%	0%	100%
MaintenanceOrganisation(Part 145)	0%	6%	12%	64%	18%	0%	100%
Maintenance Training Part 147	0%	0%	0%	88%	13%	0%	100%
Grand Total	3%	11%	11%	52%	23%	1%	100%

Question 4: The safety policy statement is applicable to all levels within the organisation.

Count of Q4	Q4						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	1	1	1	7	12		22
Airline	31	129	121	397	128	7	813
ANS		5	8	24	12		49
Commercial Helicopter Operator		1	3	24	10		38
Ground Handling		1		4	9		14
Other				5	4	3	12
Maintenance Part M Subpart G/F		1	1	7	4		13
Flight Training Organisation				4	4		8
MaintenanceOrganisation(Part 145)		1	8	41	17		67
Maintenance Training Part 147				1	7		8
Grand Total	32	139	142	514	207	10	1044

Count of Q4	Q4						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	5%	5%	5%	32%	55%	0%	100%
Airline	4%	16%	15%	49%	16%	1%	100%
ANS	0%	10%	16%	49%	24%	0%	100%
Commercial Helicopter Operator	0%	3%	8%	63%	26%	0%	100%
Ground Handling	0%	7%	0%	29%	64%	0%	100%
Other	0%	0%	0%	42%	33%	25%	100%
Maintenance Part M Subpart G/F	0%	8%	8%	54%	31%	0%	100%
Flight Training Organisation	0%	0%	0%	50%	50%	0%	100%
MaintenanceOrganisation(Part 145)	0%	1%	12%	61%	25%	0%	100%
Maintenance Training Part 147	0%	0%	0%	13%	88%	0%	100%
Grand Total	3%	13%	14%	49%	20%	1%	100%

Question 5: There is adequate corporate support for implementing and maintaining a positive safety culture in my organisation.

Count of Q5	Q5						
QA Core Business	1	2	3	4	5	.	Grand Total
Aerodrome Operator		1	2	15	4		22
Airline	43	131	61	407	167	4	813
ANS	2	10	3	26	8		49
Commercial Helicopter Operator		3	1	23	11		38
Ground Handling	1	1		4	7	1	14
Other		2	1	5	2	2	12
Maintenance Part M Subpart G/F		3	1	7	2		13
Flight Training Organisation				5	3		8
Maintenance Organisation (Part 145)		6	1	42	18		67
Maintenance Training Part 147				3	5		8
Grand Total	46	157	70	537	227	7	1044

Count of Q5	Q5						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
Aerodrome Operator	0%	5%	9%	68%	18%	0%	100%
Airline	5%	16%	8%	50%	21%	0%	100%
ANS	4%	20%	6%	53%	16%	0%	100%
Commercial Helicopter Operator	0%	8%	3%	61%	29%	0%	100%
Ground Handling	7%	7%	0%	29%	50%	7%	100%
Other	0%	17%	8%	42%	17%	17%	100%
Maintenance Part M Subpart G/F	0%	23%	8%	54%	15%	0%	100%
Flight Training Organisation	0%	0%	0%	63%	38%	0%	100%
Maintenance Organisation (Part 145)	0%	9%	1%	63%	27%	0%	100%
Maintenance Training Part 147	0%	0%	0%	38%	63%	0%	100%
Grand Total	4%	15%	7%	51%	22%	1%	100%

Question 6: There is clear recognition within my organisation of the need to develop and foster a good safety culture.

Count of Q6	Q6						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator				11	11		22
Airline	27	104	52	401	226	3	813
ANS		5	1	30	13		49
Commercial Helicopter Operator		1	3	22	12		38
Ground Handling	1			6	7		14
Other				7	3	2	12
Maintenance Part M Subpart G/F		3	1	8	1		13
Flight Training Organisation				4	4		8
MaintenanceOrganisation(Part 145)	1	2	2	46	16		67
Maintenance Training Part 147				4	4		8
Grand Total	29	115	59	539	297	5	1044

Count of Q6	Q6						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	0%	0%	0%	50%	50%	0%	100%
Airline	3%	13%	6%	49%	28%	0%	100%
ANS	0%	10%	2%	61%	27%	0%	100%
Commercial Helicopter Operator	0%	3%	8%	58%	32%	0%	100%
Ground Handling	7%	0%	0%	43%	50%	0%	100%
Other	0%	0%	0%	58%	25%	17%	100%
Maintenance Part M Subpart G/F	0%	23%	8%	62%	8%	0%	100%
Flight Training Organisation	0%	0%	0%	50%	50%	0%	100%
MaintenanceOrganisation(Part 145)	1%	3%	3%	69%	24%	0%	100%
Maintenance Training Part 147	0%	0%	0%	50%	50%	0%	100%
Grand Total	3%	11%	6%	52%	28%	0%	100%

Question 7: Safety is everybody's business.

Count of Q7	Q7						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator					22		22
Airline	7	26	16	188	574	2	813
ANS				12	37		49
Commercial Helicopter Operator				7	31		38
Ground Handling					14		14
Other				3	7	2	12
Maintenance Part M Subpart G/F				3	10		13
Flight Training Organisation					8		8
MaintenanceOrganisation(Part 145)	1			15	51		67
Maintenance Training Part 147					8		8
Grand Total	8	26	16	228	762	4	1044

Count of Q7	Q7						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	0%	0%	0%	0%	100%	0%	100%
Airline	1%	3%	2%	23%	71%	0%	100%
ANS	0%	0%	0%	24%	76%	0%	100%
Commercial Helicopter Operator	0%	0%	0%	18%	82%	0%	100%
Ground Handling	0%	0%	0%	0%	100%	0%	100%
Other	0%	0%	0%	25%	58%	17%	100%
Maintenance Part M Subpart G/F	0%	0%	0%	23%	77%	0%	100%
Flight Training Organisation	0%	0%	0%	0%	100%	0%	100%
MaintenanceOrganisation(Part 145)	1%	0%	0%	22%	76%	0%	100%
Maintenance Training Part 147	0%	0%	0%	0%	100%	0%	100%
Grand Total	1%	2%	2%	22%	73%	0%	100%

Question 8: Compliance with regulatory requirements is viewed as essential in maintaining a good safety culture

Count of Q8	Q8						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator				5	16	1	22
Airline	9	39	42	414	305	4	813
ANS		1	5	23	20		49
Commercial Helicopter Operator	1	1	2	22	12		38
Ground Handling				1	13		14
Other				6	4	2	12
Maintenance Part M Subpart G/F			2	8	3		13
Flight Training Organisation			1	2	5		8
MaintenanceOrganisation(Part 145)			3	28	36		67
Maintenance Training Part 147				5	3		8
Grand Total	10	41	55	514	417	7	1044

Count of Q8	Q8						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	0%	0%	0%	23%	73%	5%	100%
Airline	1%	5%	5%	51%	38%	0%	100%
ANS	0%	2%	10%	47%	41%	0%	100%
Commercial Helicopter Operator	3%	3%	5%	58%	32%	0%	100%
Ground Handling	0%	0%	0%	7%	93%	0%	100%
Other	0%	0%	0%	50%	33%	17%	100%
Maintenance Part M Subpart G/F	0%	0%	15%	62%	23%	0%	100%
Flight Training Organisation	0%	0%	13%	25%	63%	0%	100%
MaintenanceOrganisation(Part 145)	0%	0%	4%	42%	54%	0%	100%
Maintenance Training Part 147	0%	0%	0%	63%	38%	0%	100%
Grand Total	1%	4%	5%	49%	40%	1%	100%

Question 9: The effectiveness of the Quality department plays a key role in fostering a positive safety culture.

