# A Roadmap to A Just Culture:

# Enhancing the Safety Environment

First Edition
September 2004

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# A Roadmap to a Just Culture:
## Enhancing the Safety Environment

***Prepared by: GAIN Working Group E,***
***Flight Ops/ATC Ops Safety Information Sharing***

First Edition • September 2004

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# Foreword

The term ‘no-blame culture’ flourished in the 1990s and still endures today. Compared to the largely punitive cultures that it sought to replace, it was clearly a step in the right direction. It acknowledged that a large proportion of unsafe acts were ‘honest errors’(the kinds of slips, lapses and mistakes that even the best people can make) and were not truly blameworthy, nor was there much in the way of remedial or preventative benefit to be had by punishing their perpetrators. But the ‘no-blame’ concept had two serious weaknesses. First, it ignored—or, at least, failed to confront—those individuals who wilfully (and often repeatedly) engaged in dangerous behaviours that most observers would recognise as being likely to increase the risk of a bad outcome. Second, it did not properly address the crucial business of distinguishing between culpable and non-culpable unsafe acts.

In my view, a safety culture depends critically upon first negotiating where the line should be drawn between unacceptable behaviour and blameless unsafe acts. There will always be a grey area between these two extremes where the issue has to be decided on a case by case basis. This is where the guide-lines provided by *A Roadmap to a Just Culture* will be of great value. A number of aviation organisations have embarked upon this process, and the general indications are that only around 10 per cent of actions contributing to bad events are judged as culpable. In principle, at least, this means that the large majority of unsafe acts can be reported without fear of sanction. Once this crucial trust has been established, the organisation begins to have a reporting culture, something that provides the system with an accessible memory, which, in turn, is the essential underpinning to a learning culture. There will, of course, be setbacks along the way. But engineering a just culture is the all-important early step; so much else depends upon it.

James Reason

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# Executive Summary

This report is intended as an overview of how aviation organizations can promote improvements in the level and quality of reporting of safety information. Any effective safety information system depends crucially on the willing participation of the workforce, the front line workers who are in direct contact with hazard. In aviation organizations, these are air traffic controllers, pilots, flight crew, maintenance personnel, and others who can provide key information about aviation safety problems and potential solutions. In order for these workers to come forward and report errors or mistakes, an organizational climate conducive to such reporting must exist – a Just Culture.

The report was developed by the Flight Operations/ATC Operations Safety Information Sharing Working Group of the Global Aviation Information Network (GAIN). In providing the report to members of the aviation safety community the working group hopes to achieve the following objectives:

- Provide an overview of what is meant by a Just Culture,
- Heighten awareness in the international aviation community of the benefits of creating a Just Culture,
- Provide a portrayal of Just Culture implemented in aviation organizations and share lessons learned, and
- Provide initial guidelines that might be helpful to others wishing to benefit from the creation of a Just Culture.

To obtain information for this report, the working group conducted a literature review and gathered information from several aviation organizations that have begun to implement Just Culture principles and concepts. The report provides a discussion of the theories and principles of a Just Culture, information on the benefits of a Just Culture, steps an organization might take to begin creating a Just Culture, and describes cases studies of organizations that have begun implementing Just Culture.

Reason (1997) describes a Just Culture as an atmosphere of trust in which people are encouraged, even rewarded, for providing essential safety-related information, but in which they are also clear about where the line must be drawn between acceptable and unacceptable behaviour. An effective reporting culture depends on how the organisation handles blame and punishment. A “no-blame” culture is neither feasible nor desirable. Most people desire some level of accountability when a mishap occurs. In a Just Culture environment the culpability line is more clearly drawn.

There are a number of benefits of having a Just Culture versus a blaming culture (or indeed a no-blame culture) and the three main ones have been described as:

- Increased safety reporting,
- Trust building, and
- More effective safety and operational management.

A Just Culture supports learning from unsafe acts in order to improve the level of safety awareness through the improved recognition of safety situations and helps to develop conscious articulation and sharing of safety information.

The process of clearly establishing acceptable versus unacceptable behavior, if done properly in a collaborative environment, brings together different members of an organization that might often have infrequent contact in policy decision-making. This contact, as well as the resulting common understanding of where the lines are drawn for punitive actions, enhances the trust that is at the core of developing Just Culture.

The report also discuses the following key aspects that need to be addressed in order to improve the quality and quantity of incident reporting through the creation of a Just Culture:

- Changes to the legal framework that support reporting of incidents,
- Polices and procedures that encourage reporting,
- Clear definition of the roles and responsibilities of the people required to implement and maintain a Just Culture reporting system,
- Feedback to users and aviation community - rapid, useful, accessible and intelligible feedback to the reporting community; and professional handling of investigations and lessons dissemination,
- Educating the users with regard to the changes and motives of the new system, and
- Methods for developing and maintaining a safety culture.

In addition, some expected obstacles to the creation of a Just Culture have briefly been noted, such as the difficulty in changing legal procedures, and persuading senior management to commit resources to implementing and maintaining the reporting system.

The report discusses four case studies of organizations that have begun to implement a Just Culture including an airline company, two civil aviation authorities, and an air navigation service provider. These case studies are discussed with regard to changes to their legal systems, the type of reporting system adopted (e.g. voluntary, mandatory, confidential); the implementation process; the roles and responsibilities of the people involved; the reporting procedures; and the methods of feedback to the aviation community.

This document is a first attempt at outlining some of the issues surrounding Just Culture in the aviation community. Its purpose is to provide some preliminary guidance on how to create a just reporting culture and some insights on how to plan the implementation of such a system.

# 1. Introduction

### *1.1 Purpose of Report*

This report was developed by the Global Aviation Information Network (GAIN) Working Group E (Flight Ops /ATC Ops Safety Information Sharing Working Group) and is intended as an overview of how aviation organizations can promote improvements in the level and quality of reporting of safety information. A Just Culture supports learning from unsafe acts in order to improve the level of safety awareness through the improved recognition of safety situations and helps to develop conscious articulation and sharing of safety information.

The objectives of this report include the following:

- Provide an overview of what is meant by a Just Culture,
- Heighten awareness in the international aviation community of the benefits of creating a Just Culture,
- Provide a portrayal of Just Culture implemented in aviation organizations and share lessons learned, and
- Provide initial guidelines that might be helpful to others wishing to benefit from the creation of a Just Culture.