Count of Q9	Q9						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
Aerodrome Operator		1	5	9	5	2	22
Airline	9	56	120	432	191	5	813
ANS	1	10	12	17	8	1	49
Commercial Helicopter Operator	1	2	3	21	11		38
Ground Handling		1	2	4	6	1	14
Other		1	2	4	3	2	12
Maintenance Part M Subpart G/F		1	2	8	2		13
Flight Training Organisation			1	4	3		8
Maintenance Organisation(Part 145)	1	5	6	34	21		67
Maintenance Training Part 147				4	4		8
Grand Total	12	77	153	537	254	11	1044

Count of Q9	Q9						
QA_Core Business	1	2	3	4	5	.	Grand Total
Aerodrome Operator	0%	5%	23%	41%	23%	9%	100%
Airline	1%	7%	15%	53%	23%	1%	100%
ANS	2%	20%	24%	35%	16%	2%	100%
Commercial Helicopter Operator	3%	5%	8%	55%	29%	0%	100%
Ground Handling	0%	7%	14%	29%	43%	7%	100%
Other	0%	8%	17%	33%	25%	17%	100%
Maintenance Part M Subpart G/F	0%	8%	15%	62%	15%	0%	100%
Flight Training Organisation	0%	0%	13%	50%	38%	0%	100%
Maintenance Organisation(Part 145)	1%	7%	9%	51%	31%	0%	100%
Maintenance Training Part 147	0%	0%	0%	50%	50%	0%	100%
Grand Total	1%	7%	15%	51%	24%	1%	100%

Question 10: Strong leadership skills are instrumental in promoting a positive safety culture

Count of Q10	Q10						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator			1	7	13	1	22
Airline	12	40	74	400	280	7	813
ANS		2	3	20	24		49
Commercial Helicopter Operator	1	2		20	15		38
Ground Handling				5	9		14
Other			1	4	5	2	12
Maintenance Part M Subpart G/F		1		8	4		13
Flight Training Organisation			1	3	3	1	8
MaintenanceOrganisation(Part 145)		2	3	33	29		67
Maintenance Training Part 147				2	6		8
Grand Total	13	47	83	502	388	11	1044

Count of Q10	Q10						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	0%	0%	5%	32%	59%	5%	100%
Airline	1%	5%	9%	49%	34%	1%	100%
ANS	0%	4%	6%	41%	49%	0%	100%
Commercial Helicopter Operator	3%	5%	0%	53%	39%	0%	100%
Ground Handling	0%	0%	0%	36%	64%	0%	100%
Other	0%	0%	8%	33%	42%	17%	100%
Maintenance Part M Subpart G/F	0%	8%	0%	62%	31%	0%	100%
Flight Training Organisation	0%	0%	13%	38%	38%	13%	100%
MaintenanceOrganisation(Part 145)	0%	3%	4%	49%	43%	0%	100%
Maintenance Training Part 147	0%	0%	0%	25%	75%	0%	100%
Grand Total	1%	5%	8%	48%	37%	1%	100%

Question 11: Staff training is viewed as playing an integral part in fostering a better safety culture

Count of Q11	Q11						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator				11	10	1	22
Airline	8	42	45	392	317	9	813
ANS		3	6	20	20		49
Commercial Helicopter Operator			1	23	14		38
Ground Handling	1			2	11		14
Other		1		5	4	2	12
Maintenance Part M Subpart G/F		1		9	3		13
Flight Training Organisation				5	3		8
MaintenanceOrganisation(Part 145)			4	37	25	1	67
Maintenance Training Part 147				3	5		8
Grand Total	9	47	56	507	412	13	1044

Count of Q11	Q11						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	0%	0%	0%	50%	45%	5%	100%
Airline	1%	5%	6%	48%	39%	1%	100%
ANS	0%	6%	12%	41%	41%	0%	100%
Commercial Helicopter Operator	0%	0%	3%	61%	37%	0%	100%
Ground Handling	7%	0%	0%	14%	79%	0%	100%
Other	0%	8%	0%	42%	33%	17%	100%
Maintenance Part M Subpart G/F	0%	8%	0%	69%	23%	0%	100%
Flight Training Organisation	0%	0%	0%	63%	38%	0%	100%
MaintenanceOrganisation(Part 145)	0%	0%	6%	55%	37%	1%	100%
Maintenance Training Part 147	0%	0%	0%	38%	63%	0%	100%
Grand Total	1%	5%	5%	49%	39%	1%	100%

Question 12: Good communication is an essential mechanism in fostering a better safety culture.

Count of Q12	Q12						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator				5	16	1	22
Airline	5	20	17	297	466	8	813
ANS		1		23	25		49
Commercial Helicopter Operator				14	24		38
Ground Handling				3	11		14
Other				4	6	2	12
Maintenance Part M Subpart G/F				8	5		13
Flight Training Organisation				1	7		8
MaintenanceOrganisation(Part 145)				32	35		67
Maintenance Training Part 147				3	5		8
Grand Total	5	21	17	390	600	11	1044

Count of Q12	Q12						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	0%	0%	0%	23%	73%	5%	100%
Airline	1%	2%	2%	37%	57%	1%	100%
ANS	0%	2%	0%	47%	51%	0%	100%
Commercial Helicopter Operator	0%	0%	0%	37%	63%	0%	100%
Ground Handling	0%	0%	0%	21%	79%	0%	100%
Other	0%	0%	0%	33%	50%	17%	100%
Maintenance Part M Subpart G/F	0%	0%	0%	62%	38%	0%	100%
Flight Training Organisation	0%	0%	0%	13%	88%	0%	100%
MaintenanceOrganisation(Part 145)	0%	0%	0%	48%	52%	0%	100%
Maintenance Training Part 147	0%	0%	0%	38%	63%	0%	100%
Grand Total	0%	2%	2%	37%	57%	1%	100%

Question 13: The circulation of information is viewed as key in nurturing safety culture