The report is divided into four main sections:

1. **Introduction** – Presents an overview of GAIN, Working Group E, and an overview of the issue and rationale for learning about Just Culture.
2. **Definitions and Principles** – Presents a discussion of the theories and principles of a Just Culture.
3. **Creating a Just Culture** – Provides information regarding the benefits of a Just Culture; the changes that may occur in an organisation with a Just Culture; and some necessary steps to create a Just Culture as well as some possible obstacles that might be incurred.
4. **Case Studies** – Presents examples of four organisations that have begun to create a Just Culture (Naviair; New Zealand CAA; United Kingdom CAA; and Alaska Airlines)

A reference section (of the sources for the report) is also included. In addition, five Appendices provide further information:

**Appendix A:** The advantages and disadvantages of various types of reporting systems (mandatory; voluntary and confidential).
**Appendix B:** Some possible constraints to achieving a Just Culture.
**Appendix C:** The perspectives of various aviation organisations on Just Culture (ICAO, regulatory authorities, an airline, ANSPs, IFATCA, IFALPA).
**Appendix D:** A glossary of acronyms.
**Appendix E:** A form for readers to provide feedback on the report.

### *1.2 GAIN Overview*

GAIN is an industry and government initiative to promote and facilitate the voluntary collection and sharing of safety information by and among users in the international

aviation community to improve safety. GAIN was first proposed by the Federal Aviation Administration (FAA) in 1996, but has now evolved into an international industry-wide endeavor that involves the participation of professionals from airlines, air traffic service providers, employee groups, manufacturers, major equipment suppliers and vendors, and other aviation organizations. To date, six world conferences have been held to promote the GAIN concept and share products with the aviation community to improve safety. Aviation safety professionals from over 50 countries have participated in GAIN.

The GAIN organization consists of an industry-led Steering Committee, three working groups, a Program Office, and a Government Support Team. The GAIN Steering Committee is composed of industry stakeholders that set high-level GAIN policy, issue charters to direct the working groups, and guide the program office. The Government Support Team consists of representatives from government organizations that work together to promote and facilitate GAIN in their respective countries. The working groups are interdisciplinary industry and government teams that work GAIN tasks within the action plans established by the Steering Committee. The current GAIN working groups are:

- Working Group B--Analytical Methods and Tools,
- Working Group C--Global Information Sharing Systems, and
- Working Group E--Flt Ops/ATC Ops Safety Information Sharing.

The Program Office provides technical and administrative support to the Steering Committee, working groups, and Government Support Team.

### *1.3 Flight Ops/ATC Ops Safety Information Sharing Working Group (WG E)*

A workshop at the Fifth GAIN World Conference in December 2001 highlighted the need for increased interaction between air traffic controllers and pilots on aviation safety issues. A quote from "Crossed Wires: What do pilots and controllers know about each other's jobs," Flight Safety Australia, May-June 2001, by Dr. Immanuel Barshi and Rebecca Chute, succinctly captures the need seen by many at this workshop and in the aviation community for increased collaboration between pilots and controllers. The authors introduce the article saying, *"It is often said that pilots and controllers talk at each other all day long, but rarely communicate."*

Responding to this need, in January 2002 the GAIN Steering Committee chartered the Flight Ops/ATC Ops Safety Information Sharing Working Group, designated Working Group E, to foster increased collaboration on safety and operational information exchange between flight operations and air traffic operations. The working group consists of representatives from airlines, pilot and controller unions, air traffic service providers, regulatory agencies, and other aviation organizations.
Working Group E has three main focus areas:

1. Promote the development and creation of a Just Culture environment within the Flight Ops and ATC Ops communities.
2. Identify Flight Ops/ATC Ops collaboration initiatives that improve safety and efficiency.
3. Increase awareness of the benefits of pilot/controller collaboration and promote such collaboration in training and education programs.

After its formation in 2002, the Working Group concentrated on the second focus area, surveying air traffic controllers, pilots, air traffic service providers, and others around the world to learn about existing pilot/controller collaboration initiatives. Twenty-seven of these initiatives are documented in the report, "*Pilot/Controller Collaboration Initiatives: Enhancing Safety and Efficiency*," available at www.gainweb.org.

The Working Group and the GAIN Steering Committee realized that in order for pilots, controllers, and other front line workers to come forward and share information about potential aviation safety problems, a just culture environment conducive to such information sharing and collaboration must exist. Therefore, the working group began an effort to search the literature as well as identify existing examples of the creation of Just Culture in the aviation safety community. The results are documented in this report, which was prepared specifically to address the first focus area. Working Group E hopes this information will assist other organizations wishing to benefit from the creation of a Just Culture in their countries and/or organizations.

Another Working Group E product, entitled "The Other End of the Radio," is under development and addresses the third focus area.

### *1.4 Overview of the Issue*

Any effective safety information system depends crucially on the willing participation of the workforce, the front line workers who are in direct contact with hazard. In aviation organizations, these are air traffic controllers, pilots, flight crew, maintenance personnel, and others who can provide key information about aviation safety problems and potential solutions. Achieving this reporting requires an organisational climate in which people are prepared to report their errors and incidents. Engineering an effective reporting culture must contend with actions whose consequences have focused on blame and punishment. A "no-blame" culture is neither feasible nor desirable. A small proportion of unsafe acts are deliberately done (e.g. criminal activity, substance abuse, controlled substances, reckless non-compliance, sabotage, etc.) and they require sanctions of appropriate severity. A blanket amnesty on all unsafe acts would lack credibility in the eyes of employees and could be seen to oppose natural justice.

What is needed is an atmosphere of trust in which people are encouraged to provide essential safety-related information, and in which they are also clear about where the line must be drawn between acceptable and unacceptable behaviour. The *Just Culture* operates by design to encourage compliance with the appropriate regulations and procedures, foster safe operating practices, and promote the development of internal evaluation programs.

# 2. Definitions and Principles of a Just Culture

### *2.1 Definition of Just Culture*

According to Reason (1997), the components of a safety culture include: just, reporting, learning, informed and flexible cultures. Reason describes a Just Culture as an atmosphere of trust in which people are encouraged (even rewarded) for providing essential safety-related information, but in which they are also clear about where the line must be drawn between acceptable and unacceptable behaviour (See Figure 1).

A "Just Culture" refers to a way of safety thinking that promotes a questioning attitude, is resistant to complacency, is committed to excellence, and fosters both personal accountability and corporate self-regulation in safety matters.

A "Just" safety culture, then, is both attitudinal as well as structural, relating to both individuals and organizations. Personal attitudes and corporate style can enable or facilitate the unsafe acts and conditions that are the precursors to accidents and incidents. It requires not only actively identifying safety issues, but responding with appropriate action.

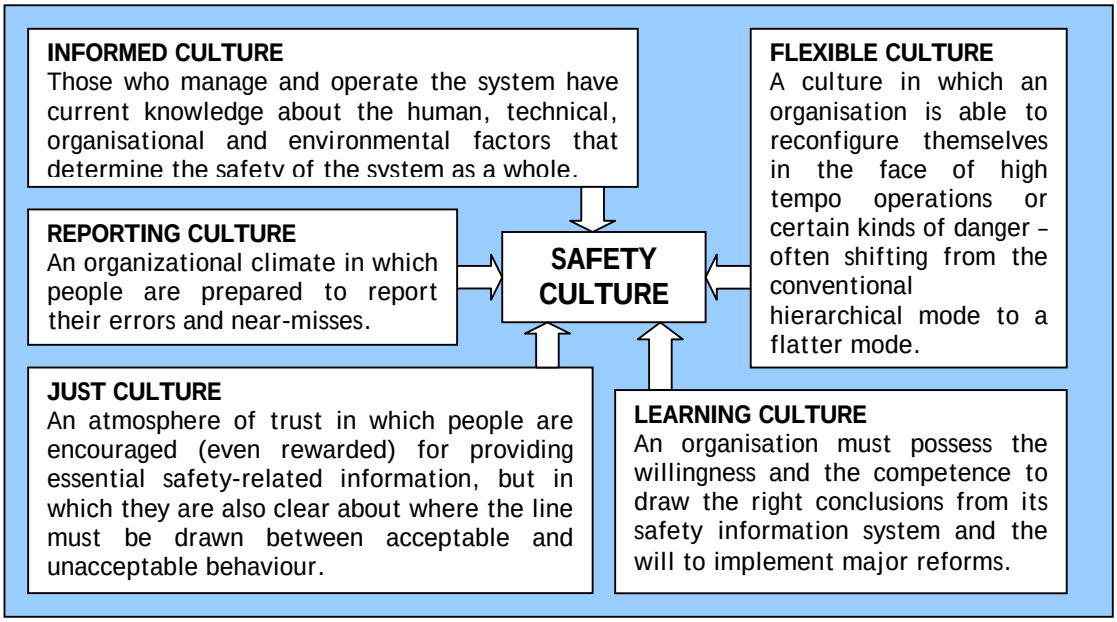


Figure 1. Based on Reason (1997) The Components of Safety Culture: Definitions of Informed, Reporting, Just, Flexible and Learning Cultures

### *2.2 Principles of a Just Culture*

This section discusses some of the main issues surrounding Just Culture, including the benefits of having a learning culture versus a blaming culture; learning from unsafe acts; where the border between "acceptable" and "unacceptable" behaviour should be; and ways to decide on culpability.

### Evaluating the benefits of punishment versus learning

A question that organizations should ask themselves is whether or not the current disciplinary policy is supportive to their system safety efforts.

- Is it more worthwhile to reduce accidents by learning from incidents (from incidents being reported openly and communicated back to the staff) or by punishing people for making mistakes to stop them from making mistakes in the future?
- Does the threat of discipline increase a person's awareness of risks or at least increase one's interest in assessing the risks? Does this heightened awareness outweigh the learning through punishment?
- By providing safety information and knowledge, are people more interested in assessing the risks? Does this heightened awareness outweigh the learning through punishment?
- How does your system treat human error? Does your system make an employee aware of their mistake? Can an employee safely come forward if they make a mistake, so that your organization can learn from the event?

Positions for and against punishment as a means of learning are illustrated below:
**In favour of punishment of the negligent actor:** "*when people have knowledge that conviction and sentence (and punishment) may follow conduct that inadvertently creates improper risk, they are supplied with an additional motive to take care before acting, to use their facilities and draw on their experience in gauging the potentialities of contemplated conduct. To some extent, at least, this motive may promote awareness and thus be effective as a measure of control.*" (American Law Institute Model Penal Code, Article 2. General Principles of Liability, Explanatory Note 2.02, 1962).

**Against punishment of the negligent actor:** *"a person acts "recklessly" with respect to a result if s/he consciously disregards a substantial risk and acts only "negligently" if s/he is unaware of a substantial risk s/he should have perceived. The narrow distinction lies in the actor's awareness of risk. The person acting negligently is unaware of harmful consequences and therefore is arguably neither blameworthy nor deterrable*" (Robinson & Grall (1983) Element Analysis in Defining Criminal Liability: The Model Penal Code and Beyond. 35 Stan. L. Rev. 681, pp 695-96).

### Learning from unsafe acts

A Just Culture supports learning from unsafe acts. The first goal of any manager is to improve safety and production. Any event related to safety, especially human or organisational errors, must be first considered as a valuable opportunity to improve operations through experience feedback and lessons learnt (IAEAa).

Failures and 'incidents' are considered by organizations with good safety cultures as lessons which can be used to avoid more serious events. There is thus a strong drive to ensure that all events which have the potential to be instructive are reported and investigated to discover the root causes, and that timely feedback is given on the findings and remedial actions, both to the work groups involved and to others in the organization or industry who might experience the same problem. This 'horizontal' communication is particularly important (IAEAb).

Organisations need to understand and acknowledge that people at the sharp end are not usually the instigators of accidents and incidents and that they are more likely to inherit bad situations that have been developing over a long period (Reason, 1997). In order that organisations learn from incidents, it is necessary to recognize that human error will never be eliminated; only moderated. In order to combat human errors we need to change the conditions under which humans work. The effectiveness of countermeasures depends on the willingness of individuals to report their errors, which requires an atmosphere of trust in which people are encouraged for providing essential safety-related information (Reason, 1997).

### *2.3 Four types of unsafe behaviours*

Marx (2001) has identified four types of behaviour that might result in unsafe acts. The issue that has been raised by Marx (2001) and others is that not all of these behaviours necessarily warrant disciplinary sanction.

1. **Human error** – is when there is general agreement that the individual should have done other than what they did. In the course of that conduct where they inadvertently caused (or could have caused) an undesirable outcome, the individual is labeled as having committed an error.
2. **Negligent conduct** – Negligence is conduct that falls below the standard required as normal in the community. Negligence, in its legal sense, arises both in the civil and criminal liability contexts. It applies to a person who fails to use the reasonable level of skill expected of a person engaged in that particular activity, whether by omitting to do something that a prudent and reasonable person would do in the circumstances or by doing something that no prudent or reasonable person would have done in the circumstances. To raise a question of negligence, there needs to be a duty of care on the person, and harm must be caused by the negligent action. In other words, where there is a duty to exercise care, reasonable care must be taken to avoid acts or omissions which can reasonably be foreseen to be likely to cause harm to persons or property. If, as a result of a failure to act in this reasonably skillful way, harm/injury/damage is caused to a person or property, the person whose action caused the harm is liable to pay damages to the person who is, or whose property is, harmed.
3. **Reckless conduct** – (gross negligence) is more culpable than negligence. The definition of reckless conduct varies between countries, however the underlying message is that to be reckless, the risk has to be one that would have been obvious to a reasonable person. In both civil and criminal liability contexts it involves a person taking a conscious unjustified risk, knowing that there is a risk that harm would probably result from the conduct, and foreseeing the harm, he or she nevertheless took the risk. It differs from negligence (where negligence is the failure to recognize a risk that should have been recognized), while recklessness is a conscious disregard of an obvious risk.
4. **Intentional "willful" violations** – when a person knew or foresaw the result of the action, but went ahead and did it anyway.