Count of Q13	Q13						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator		1		11	9	1	22
Airline	9	27	40	406	320	11	813
ANS	1	2		21	23	2	49
Commercial Helicopter Operator		1		17	20		38
Ground Handling				6	8		14
Other				7	4	1	12
Maintenance Part M Subpart G/F			2	9	2		13
Flight Training Organisation				4	4		8
MaintenanceOrganisation(Part 145)		1	2	39	25		67
Maintenance Training Part 147				4	4		8
Grand Total	10	32	44	524	419	15	1044

Count of Q13	Q13						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	0%	5%	0%	50%	41%	5%	100%
Airline	1%	3%	5%	50%	39%	1%	100%
ANS	2%	4%	0%	43%	47%	4%	100%
Commercial Helicopter Operator	0%	3%	0%	45%	53%	0%	100%
Ground Handling	0%	0%	0%	43%	57%	0%	100%
Other	0%	0%	0%	58%	33%	8%	100%
Maintenance Part M Subpart G/F	0%	0%	15%	69%	15%	0%	100%
Flight Training Organisation	0%	0%	0%	50%	50%	0%	100%
MaintenanceOrganisation(Part 145)	0%	1%	3%	58%	37%	0%	100%
Maintenance Training Part 147	0%	0%	0%	50%	50%	0%	100%
Grand Total	1%	3%	4%	50%	40%	1%	100%

Question 14: All employees are regularly informed about “lessons learnt” from incidents or near misses

Count of Q14	Q14						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator		6	3	9	3	1	22
Airline	44	146	55	389	171	8	813
ANS	3	21	2	18	5		49
Commercial Helicopter Operator		6	2	20	10		38
Ground Handling		1		7	6		14
Other		1	1	6	3	1	12
Maintenance Part M Subpart G/F	2	4		4	3		13
Flight Training Organisation				6	2		8
MaintenanceOrganisation(Part 145)		6	5	42	14		67
Maintenance Training Part 147	1	1	1	1	4		8
Grand Total	50	192	69	502	221	10	1044

Count of Q14	Q14						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	0%	27%	14%	41%	14%	5%	100%
Airline	5%	18%	7%	48%	21%	1%	100%
ANS	6%	43%	4%	37%	10%	0%	100%
Commercial Helicopter Operator	0%	16%	5%	53%	26%	0%	100%
Ground Handling	0%	7%	0%	50%	43%	0%	100%
Other	0%	8%	8%	50%	25%	8%	100%
Maintenance Part M Subpart G/F	15%	31%	0%	31%	23%	0%	100%
Flight Training Organisation	0%	0%	0%	75%	25%	0%	100%
MaintenanceOrganisation(Part 145)	0%	9%	7%	63%	21%	0%	100%
Maintenance Training Part 147	13%	13%	13%	13%	50%	0%	100%
Grand Total	5%	18%	7%	48%	21%	1%	100%

Question 15: I believe that “lessons learnt” provide a valuable means of strengthening our safety culture.

Count of Q15	Q15						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator				6	15	1	22
Airline	1	15	14	311	463	9	813
ANS				24	25		49
Commercial Helicopter Operator			1	15	22		38
Ground Handling		1		6	7		14
Other				6	5	1	12
Maintenance Part M Subpart G/F				3	10		13
Flight Training Organisation			1	3	4		8
MaintenanceOrganisation(Part 145)		1		40	26		67
Maintenance Training Part 147				3	5		8
Grand Total	1	17	16	417	582	11	1044

Count of Q15	Q15						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	0%	0%	0%	27%	68%	5%	100%
Airline	0%	2%	2%	38%	57%	1%	100%
ANS	0%	0%	0%	49%	51%	0%	100%
Commercial Helicopter Operator	0%	0%	3%	39%	58%	0%	100%
Ground Handling	0%	7%	0%	43%	50%	0%	100%
Other	0%	0%	0%	50%	42%	8%	100%
Maintenance Part M Subpart G/F	0%	0%	0%	23%	77%	0%	100%
Flight Training Organisation	0%	0%	13%	38%	50%	0%	100%
MaintenanceOrganisation(Part 145)	0%	1%	0%	60%	39%	0%	100%
Maintenance Training Part 147	0%	0%	0%	38%	63%	0%	100%
Grand Total	0%	2%	2%	40%	56%	1%	100%

Question 16: There is a willingness to learn from the experience of other organisations

Count of Q16	Q16						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator		3	3	10	5	1	22
Airline	34	81	93	381	213	11	813
ANS	2	8	12	19	7	1	49
Commercial Helicopter Operator		3	5	22	8		38
Ground Handling				9	5		14
Other			1	7	3	1	12
Maintenance Part M Subpart G/F		3		7	3		13
Flight Training Organisation				4	4		8
MaintenanceOrganisation(Part 145)		5	3	41	18		67
Maintenance Training Part 147			2	4	2		8
Grand Total	36	103	119	504	268	14	1044

Count of Q16	Q16						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	0%	14%	14%	45%	23%	5%	100%
Airline	4%	10%	11%	47%	26%	1%	100%
ANS	4%	16%	24%	39%	14%	2%	100%
Commercial Helicopter Operator	0%	8%	13%	58%	21%	0%	100%
Ground Handling	0%	0%	0%	64%	36%	0%	100%
Other	0%	0%	8%	58%	25%	8%	100%
Maintenance Part M Subpart G/F	0%	23%	0%	54%	23%	0%	100%
Flight Training Organisation	0%	0%	0%	50%	50%	0%	100%
MaintenanceOrganisation(Part 145)	0%	7%	4%	61%	27%	0%	100%
Maintenance Training Part 147	0%	0%	25%	50%	25%	0%	100%
Grand Total	3%	10%	11%	48%	26%	1%	100%

Question 17: Any safety concerns can be communicated to the next level in a non-punitive atmosphere

Count of Q17	Q17						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator		1	3	10	7	1	22
Airline	58	108	93	408	141	5	813
ANS	1	9	3	25	11		49
Commercial Helicopter Operator		2	3	26	7		38
Ground Handling		2	1	7	4		14
Other	1			9	1	1	12
Maintenance Part M Subpart G/F		3		7	3		13
Flight Training Organisation				4	4		8
MaintenanceOrganisation(Part 145)	1	1	4	45	16		67
Maintenance Training Part 147				4	4		8
Grand Total	61	126	107	545	198	7	1044

Count of Q17	Q17						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	0%	5%	14%	45%	32%	5%	100%
Airline	7%	13%	11%	50%	17%	1%	100%
ANS	2%	18%	6%	51%	22%	0%	100%
Commercial Helicopter Operator	0%	5%	8%	68%	18%	0%	100%
Ground Handling	0%	14%	7%	50%	29%	0%	100%
Other	8%	0%	0%	75%	8%	8%	100%
Maintenance Part M Subpart G/F	0%	23%	0%	54%	23%	0%	100%
Flight Training Organisation	0%	0%	0%	50%	50%	0%	100%
MaintenanceOrganisation(Part 145)	1%	1%	6%	67%	24%	0%	100%
Maintenance Training Part 147	0%	0%	0%	50%	50%	0%	100%
Grand Total	6%	12%	10%	52%	19%	1%	100%