### *2.4 Defining the border of "unacceptable behaviour"*

The difficult task is to discriminate between the truly 'bad behaviours' and the vast majority of unsafe acts to which discipline is neither appropriate nor useful. It is necessary to agree on a set of principles for drawing this line:

Definition of **Negligence**: involved a harmful consequence that a 'reasonable' and 'prudent' person would have foreseen.

Definition of **Recklessness**: one who takes a deliberate and unjustifiable risk.

Reason (1997) believes that the line between "culpable" (or "unacceptable") and "acceptable" behaviour should be drawn after 'substance abuse for recreational purposes' and 'malevolent damage.'

| | |
|---|---|
| **Malevolent damage<br>Substance abuse for recreation** | **UNACCEPTABLE BEHAVIOUR** |
| **Substance abuse with mitigation<br>Negligent error** | **"ACCEPTABLE BEHAVIOUR"** |
| **Unsafe acts** | **BLAMELESS BEHAVIOUR** |

The following figure (Figure 2) illustrates the borders between "acceptable" and "bad" behaviours, where statements in the safety policy can deal with human error (such as omission, slips etc), and where laws come into play when criminal offenses and gross negligence are concerned. Procedures and proactive management can support those situations that are less clear, at the borders.

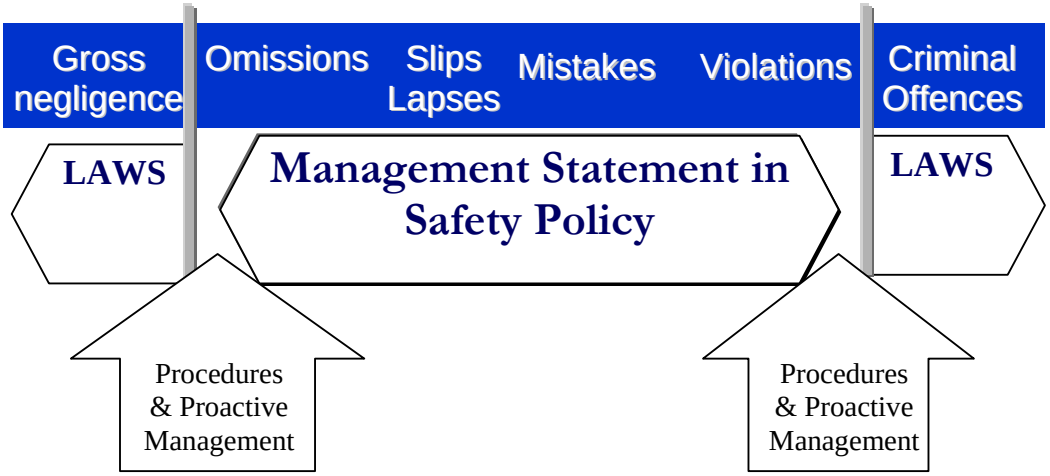


Figure 2. Defining the borders of "bad behaviours" (From P. Stastny Sixth GAIN World Conference, Rome, 18-19 June, 2002)

### *2.5 Determining 'culpability' on an individual case basis*

In order to decide whether a particular behaviour is culpable enough to require disciplinary action, a policy is required to decide fairly on a case-by-case basis. Three types of disciplinary policy are described below (Marx, 2001). The third policy provides the basis for a Just Culture. Reason's Culpability Decision-Tree follows,

presenting a structured approach for determining culpability. This is followed by Hudson's (2004) expanded Just Culture diagram, which integrates types of violations and their causes, and accountabilities at all levels of the organization.

- **Outcome-based Disciplinary Decision Making** - focuses on the outcome (severity) of the event: the more severe the outcome, the more blameworthy the actor is perceived. This system is based on the notion that we can totally control the outcomes from our behaviour. However, we can only control our intended behaviours to reduce our likelihood of making a mistake, but we cannot truly control when and where a human error will occur. Discipline may not deter those who did not intend to make a mistake (Marx, 2001).

- **Rule-based Disciplinary Decision Making** - Most high-risk industries have outcome-based rules (e.g. separation minima) and behaviour-based rules (e.g. work hour limitation). If either of these rules is violated, punishment does not necessarily follow, as for example, in circumstance where a large number of the rules do not fit the particular circumstances. Violations provide critical learning opportunities for improving safety – why, for example, certain violations become the norm.

- **Risk-based Disciplinary Decision Making** – This method considers the intent of an employee with regard to an undesirable outcome. People who act recklessly, are thought to demonstrate greater intent (because they intend to take a significant and unjustifiable risk) than those who demonstrate negligent conduct. Therefore, when an employee should have known, but was unaware, of the risk s/he was taking, s/he was negligent but not culpably so, and is therefore would not be punished in a Just Culture environment.

**Reason's Culpability Decision-Tree** - Figure 3 displays a decision tree for helping to decide on the culpability of an unsafe act. The assumption is that the actions under scrutiny have contributed to an accident or to a serious incident. There are likely to be a number of different unsafe acts that contributed to the accident or incident, and Reason (1997) believes that the decision tree should be applied separately to each of them. The concern is with individual unsafe acts committed by either a single person or by different people at various points of the event sequence. The five stages include:

1. **Intended act**: The first question in the decision-tree relates to intention, and if both actions and consequences were intended, then it is possibly criminal behaviour which is likely to be dealt with outside of the company (such as sabotage or malevolent damage).

2. **Under the influence of alcohol or drugs** known to impair performance at the time that the error was committed. A distinction is made between substance abuse with and without 'reasonable purpose (or mitigation), which although is still reprehensible, is not as blameworthy as taking drugs for recreational purposes.

3. **Deliberate violation of the rules** and did the system promote the violation or discourage the violation; had the behaviour become automatic or part of the 'local working practices.'

4. **Substitution test**: could a different person (well motivated, equally competent, and comparably qualified) have made the same error under similar circumstances (determined by their peers). If "yes" the person who made the error is probably blameless, if "no", were there system-induced reasons (such as insufficient training, selection, experience)? If not, then negligent behaviour should be considered.

5. **Repetitive errors**: The final question asks whether the person has committed unsafe acts in the past. This does not necessarily presume culpability, but it may imply that additional training or counseling is required.

**Reason's Foresight test**: provides a prior test to the substitution test described above, in which culpability is thought to be dependent upon the kind of behaviour the person was engaged in at the time (Reason and Hobbs, 2001).

The type of question that is asked in this test is:

- Did the individual knowingly engage in behaviour that an average operator would recognise as being likely to increase the probability of making a safety-critical error?

If the answer is 'yes' to this question in any of the following situations, the person may be culpable. However, in any of these situations, there may be other reasons for the behaviour, and thus it would be necessary to apply the substitution test.

- Performing the job under the influence of a drug or substance known to impair performance.
- Clowning around whilst on the job.
- Becoming excessively fatigued as a consequence of working a double shift.
- Using equipment known to be sub-standard or inappropriate.

**Hudson's Version of the Just Culture Diagram (Figure 4)**

Hudson (2004) expands Reason's Culpability Decision tree, using a more complex picture that integrates different types of violation and their causes. This model starts from the positive, indicating that the focus of priority. It defines accountabilities at all levels and provides explicit coaching definitions for failures to manage violations. This approach (called "Hearts and Minds") includes the following four types of information to guide those involved in deciding accountability:

- Violation type - normal compliance to exceptional violation
- Roles of those involved - managers to workers
- Individuals - the reasons for non-compliance
- Solutions - from praise to punishment

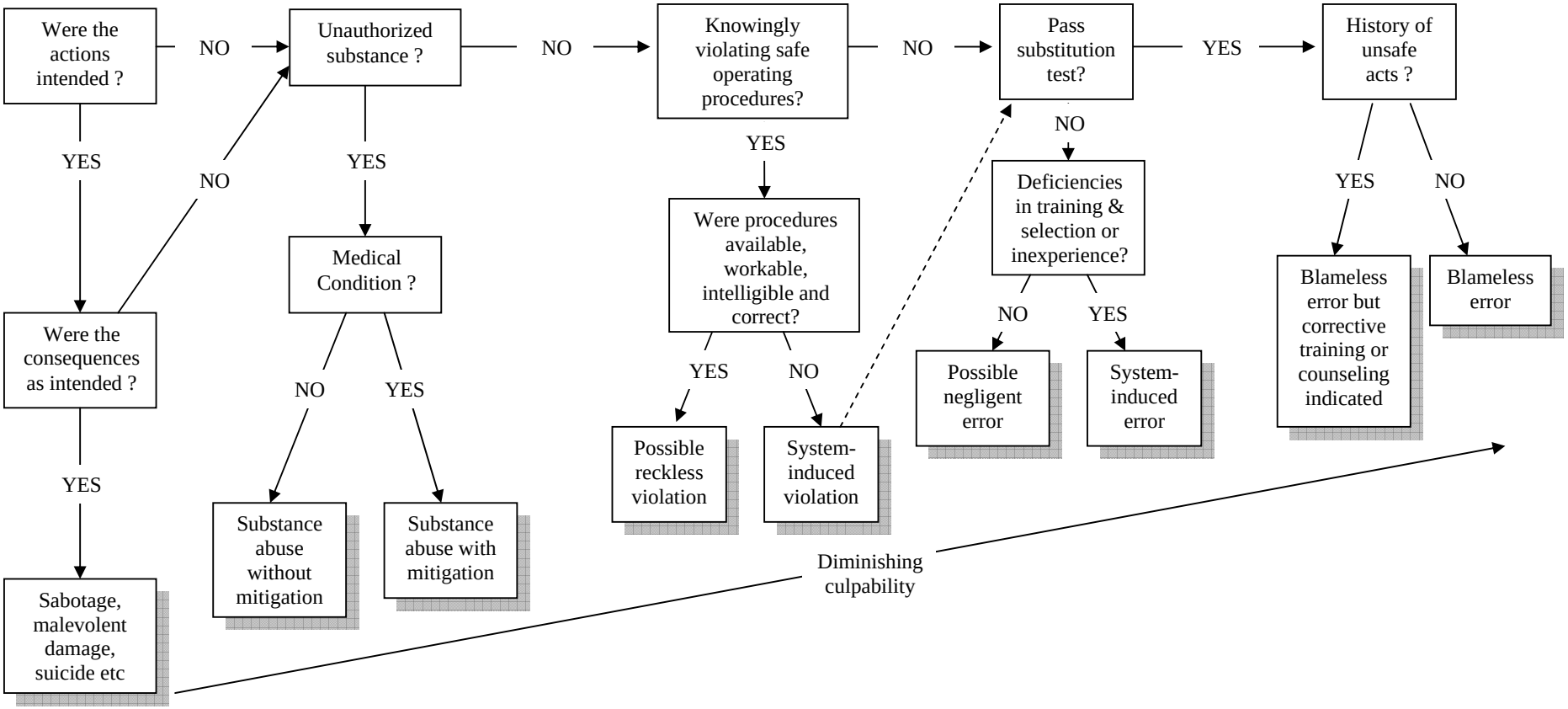


Figure 3. From Reason (1997) A decision tree for determining the culpability of unsafe acts. p209