Question 18: Safety concerns once raised are dealt with in a timely and comprehensive manner

Count of Q18	Q18						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator		3		14	3	2	22
Airline	34	135	133	404	101	6	813
ANS	1	14	3	26	4	1	49
Commercial Helicopter Operator	1	5	6	22	4		38
Ground Handling		3		8	3		14
Other		2	1	7	1	1	12
Maintenance Part M Subpart G/F		5	2	5	1		13
Flight Training Organisation				5	3		8
MaintenanceOrganisation(Part 145)	1	16	6	34	10		67
Maintenance Training Part 147		1	1	4	2		8
Grand Total	37	184	152	529	132	10	1044

Count of Q18	Q18						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	0%	14%	0%	64%	14%	9%	100%
Airline	4%	17%	16%	50%	12%	1%	100%
ANS	2%	29%	6%	53%	8%	2%	100%
Commercial Helicopter Operator	3%	13%	16%	58%	11%	0%	100%
Ground Handling	0%	21%	0%	57%	21%	0%	100%
Other	0%	17%	8%	58%	8%	8%	100%
Maintenance Part M Subpart G/F	0%	38%	15%	38%	8%	0%	100%
Flight Training Organisation	0%	0%	0%	63%	38%	0%	100%
MaintenanceOrganisation(Part 145)	1%	24%	9%	51%	15%	0%	100%
Maintenance Training Part 147	0%	13%	13%	50%	25%	0%	100%
Grand Total	4%	18%	15%	51%	13%	1%	100%

Question 19: There is little point in reporting safety hazards

Count of Q19	Q19						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	13	7				2	22
Airline	301	302	84	96	22	8	813
ANS	25	19	1	3	1		49
Commercial Helicopter Operator	18	14	2	2	2		38
Ground Handling	11	3					14
Other	4	5	1		1	1	12
Maintenance Part M Subpart G/F	6	5	2				13
Flight Training Organisation	6	1		1			8
MaintenanceOrganisation(Part 145)	33	29		2	3		67
Maintenance Training Part 147	4	4					8
Grand Total	421	389	90	104	29	11	1044

Count of Q19	Q19						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	59%	32%	0%	0%	0%	9%	100%
Airline	37%	37%	10%	12%	3%	1%	100%
ANS	51%	39%	2%	6%	2%	0%	100%
Commercial Helicopter Operator	47%	37%	5%	5%	5%	0%	100%
Ground Handling	79%	21%	0%	0%	0%	0%	100%
Other	33%	42%	8%	0%	8%	8%	100%
Maintenance Part M Subpart G/F	46%	38%	15%	0%	0%	0%	100%
Flight Training Organisation	75%	13%	0%	13%	0%	0%	100%
MaintenanceOrganisation(Part 145)	49%	43%	0%	3%	4%	0%	100%
Maintenance Training Part 147	50%	50%	0%	0%	0%	0%	100%
Grand Total	40%	37%	9%	10%	3%	1%	100%

Question 20: The identification of hazards plays an integral part in augmenting the organisation's safety culture

Count of Q20	Q20						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator			1	9	11	1	22
Airline	6	49	62	449	241	6	813
ANS	2	2	3	26	16		49
Commercial Helicopter Operator			2	23	13		38
Ground Handling			1	6	6	1	14
Other	1			7	3	1	12
Maintenance Part M Subpart G/F		2		7	4		13
Flight Training Organisation				2	6		8
MaintenanceOrganisation(Part 145)		1	1	45	20		67
Maintenance Training Part 147			1	3	4		8
Grand Total	9	54	71	577	324	9	1044

Count of Q20	Q20						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	0%	0%	5%	41%	50%	5%	100%
Airline	1%	6%	8%	55%	30%	1%	100%
ANS	4%	4%	6%	53%	33%	0%	100%
Commercial Helicopter Operator	0%	0%	5%	61%	34%	0%	100%
Ground Handling	0%	0%	7%	43%	43%	7%	100%
Other	8%	0%	0%	58%	25%	8%	100%
Maintenance Part M Subpart G/F	0%	15%	0%	54%	31%	0%	100%
Flight Training Organisation	0%	0%	0%	25%	75%	0%	100%
MaintenanceOrganisation(Part 145)	0%	1%	1%	67%	30%	0%	100%
Maintenance Training Part 147	0%	0%	13%	38%	50%	0%	100%
Grand Total	1%	5%	7%	55%	31%	1%	100%

Question 21: My organisation is sensitive to the influence of various national cultures in determining its own organisational culture.

Count of Q21	Q21						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator		2	12	6	1	1	22
Airline	36	151	251	298	68	9	813
ANS	2	3	30	13	1		49
Commercial Helicopter Operator	1	2	19	14	2		38
Ground Handling	2	3	3	5	1		14
Other		1	1	7	1	2	12
Maintenance Part M Subpart G/F		3	5	5			13
Flight Training Organisation			3	4	1		8
MaintenanceOrganisation(Part 145)		12	27	26	2		67
Maintenance Training Part 147	1	1	1	4	1		8
Grand Total	42	178	352	382	78	12	1044

Count of Q21	Q21						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	0%	9%	55%	27%	5%	5%	100%
Airline	4%	19%	31%	37%	8%	1%	100%
ANS	4%	6%	61%	27%	2%	0%	100%
Commercial Helicopter Operator	3%	5%	50%	37%	5%	0%	100%
Ground Handling	14%	21%	21%	36%	7%	0%	100%
Other	0%	8%	8%	58%	8%	17%	100%
Maintenance Part M Subpart G/F	0%	23%	38%	38%	0%	0%	100%
Flight Training Organisation	0%	0%	38%	50%	13%	0%	100%
MaintenanceOrganisation(Part 145)	0%	18%	40%	39%	3%	0%	100%
Maintenance Training Part 147	13%	13%	13%	50%	13%	0%	100%
Grand Total	4%	17%	34%	37%	7%	1%	100%

Question22: In my organisation the concept of human error is understood

Count of Q22	Q22						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator			3	14	4	1	22
Airline	35	105	88	445	137	3	813
ANS	4	8	3	30	4		49
Commercial Helicopter Operator		1	2	27	7	1	38
Ground Handling	4	3		4	3		14
Other	1			8	1	2	12
Maintenance Part M Subpart G/F		4	1	7	1		13
Flight Training Organisation				4	4		8
MaintenanceOrganisation(Part 145)	2	4	2	49	10		67
Maintenance Training Part 147			1	4	3		8
Grand Total	46	125	100	592	174	7	1044