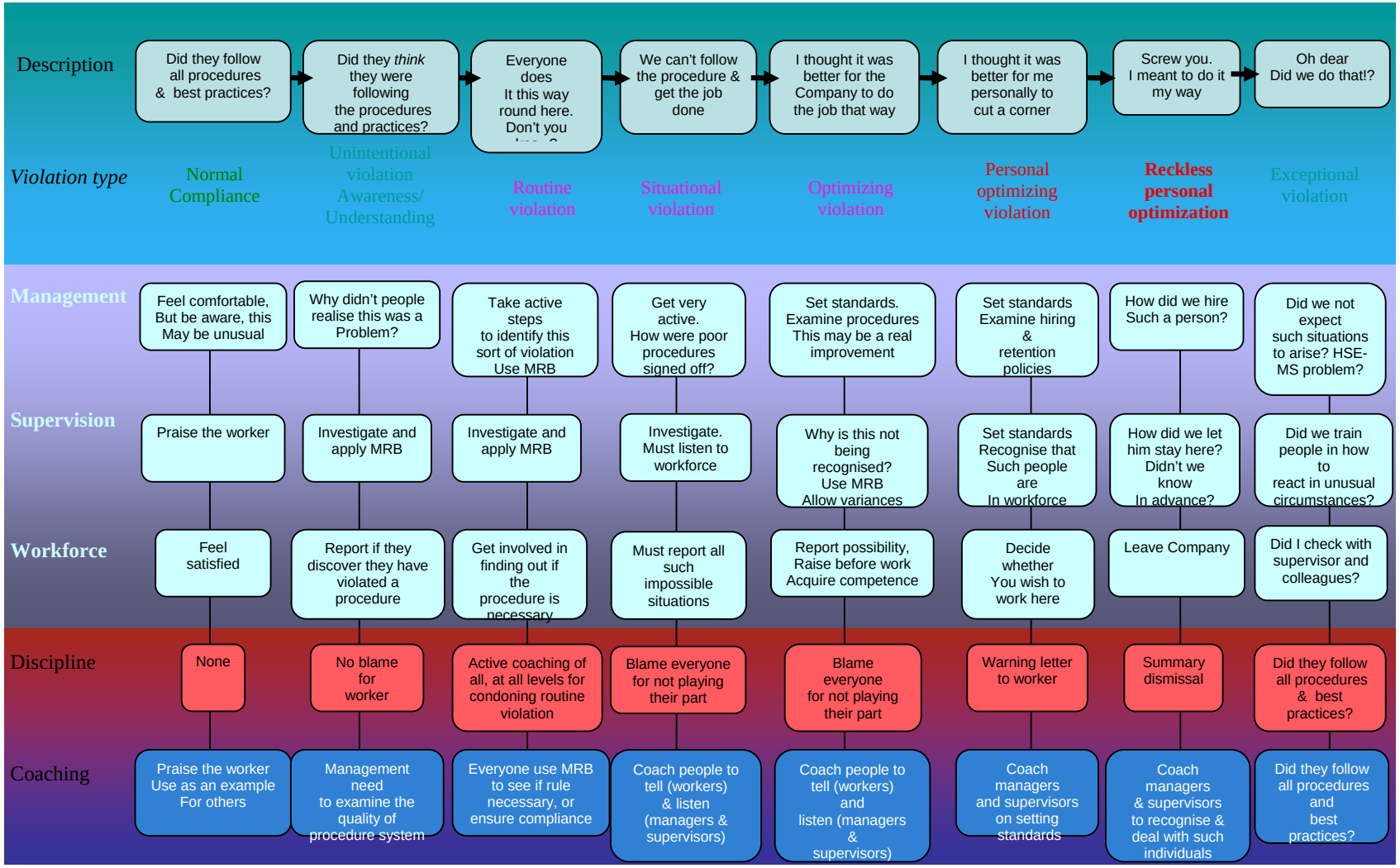


Figure 4. Hudson's refined Just Culture Model (From the Shell "Hearts and Minds" Project, 2004)

**Determining Negligence: an example** (SRU, 2003)

- Was the employee aware of what he or she has done? NO
- Should he have been aware? YES
- Applying the "Substitution Test": Substitute the individual concerned with the incident with someone else coming from the same area of work and having comparable experience and qualifications. Ask the "substituted" individual: "In the light of how events unfolded and were perceived by those involved in real time, would you have behaved any differently?" If the answer is "probably not", then apportioning blame has no material role to play.
- Given the circumstances that prevailed at the time, could you be sure that you would not have committed the same or similar type of unsafe act? If the answer again is "probably not", the blame is inappropriate.

**Dealing with repetitive errors**

Can organisations afford someone who makes repeated errors while on the job? The answer to this question is difficult as the causes of repeat errors have two different sources:

1) An individual may be performing a specific task that is very prone to error. Just as we can design systems to minimise human error through human factors, we can design systems that directly result in a pronounced rate of error. Therefore it is critical for the designers to be aware of the rate of error.
2) A source of repeated error may be with the individual. Recent traumatic events in one's life or a significant distraction in life can cause some individuals to lose focus on the details of their work, possibly leading to an increased rate of error. In such cases, it may be an appropriate remedy to remove the individual from his current task or to supplement the task to aid in controlling the abnormal rate of error.

**What to do with lack of qualification?**

An unqualified employee can cross the threshold of recklessness if he does not recognise himself as unqualified or as taking a substantial risk in continuing his current work.

Lack of qualification may only reveal that an individual was not fully trained and qualified in the job and therefore show that it is a system failure not to have ensured that the appropriate qualifications were obtained.

# 3. Creating a Just Culture

### *3.1 Benefits of a Just Culture*

The benefits that can be gained from the creation of a Just Culture in an organization include measurable effects such as increased event reports and corrective actions taken, as well as intangible organizational and managerial benefits:

**Increased reporting**

- A Just Culture can lead to not only increased event reporting, particularly of previously unreported events, but also the identification of trends that will provide opportunities to address latent safety problems.
- It has been estimated that for each major accident involving fatalities, there are as many as several hundred unreported incidents that, properly investigated, might have identified an underlying problem in time to prevent the accident. (GAIN Operator's Flight Safety Handbook, 1999)
- A lack of reported events is not indicative of a safe operation, and likewise, an increase in reported events is not indicative of a decrease in safety. Event reporting illuminates potential safety concerns, and any increase in such reporting should be seen as a healthy safety indicator.
- Peter Majgard Nørbjerg of Naviair, Denmark's air traffic service provider, reported that after a June 2001 change to Denmark's law making confidential and non-punitive reporting possible for aviation professionals, the number of reports in Danish air traffic control rose from approximately 15 per year to more than 900 in the first year alone.

**Trust Building**

- The process of clearly establishing acceptable versus unacceptable behavior, if done properly in a collaborative environment, brings together different members of an organization that often have infrequent contact in policy decision-making. This contact, as well as the resulting common understanding of where the lines are drawn for punitive actions, enhances the trust that is at the core of developing Just Culture.
- Patrick Hudson noted in 2001 that "most violations are caused by a desire to please rather than willfulness." This observation emphasizes the inherent nature of the majority of safety violations: (i) that they are indeed inadvertent and (ii) that they are intended to further the organization's operational objectives. This fact is well known on the "front lines" of an airline or air traffic service provider, but is often obscured further up in the management structure, particularly during an investigation of a violation or accident. Likewise, front-line workers may not have a clear understanding of which procedures are "red light" rules (never to be broken) and which are "yellow light" rules (expected to be broken, but will be punished if an accident occurs). Establishing a well-defined, well-monitored Just Culture will

help all members of an organization to better define their own responsibilities and understand the roles, influences, and motivations of others in the organization.

- It can be expected that a Just Culture will increase confidence of front-line employees in its management's prioritization of safety over its interest in assigning blame. It will reinforce the organization's common vision and values regarding the need to put safety first in all aspects of its operation.

**More Effective Safety and Operational Management**

- It can be expected that a Just Culture will enhance the organization's effectiveness by defining job performance expectations, establishing clear guidelines for the consequences of deviance from procedures, and promoting the continuous review of policies and procedures.
- Just Culture can allow an organization to be better able to determine whether violations are occurring infrequently or if deviation from established procedures has become normalized among its front-line employees and supervisors.
- Outdated or ineffective management structures can be manifested in many ways, as by operational inefficiencies, lost opportunities, or safety lapses. While Just Culture is primarily implemented by a safety motive, it is recognized "that the same factors which are creating accidents are creating production losses as well as quality and cost problems." (Capt. Bertrand DeCourville, Air France, 1999)

### *3.2 What is expected to change in an organisation with a Just Culture*

The shift from the traditional "Blame Culture" to a more constructive "Just Culture" can be expected to have tangible benefits that will contribute positively to the overall safety culture of an organisation by emphasizing two crucial, yet not mutually-exclusive, concepts:

- Human error is inevitable and the system needs to be continually monitored and improved to accommodate those errors.
- Individuals are accountable for their actions if they knowingly violate safety procedures or policies.

A Just Culture is necessary for an organisation to effectively monitor the safety of its system both by understanding the effects of normal human error on the system and by demonstrating its resolve to enforce individual operator responsibility. This responsibility includes adherence to safety regulations as well as reporting inadvertent errors that can alert an organisation to latent safety dangers. Operating with a Just Culture will create conditions conducive to reporting and collaborative decision-making regarding policy and procedural changes.