Count of Q22	Q22						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	0%	0%	14%	64%	18%	5%	100%
Airline	4%	13%	11%	55%	17%	0%	100%
ANS	8%	16%	6%	61%	8%	0%	100%
Commercial Helicopter Operator	0%	3%	5%	71%	18%	3%	100%
Ground Handling	29%	21%	0%	29%	21%	0%	100%
Other	8%	0%	0%	67%	8%	17%	100%
Maintenance Part M Subpart G/F	0%	31%	8%	54%	8%	0%	100%
Flight Training Organisation	0%	0%	0%	50%	50%	0%	100%
MaintenanceOrganisation(Part 145)	3%	6%	3%	73%	15%	0%	100%
Maintenance Training Part 147	0%	0%	13%	50%	38%	0%	100%
Grand Total	4%	12%	10%	57%	17%	1%	100%

Question 23: Wilful acts of violation are not tolerated

Count of Q23	Q23						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator				9	12	1	22
Airline	7	30	33	378	359	6	813
ANS	1	4	8	20	16		49
Commercial Helicopter Operator		1	1	17	19		38
Ground Handling		1		3	10		14
Other	1			5	4	2	12
Maintenance Part M Subpart G/F	1	1	2	7	2		13
Flight Training Organisation			1	1	6		8
MaintenanceOrganisation(Part 145)	1	2	1	31	32		67
Maintenance Training Part 147				2	6		8
Grand Total	11	39	46	473	466	9	1044

Count of Q23	Q23						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	0%	0%	0%	41%	55%	5%	100%
Airline	1%	4%	4%	46%	44%	1%	100%
ANS	2%	8%	16%	41%	33%	0%	100%
Commercial Helicopter Operator	0%	3%	3%	45%	50%	0%	100%
Ground Handling	0%	7%	0%	21%	71%	0%	100%
Other	8%	0%	0%	42%	33%	17%	100%
Maintenance Part M Subpart G/F	8%	8%	15%	54%	15%	0%	100%
Flight Training Organisation	0%	0%	13%	13%	75%	0%	100%
MaintenanceOrganisation(Part 145)	1%	3%	1%	46%	48%	0%	100%
Maintenance Training Part 147	0%	0%	0%	25%	75%	0%	100%
Grand Total	1%	4%	4%	45%	45%	1%	100%

Question 24: There is a distinction between genuine human error and wilful acts of violation

Count of Q24	Q24						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator		1		10	10	1	22
Airline	20	56	79	407	246	5	813
ANS	3	3	4	23	15	1	49
Commercial Helicopter Operator			4	24	10		38
Ground Handling	1	4	1	1	7		14
Other	1			6	3	2	12
Maintenance Part M Subpart G/F		1	1	8	3		13
Flight Training Organisation				3	4	1	8
MaintenanceOrganisation(Part 145)	2	1		38	26		67
Maintenance Training Part 147				5	3		8
Grand Total	27	66	89	525	327	10	1044

Count of Q24	Q24						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	0%	5%	0%	45%	45%	5%	100%
Airline	2%	7%	10%	50%	30%	1%	100%
ANS	6%	6%	8%	47%	31%	2%	100%
Commercial Helicopter Operator	0%	0%	11%	63%	26%	0%	100%
Ground Handling	7%	29%	7%	7%	50%	0%	100%
Other	8%	0%	0%	50%	25%	17%	100%
Maintenance Part M Subpart G/F	0%	8%	8%	62%	23%	0%	100%
Flight Training Organisation	0%	0%	0%	38%	50%	13%	100%
MaintenanceOrganisation(Part 145)	3%	1%	0%	57%	39%	0%	100%
Maintenance Training Part 147	0%	0%	0%	63%	38%	0%	100%
Grand Total	3%	6%	9%	50%	31%	1%	100%

Question25: Acceptable behaviour and unacceptable behaviour is clearly defined and understood

Count of 25	25						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator				14	7	1	22
Airline	20	87	98	481	122	5	813
ANS		8	7	28	5	1	49
Commercial Helicopter Operator		1	7	24	6		38
Ground Handling	2		1	5	6		14
Other		1		7	2	2	12
Maintenance Part M Subpart G/F		5	1	6	1		13
Flight Training Organisation				5	3		8
MaintenanceOrganisation(Part 145)	1	6	7	41	12		67
Maintenance Training Part 147			1	6	1		8
Grand Total	23	108	122	617	165	9	1044

Count of 25	25						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	0%	0%	0%	64%	32%	5%	100%
Airline	2%	11%	12%	59%	15%	1%	100%
ANS	0%	16%	14%	57%	10%	2%	100%
Commercial Helicopter Operator	0%	3%	18%	63%	16%	0%	100%
Ground Handling	14%	0%	7%	36%	43%	0%	100%
Other	0%	8%	0%	58%	17%	17%	100%
Maintenance Part M Subpart G/F	0%	38%	8%	46%	8%	0%	100%
Flight Training Organisation	0%	0%	0%	63%	38%	0%	100%
MaintenanceOrganisation(Part 145)	1%	9%	10%	61%	18%	0%	100%
Maintenance Training Part 147	0%	0%	13%	75%	13%	0%	100%
Grand Total	2%	10%	12%	59%	16%	1%	100%

Question 26: In my organisation everybody is encouraged to voice any safety concerns

Count of Q26	Q26						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator				12	9	1	22
Airline	33	103	85	424	165	3	813
ANS	1	8	3	26	11		49
Commercial Helicopter Operator	1			23	13	1	38
Ground Handling	1	1		6	6		14
Other	1			7	2	2	12
Maintenance Part M Subpart G/F	2	1	2	7	1		13
Flight Training Organisation				2	6		8
MaintenanceOrganisation(Part 145)	2	4	2	42	17		67
Maintenance Training Part 147			1	4	3		8
Grand Total	41	117	93	553	233	7	1044

Count of Q26	Q26						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	0%	0%	0%	55%	41%	5%	100%
Airline	4%	13%	10%	52%	20%	0%	100%
ANS	2%	16%	6%	53%	22%	0%	100%
Commercial Helicopter Operator	3%	0%	0%	61%	34%	3%	100%
Ground Handling	7%	7%	0%	43%	43%	0%	100%
Other	8%	0%	0%	58%	17%	17%	100%
Maintenance Part M Subpart G/F	15%	8%	15%	54%	8%	0%	100%
Flight Training Organisation	0%	0%	0%	25%	75%	0%	100%
MaintenanceOrganisation(Part 145)	3%	6%	3%	63%	25%	0%	100%
Maintenance Training Part 147	0%	0%	13%	50%	38%	0%	100%
Grand Total	4%	11%	9%	53%	22%	1%	100%

Question 27: Reported safety concerns are analysed and appropriate subsequent action undertaken

Count of Q27	Q27						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator		1		13	7	1	22
Airline	13	107	144	423	117	9	813
ANS	2	9	4	27	7		49
Commercial Helicopter Operator	1	3	6	22	6		38
Ground Handling	1	2		8	3		14
Other		1	3	5	1	2	12
Maintenance Part M Subpart G/F		3	2	7	1		13
Flight Training Organisation				3	5		8
MaintenanceOrganisation(Part 145)		5	10	39	12	1	67
Maintenance Training Part 147		1		4	3		8
Grand Total	17	132	169	551	162	13	1044

Count of Q27	Q27						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	0%	5%	0%	59%	32%	5%	100%
Airline	2%	13%	18%	52%	14%	1%	100%
ANS	4%	18%	8%	55%	14%	0%	100%
Commercial Helicopter Operator	3%	8%	16%	58%	16%	0%	100%
Ground Handling	7%	14%	0%	57%	21%	0%	100%
Other	0%	8%	25%	42%	8%	17%	100%
Maintenance Part M Subpart G/F	0%	23%	15%	54%	8%	0%	100%
Flight Training Organisation	0%	0%	0%	38%	63%	0%	100%
MaintenanceOrganisation(Part 145)	0%	7%	15%	58%	18%	1%	100%
Maintenance Training Part 147	0%	13%	0%	50%	38%	0%	100%
Grand Total	2%	13%	16%	53%	16%	1%	100%

Question 28: Everybody is encouraged to develop and apply their own skills and knowledge in order to enhance organisational safety

Count of Q28	Q28						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator		1	2	13	5	1	22
Airline	43	165	153	366	81	5	813
ANS	1	9	10	23	6		49
Commercial Helicopter Operator	1	1	3	29	4		38
Ground Handling	2	2	2	5	3		14
Other		1	1	6	2	2	12
Maintenance Part M Subpart G/F		2	5	5	1		13
Flight Training Organisation			1	4	3		8
MaintenanceOrganisation(Part 145)	1	11	11	37	7		67
Maintenance Training Part 147		1	1	4	2		8
Grand Total	48	193	189	492	114	8	1044

Count of Q28	Q28						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	0%	5%	9%	59%	23%	5%	100%
Airline	5%	20%	19%	45%	10%	1%	100%
ANS	2%	18%	20%	47%	12%	0%	100%
Commercial Helicopter Operator	3%	3%	8%	76%	11%	0%	100%
Ground Handling	14%	14%	14%	36%	21%	0%	100%
Other	0%	8%	8%	50%	17%	17%	100%
Maintenance Part M Subpart G/F	0%	15%	38%	38%	8%	0%	100%
Flight Training Organisation	0%	0%	13%	50%	38%	0%	100%
MaintenanceOrganisation(Part 145)	1%	16%	16%	55%	10%	0%	100%
Maintenance Training Part 147	0%	13%	13%	50%	25%	0%	100%
Grand Total	5%	18%	18%	47%	11%	1%	100%

Question 29: All staff are regularly updated on safety issues by management

Count of Q29	Q29						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	1	1		12	7	1	22
Airline	24	111	87	451	134	6	813
ANS	3	12	5	25	3	1	49
Commercial Helicopter Operator		5	3	22	8		38
Ground Handling	1	1		6	6		14
Other	1		3	5	1	2	12
Maintenance Part M Subpart G/F	1	4	2	6			13
Flight Training Organisation			1	5	2		8
MaintenanceOrganisation(Part 145)	1	10	5	45	6		67
Maintenance Training Part 147		2		5	1		8
Grand Total	32	146	106	582	168	10	1044

Count of Q29	Q29						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	5%	5%	0%	55%	32%	5%	100%
Airline	3%	14%	11%	55%	16%	1%	100%
ANS	6%	24%	10%	51%	6%	2%	100%
Commercial Helicopter Operator	0%	13%	8%	58%	21%	0%	100%
Ground Handling	7%	7%	0%	43%	43%	0%	100%
Other	8%	0%	25%	42%	8%	17%	100%
Maintenance Part M Subpart G/F	8%	31%	15%	46%	0%	0%	100%
Flight Training Organisation	0%	0%	13%	63%	25%	0%	100%
MaintenanceOrganisation(Part 145)	1%	15%	7%	67%	9%	0%	100%
Maintenance Training Part 147	0%	25%	0%	63%	13%	0%	100%
Grand Total	3%	14%	10%	56%	16%	1%	100%

Question 30: Safety reports are regularly feedback to frontline staff so that everyone learns the lessons

Count of Q30	Q30						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator		6	2	9	4	1	22
Airline	37	142	99	413	114	8	813
ANS	2	15	4	21	7		49
Commercial Helicopter Operator	1	3	4	24	5	1	38
Ground Handling	1	2		3	8		14
Other			3	4	3	2	12
Maintenance Part M Subpart G/F	1	5	3	4			13
Flight Training Organisation		1	1	5	1		8
MaintenanceOrganisation(Part 145)	2	8	11	40	6		67
Maintenance Training Part 147		2		5	1		8
Grand Total	44	184	127	528	149	12	1044

Count of Q30	Q30						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	0%	27%	9%	41%	18%	5%	100%
Airline	5%	17%	12%	51%	14%	1%	100%
ANS	4%	31%	8%	43%	14%	0%	100%
Commercial Helicopter Operator	3%	8%	11%	63%	13%	3%	100%
Ground Handling	7%	14%	0%	21%	57%	0%	100%
Other	0%	0%	25%	33%	25%	17%	100%
Maintenance Part M Subpart G/F	8%	38%	23%	31%	0%	0%	100%
Flight Training Organisation	0%	13%	13%	63%	13%	0%	100%
MaintenanceOrganisation(Part 145)	3%	12%	16%	60%	9%	0%	100%
Maintenance Training Part 147	0%	25%	0%	63%	13%	0%	100%
Grand Total	4%	18%	12%	51%	14%	1%	100%

Question 31: Staff at all levels, fully understand the hazards and risks of their own operation

Count of Q31	Q31						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator			2	12	8		22
Airline	44	175	140	368	80	6	813
ANS	2	12	4	26	5		49
Commercial Helicopter Operator	1	1	3	28	5		38
Ground Handling	1	2		3	8		14
Other			2	7	2	1	12
Maintenance Part M Subpart G/F		5		7	1		13
Flight Training Organisation	1			5	2		8
MaintenanceOrganisation(Part 145)	4	9	6	40	7	1	67
Maintenance Training Part 147				6	2		8
Grand Total	53	204	157	502	120	8	1044