One example of the marked changes in an organisation as a result of creation of Just Culture occurred at Naviair, the air traffic service provider in Denmark, made possible through a change in its national law. (Details are described in section 4.1)

Based on the experience of Naviair and others who have implemented Just Culture, the following values can be expected to be prevalent throughout the organization:

- People at all levels understand the hazards and risk inherent in their operations and those with whom they interface.
- Personnel continuously work to identify and control or manage hazards or potential hazards.
- Errors are understood, efforts are made to eliminate potential errors from the system, and willful violations are not tolerated.
- Employees and management understand and agree on what is acceptable and unacceptable.
- Employees are encouraged to report safety hazards.
- When hazards are reported, they are analyzed using a hazard-based methodology, and appropriate action is taken.
- Hazards, and actions to control them, are tracked and reported at all levels of the organization.
- Employees are encouraged to develop and apply their own skills and knowledge to enhance organizational safety.
- Staff and management communicate openly and frequently concerning safety hazards.
- Safety reports are presented to staff so that everyone learns the lessons.
- Feedback is provided to users and the aviation community:
    - Acknowledgement - reporters like to know whether their report was received and what will happen to it, what to expect and when.
    - Feedback – it is important that the users see the benefits of their reporting in knowledge sharing. If not, the system will die out.

### *3.3 Creating and implementing a Just Culture*

This section briefly describes some of the main steps as well as potential obstacles to achieving a Just Culture. These have come from a number of sources: including Reason (1997); Johnson (2003); lessons from the Danish experience; EUROCONTROL ESARR2 Workshops in 2000 and Vecchio-Sadus and Griffiths (2004).

#### 1. Legal Aspects

In order to reduce the legal impediments to reporting, the two most important issues are: i) indemnity against disciplinary proceedings and ii) having a legal framework that supports reporting of incidents. The first steps in changing the legal aspects could be to:

- Substantiate the current legal situation; does it need to be changed?
- Discuss possibilities of change with company lawyers / legal advisors.
- Discuss with operational personnel what changes in the legal policy they think would improve incident reporting.

**Potential Obstacles**: For many organisations, the main challenge of developing a Just Culture will be to change the legislation, especially if the changes are counter to societal legislation.

### 2. Reporting Policy and Procedures

It is important that the following issues are considered with regard to the underlying reporting structure and company commitment:

- Confidentiality or de-identification of reports.
- Separation of agency/department collecting and analyzing the reports from those bodies with the authority to institute disciplinary proceedings and impose sanctions.
- Company commitment to safety.
- Some degree of independence must be granted to the managers of the reporting system.

**Potential Obstacles**: Persuading senior management of the need for creating a Just Culture and to commit adequate resources to it may be difficult.

### 3. Methods of Reporting

It is important that issues such as the following are considered with regard to the method by which reports will be collected:

- Rapid, useful, accessible and intelligible feedback to the reporting community
- Ease of making the report - voluntary reporting should not be perceived as an extra task
- Clear and unambiguous directions for reporting and accessibility to reporting means
- Professional handling of investigation and lesson dissemination

The first steps to develop a 'Just Culture' Reporting System could be:

- Decide on voluntary versus mandatory reporting system
- Decide on anonymous, confidential, open reporting system
- Develop procedures for determining culpability (such as the Just Culture decision tree) and follow-up action (type of discipline or coaching)
- Decide who shall decide culpability (e.g., team consists of safety; operations; management; HR)
- Draft a plan and discuss with a small selection of operational personnel

Further Investigation

- Decide if and how the reports will be further investigated (the focus of the investigation; face-to-face interview.)
- Decide which reports will be further investigated (those which are most severe; or those with the most learning potential).
- Decide who will investigate the reports.

**Potential Obstacles:** It may not be obvious to all organisations which system would suit them best. Ideally, a variety of reporting methods (or a flexible method) will be implemented, as not one reporting method will suit everyone's needs. It may be necessary for the organisation to survey the needs of the potential users to better understand which reporting method would be more readily accepted. A system that is unclear and ambiguous could create distrust in the system, so it is necessary that the procedures to decide culpability must be clear and understood by all. Reporters may not reveal their identity (e.g. in a confidential reporting system) or choose not to be interviewed, which could prevent any further investigation of an event.

### 4. Determine Roles and Responsibilities, Tasks and Timescale

For such a system to thrive, a number of different people need to be involved in the implementation and maintenance of the system. A 'local champion' will be needed to promote and act as guarantor to ensure the assurances of anonymity will be preserved in the face of external or managerial pressures. Decide and select someone to:

- Champion the system
- Educate users and implement system
- Collect and analyse the reports
- Decide which department will be involved in the disciplinary (decision making) process
- Feedback the information (develop newsletter)
- Develop and maintain the data collection system

**Potential Obstacles:** Having sufficient resources (e.g. people) to run the system, as well as having enough of the 'right' kind-of people, who are energetic, well-liked, well-known and respected in the company. Maintaining the energy required for the system to function.

### 5. Develop Reporting Form

It is important to have a reporting form that encourages accurate and complete reporting (e.g. questions that are understandable); otherwise reporters may provide erroneous or misleading responses. Determine:

- What information you want to collect (e.g. only that information that will improve learning in the organisation).
- What you want to do with the information (e.g. case studies; summary data) as this will determine what information you collect.
- What format you want to collect it in (e.g. electronic, paper or both).
- What resources are required to develop the system (people, costs).
- Whether (and how) the reporting form should be integrated with the current incident reporting system.

**Potential Obstacles:** It could be possible that too much /irrelevant data is collected. It is important that it is kept simple, but with enough detail that useful analysis can be applied to it.

### 6. Develop Template for Feedback to Potential Users

Determine:

- What type of information you want to disseminate (e.g. summary; case studies; "hotspots"; human factors data)
- How to disseminate the information (e.g. newsletter)
- Who will be involved (writing; editing newsletter; senior management endorsing action plan)
- How often you will disseminate the feedback
- Template style of the newsletter, title, etc

**Potential Obstacles:** The newsletter is not read. It may be necessary to find out what sort of information the audience would like to know about; provide examples that will be of interest and relevant to their job. One may need to vary the style over time, so that it maintains their attention, and so that they are likely to contribute to it.

### 7. Develop a Plan for Educating the Users and Implementing the System

Potential reporters must know about the reporting scheme and know how to submit a report; this will include induction courses; periodic retraining to remind staff of the importance of reporting; and ensuring that staff are provided with access to reporting forms. Below are some initial steps for implementing the system.

- Develop brochures to explain the changes in the legal system
- Present the changes to all staff
- Train a "champion" (or a team) to be the main focus for the system
- Explain to users how this new system will fit into the current system
- Have a "Health and Safety Week" campaign to promote the reporting system
- Include a section on the reporting system in the safety induction course
- Use email and internet to communicate; announcing new information, and congratulating participants
- Design posters to describe the reporting system process pictorially

**Potential Obstacles:** Information about the system may not be disseminated to a wide enough audience and to a deep enough level within the organization.