Count of Q31	Q31						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	0%	0%	9%	55%	36%	0%	100%
Airline	5%	22%	17%	45%	10%	1%	100%
ANS	4%	24%	8%	53%	10%	0%	100%
Commercial Helicopter Operator	3%	3%	8%	74%	13%	0%	100%
Ground Handling	7%	14%	0%	21%	57%	0%	100%
Other	0%	0%	17%	58%	17%	8%	100%
Maintenance Part M Subpart G/F	0%	38%	0%	54%	8%	0%	100%
Flight Training Organisation	13%	0%	0%	63%	25%	0%	100%
MaintenanceOrganisation(Part 145)	6%	13%	9%	60%	10%	1%	100%
Maintenance Training Part 147	0%	0%	0%	75%	25%	0%	100%
Grand Total	5%	20%	15%	48%	11%	1%	100%

Question 32: Staff work continuously to identify and overcome threats to safety

Count of Q32	Q32						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator			4	15	3		22
Airline	15	128	143	428	92	7	813
ANS	1	7	8	28	5		49
Commercial Helicopter Operator		2	5	24	6	1	38
Ground Handling	1	1	2	7	3		14
Other		1	3	5	2	1	12
Maintenance Part M Subpart G/F		3	3	7			13
Flight Training Organisation			2	5	1		8
MaintenanceOrganisation(Part 145)	3	16	11	33	4		67
Maintenance Training Part 147			2	5	1		8
Grand Total	20	158	183	557	117	9	1044

Count of Q32	Q32						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	0%	0%	18%	68%	14%	0%	100%
Airline	2%	16%	18%	53%	11%	1%	100%
ANS	2%	14%	16%	57%	10%	0%	100%
Commercial Helicopter Operator	0%	5%	13%	63%	16%	3%	100%
Ground Handling	7%	7%	14%	50%	21%	0%	100%
Other	0%	8%	25%	42%	17%	8%	100%
Maintenance Part M Subpart G/F	0%	23%	23%	54%	0%	0%	100%
Flight Training Organisation	0%	0%	25%	63%	13%	0%	100%
MaintenanceOrganisation(Part 145)	4%	24%	16%	49%	6%	0%	100%
Maintenance Training Part 147	0%	0%	25%	63%	13%	0%	100%
Grand Total	2%	15%	18%	53%	11%	1%	100%

Question 33: While safety is important there is a limited supply of resources available and so it's not possible to invest fully in safety

Count of Q33	Q33						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	5	7	2	7	1		22
Airline	123	336	123	193	36	2	813
ANS	10	11	4	20	4		49
Commercial Helicopter Operator	5	21	3	7	2		38
Ground Handling	3	8		3			14
Other	1	5	1	3	1	1	12
Maintenance Part M Subpart G/F	1	5		7			13
Flight Training Organisation	3	3	1	1			8
MaintenanceOrganisation(Part 145)	11	25	8	18	5		67
Maintenance Training Part 147		3		5			8
Grand Total	162	424	142	264	49	3	1044

Count of Q33	Q33						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	23%	32%	9%	32%	5%	0%	100%
Airline	15%	41%	15%	24%	4%	0%	100%
ANS	20%	22%	8%	41%	8%	0%	100%
Commercial Helicopter Operator	13%	55%	8%	18%	5%	0%	100%
Ground Handling	21%	57%	0%	21%	0%	0%	100%
Other	8%	42%	8%	25%	8%	8%	100%
Maintenance Part M Subpart G/F	8%	38%	0%	54%	0%	0%	100%
Flight Training Organisation	38%	38%	13%	13%	0%	0%	100%
MaintenanceOrganisation(Part 145)	16%	37%	12%	27%	7%	0%	100%
Maintenance Training Part 147	0%	38%	0%	63%	0%	0%	100%
Grand Total	16%	41%	14%	25%	5%	0%	100%

Question 34: The current challenging economic climate has resulted in re-organisation and/or downsizing which make investment in safety difficult

Count of Q34	Q34						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	3	8	2	5	4		22
Airline	117	318	133	183	56	6	813
ANS	5	15	14	14	1		49
Commercial Helicopter Operator	7	16	7	4	4		38
Ground Handling	2	8	1	3			14
Other	1	3	2	4	1	1	12
Maintenance Part M Subpart G/F	1	4	2	5	1		13
Flight Training Organisation	3	3	1	1			8
MaintenanceOrganisation(Part 145)	9	24	14	16	4		67
Maintenance Training Part 147		3		4	1		8
Grand Total	148	402	176	239	72	7	1044

Count of Q34	Q34						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	14%	36%	9%	23%	18%	0%	100%
Airline	14%	39%	16%	23%	7%	1%	100%
ANS	10%	31%	29%	29%	2%	0%	100%
Commercial Helicopter Operator	18%	42%	18%	11%	11%	0%	100%
Ground Handling	14%	57%	7%	21%	0%	0%	100%
Other	8%	25%	17%	33%	8%	8%	100%
Maintenance Part M Subpart G/F	8%	31%	15%	38%	8%	0%	100%
Flight Training Organisation	38%	38%	13%	13%	0%	0%	100%
MaintenanceOrganisation(Part 145)	13%	36%	21%	24%	6%	0%	100%
Maintenance Training Part 147	0%	38%	0%	50%	13%	0%	100%
Grand Total	14%	39%	17%	23%	7%	1%	100%

Question 35: Our safety culture is excellent and requires no further improvement

Count of Q35	Q35						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	2	14	2	4			22
Airline	129	442	111	113	16	2	813
ANS	8	34	5	2			49
Commercial Helicopter Operator	1	28	4	4	1		38
Ground Handling	1	11	1	1			14
Other	2	6		3		1	12
Maintenance Part M Subpart G/F	4	6	2	1			13
Flight Training Organisation		6	1			1	8
MaintenanceOrganisation(Part 145)	7	45	6	7	1	1	67
Maintenance Training Part 147		6		2			8
Grand Total	154	598	132	137	18	5	1044

Count of Q35	Q35						
QA_CoreBusiness	1	2	3	4	5	.	Grand Total
AerodromeOperator	9%	64%	9%	18%	0%	0%	100%
Airline	16%	54%	14%	14%	2%	0%	100%
ANS	16%	69%	10%	4%	0%	0%	100%
Commercial Helicopter Operator	3%	74%	11%	11%	3%	0%	100%
Ground Handling	7%	79%	7%	7%	0%	0%	100%
Other	17%	50%	0%	25%	0%	8%	100%
Maintenance Part M Subpart G/F	31%	46%	15%	8%	0%	0%	100%
Flight Training Organisation	0%	75%	13%	0%	0%	13%	100%
MaintenanceOrganisation(Part 145)	10%	67%	9%	10%	1%	1%	100%
Maintenance Training Part 147	0%	75%	0%	25%	0%	0%	100%
Grand Total	15%	57%	13%	13%	2%	0%	100%

Appendix B: Original Questionnaire

Irish Aviation Authority,
The Times Building,
11-12 D'Olier Street,
Dublin 2.
20th July 2010

Dear Participant,

In recent times ICAO has mandated the establishment of State Safety Programmes (SSPs) and the implementation of Safety Management Systems for Service Providers in order to achieve a greater level of safety in civil aviation. The requirements are outlined in greater detail in Annexes 1, 6, 8, 11, 13 and 14.

One of the key elements of any successful safety system is its safety culture. However in order to be able to make an informed assessment of organisational safety cultures within Irish Aviation there needs to be pertinent and reliable data. The primary objective of this Safety Culture assessment survey is to facilitate the collection of data regarding Safety Culture and thereby assist in its subsequent analysis.

But what is Safety Culture? Safety Culture is the way safety is perceived, valued and prioritised in an organisation. It reflects the real commitment to safety at all levels in the organisation. It has also been described as "how an organisation behaves when no one is watching". It can be positive, negative or neutral.

This questionaire is anonymous and confidential. Part 1 requests general demographic details that will aid in the subsequent analyisis of the data with regard to functional areas within the industry and in no way identifies the participant. It can also be completed electronically on the IAA website (http://www.iaa.ie/safetyculturesurvey) where submission has been deidentified by means of a third party site facilitator. The results of the airline subsection data will also be included in academic research being conducted by the survey co-ordinator.

Once the questionaires are returned they will be analysed and the conclusions will be made available to all stakeholders for the benefit of everybody in the aviation industry.

Ultimately it is hoped that the analysis will identify areas of strength and weakness, thus assisting in identifying a pathway of continous improvement for the future.

Thank you in advance for taking the time to complete this questionaire. Your participation is a valuable contribution to this process and is greatly appreciated.

Yours Sincerely,

Captain Anne Hassett

Part 1

General Demographic Details

Please indicate the core business which best describes your organisation.

Airline		Maintenance Organisation (145)	
Commercial Helicopter Operator		Maintenance Part M Subpart G/F	
Flight Training Organisation		Aerodrome Operator	
Maintenance Training (147)		ANS	
Ground Handling		Other business type	

If other please specify business type: _____

Please indicate the functional area which best describes the sector you are employed in within your organisation.

Senior Management		Flight Crew	
Engineering		Cabin Crew	
Training		Operational Support	
Administration		Ground Crew	
Other Occupation		If other please specify	_____

Please indicate age range.

16-19		20-29		30-39		40-49		50-59	

Please indicate gender.

Female ☐ Male ☐

Part 2

Section A: The following statements relate to Safety policy.

Q 1. I am aware of my organisation's safety policy statement:

Aware ☐ Unaware ☐

Please indicate using the five point scale how true the following statements are of your organisation:

Q 2. All employees at all levels are aware of the safety policy statement.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree

Q 3. The safety policy statement is an accurate reflection of the company's commitment to safety.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree

Q 4. The safety policy statement is applicable to all levels within the organisation.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree

Section B: The following statements address the essential elements of a Safety system.

Q 5. There is adequate corporate support for implementing and maintaining a positive safety culture in my organisation.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree

Q 6. There is clear recognition within my organisation of the need to develop and foster a good safety culture.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree

Q 7. Safety is everybody's business.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree

Q 8. Compliance with regulatory requirements is viewed as essential in maintaining a good safety culture.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree

Q 9. The effectiveness of the Quality department plays a key role in fostering a positive safety culture.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree

Q 10. Strong leadership skills are instrumental in promoting a positive safety culture.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree

Q 11. Staff training is viewed as playing an integral part in fostering a better safety culture.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree

Q 12. Good communication is an essential mechanism in fostering a better safety culture.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree
☐	☐	☐	☐	☐

Q 13. The circulation of information is viewed as key in nurturing safety culture.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree
☐	☐	☐	☐	☐

Q 14. All employees are regularly informed about "lessons learnt" from incidents or near misses.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree
☐	☐	☐	☐	☐

Q 15. I believe that "lessons learnt" provide a valuable means of strengthening our safety culture.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree
☐	☐	☐	☐	☐

Q 16. There is a willingness to learn from the experience of other organisations.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree
☐	☐	☐	☐	☐

Section C.

Please continue to indicate using the five point scale how true the following statements are of your organisation. They are mainly concerned with the issue of Hazards.

Q 17. Any safety concerns can be communicated to the next level in a non-punitive atmosphere.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree
☐	☐	☐	☐	☐

Q 18. Safety concerns once raised are dealt with in a timely and comprehensive manner.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree
☐	☐	☐	☐	☐

Q 19. There is little point in reporting safety hazards

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree
☐	☐	☐	☐	☐

Q 20. The identification of hazards plays an integral part in augmenting the organisation's safety culture.

Strongly	Disagree	No	Agree	Strongly

disagree		Opinion		Agree
☐	☐	☐	☐	☐

Section D: The following statements relate to different types of Safety Culture.

Q 21. My organisation is sensitive to the influence of various national cultures in determining its own organisational culture.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree
☐	☐	☐	☐	☐

Q 22. In my organisation the concept of human error is understood.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree
☐	☐	☐	☐	☐

Q 23. Wilful acts of violation are not tolerated.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree
☐	☐	☐	☐	☐

Q 24. There is a distinction between genuine human error and wilful acts of violation.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree
☐	☐	☐	☐	☐

Q 25. Acceptable behaviour and unacceptable behaviour is clearly defined and understood.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree
☐	☐	☐	☐	☐

Q 26. In my organisation everybody is encouraged to voice any safety concerns.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree
☐	☐	☐	☐	☐

Q 27. Reported safety concerns are analysed and appropriate subsequent action undertaken.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree
☐	☐	☐	☐	☐

Q 28. Everybody is encouraged to develop and apply their own skills and knowledge in order to enhance organisational safety.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree
☐	☐	☐	☐	☐

Q 29. All staff are regularly updated on safety issues by management.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree
☐	☐	☐	☐	☐

Q 30. Safety reports are regularly feedback to frontline staff so that everyone learns the lessons.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree
☐	☐	☐	☐	☐

Q 31. Staff at all levels, fully understand the hazards and risks of their own operation.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree
☐	☐	☐	☐	☐

Q 32. Staff work continuously to identify and overcome threats to safety.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree
☐	☐	☐	☐	☐

Section E: Possible Future Challenges

Q 33. While safety is important there is a limited supply of resources available and so it's not possible to invest fully in safety.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree
☐	☐	☐	☐	☐

Q 34. The current challenging economic climate has resulted in re-organisation and/or downsizing which make investment in safety difficult.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree
☐	☐	☐	☐	☐

Q 35. Our safety culture is excellent and requires no further improvement.

Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree
☐	☐	☐	☐	☐

Is there anything further you would like to add:

_____

_____

_____

Thank you for taking the time to complete this survey. Your co-operation is greatly appreciated.

Please return this form to:

Captain Anne Hassett, Irish Aviation Authority, The Times Building, 11-12 D'Olier Street, Dublin 2.

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