### 8. Developing and Maintaining the Right 'Culture'

A number of additional issues concerning the 'cultural' aspects of reporting are necessary in order to maintain motivation to report, such as the trust between reporters and the managers must genuinely exist for the reporting system to work. The main aims are to develop an open culture in which people feel able to trust the system and to develop new ways to motivate people to use the system. Below are initial ideas.

- System visibility – potential contributors to be made aware of the procedures and mechanisms that support the incident reporting system
- Maintaining the employees' voice – must ensure that the reports are used to voice the employees voice and not used to suit existing management priorities

- Publicized participation – publish the contribution rate from different parts of the organization to show that others have trust in the system (but must ensure that this doesn't have the opposite effect, such as asking for certain quotas of reports per month)
- Develop 'marketing strategies' for enhancing safety culture (see Vecchio-Sadus and Griffiths, 2004): a) Customer centered – focusing the marketing strategy to suit the audience (e.g. management will have a different focus than the operations personnel); b) Link safety values to the core business – and show tangible evidence for their impact, such as how safety can enhance production, efficiency, communication and even cost benefits; c) Reward and recognition – positive reinforcement for reporting incidents
- Change attitudes and behaviours - focus on the immediate, certain and positive consequences of reporting incidents and publicise the "pay-offs" of reporting incidents
- Management commitment – raise awareness of management's commitment to safety, with a "hands on approach"; have management involved in the reporting process to show that they visibly believe and promote the Just Culture
- Employee involvement – ensure employee involvement so they are committed to the need to be actively involved in decision making and the problem solving process.

**Potential Obstacles:** It takes time and persistence to try and change safety attitudes and behaviours. Maintaining motivation of the personnel set with the task of improving safety reporting can be a potential obstacle.

Three planning aspects that need to be taken into consideration: 1) the required time to undertake the steps and sub-steps (include start and end dates); 2) the estimated costs involved and 3) who will undertake the work.

# 4. Case Studies

Four case studies are provided to show the several ways in which different organisations have attempted to create a Just Reporting Culture (with various levels of success), including: the Danish (Nørbjerg, 2003), the New Zealand Civil Aviation Authority (NZ CAA, 2004), and UK Civil Aviation Authority and Alaska Airline's systems. These case studies are described under different headings, depending on the information available.

## *4.1 Danish System*

### Legal Aspects

In 2000, the Chairman of the Danish Air Traffic Controllers Association described the obstacles for reporting during an interview on national prime-time television. This influenced the Transportation Subcommittee of the Danish Parliament to ask for the Danish Air Traffic Control Association to explain their case. After exploring various international legislations on reporting and investigating incidents and accidents, the Danish government proposed a law in 2002 that would make non-punitive, confidential reporting possible.

### Reporting System

The Danish reporting system ensures immunity against penalties and disclosure but also any breach against the non-disclosure guarantee is made a punishable offense. The system includes the following:

- Mandatory: Air Traffic Controllers must submit reports of events. It is punishable **not** to report an incident in aviation.
- Non-punitive: Reporters are ensured indemnity against prosecution or disciplinary actions for any event they have reported based on the information contained in the reports submitted. However, this does not mean that reports may always be submitted without consequences.
- Immunity against any penal / disciplinary measure: If a report is submitted within 72 hours of an occurrence; if it does not involve an accident; or does not involve deliberate sabotage or negligence due to substance abuse. Punitive measures are stipulated against any breach of the guaranteed confidentiality.
- Confidential: The reporter's identity may not be revealed outside the agency dealing with occurrence reports. Investigators are obliged to keep information from the reports undisclosed.

### Implementation Process

1. Danish Aviation Authority body (Statens Luftfartsvaesen) implemented the regulatory framework and contacted those license holders who would mandatorily be involved in the reporting system: pilots; air traffic controllers; certified aircraft mechanics and certified airports.

2. Danish Air Traffic Control Service Provider (Naviair)

- Management sent a letter to every air traffic controller explaining the new system, stating their commitment to enhance flight safety through the reporting and analyzing of safety-related events.

- Incident investigators were responsible for communicating the change, and were given a full mandate and support from management.

- An extensive briefing campaign was conducted to give information to air traffic controllers; in the briefing process the controllers expressed concerns about confidentiality and non-punitive issues. These issues were addressed by explaining the intention of the law governing the reporting system, the law that would grant media and others no access to the reports and would secure freedom from prosecution. Further it was emphasized that no major improvement in safety would be possible if knowledge about the hazards was not gathered.

- Priorities were set up on which reports are dealt with immediately, and on how much attention is given by the investigators. The investigation of losses of separation are investigated thoroughly including gathering factual information such as voice recordings, radar recordings, collection of flight progress strips and interviews with involved controllers.

- Investigative reports have to be completed within a maximum of 10 weeks. The reports include the following elements: Aircraft proximity and avoiding manoeuvers; safety nets (their impact on and relevance for the incident); system aspects; human factors; procedures; conclusion and recommendations. The ultimate purpose of the report is to recommend changes to prevent similar incidents.

**Feedback**

Increased Reporting: After one year of reporting 980 reports were received (compared to 15 the previous year). In terms of losses of separation, 40-50 were received (compared to the 15 reported in the previous year).

To Reporters: A new incident investigation department was set up at Naviair with six investigators and recording specialists. They provide feedback to the reporter, when the report is first received and when the analysis of the event is concluded. It is important that the organization is ready to handle the reports. Feedback is offered twice a year in which all air traffic controllers, in groups, receive safety briefings (supported by a replay of radar recordings where possible) and discussions are held of safety events that have been reported and analysed. Four issues of a company safety letter are distributed to the controllers each year.

To the Public: It was acknowledged that, according to the Freedom of Information Act, the public has the right to know the facts about the level of safety in Danish aviation. Therefore it was written into the law that the regulatory authority of Danish aviation, based on de-identified data from the reports, should publish overview statistics two times per year.

Other Flight Safety Enhancements: flight safety partnership- a biannual meeting with flight officers from all Danish airlines is held to address operational flight safety in Danish airspace

### Lessons learnt

- Trust/confidentiality – one break in this trust can damage a reporting system, and that reports must be handled with care.
- Non-punitive nature – it is important that information from self-reporting not be used to prosecute the reporter.
- Ease of reporting – Naviair uses electronic reporting, so that controllers can report wherever they have access to a computer.
- Feedback to reporters – the safety reporting system will be seen as a "paper-pushing" exercise if useful feedback is not given.
- Safety improvement has been assessed by Naviair, where they think information gathering is more focused and dissemination has improved.

## *4.2 New Zealand – CAA*

### Overview

In 1999, the NZ CAA became interested in "Just Culture", and started the process of learning how it functions, and the process required to implement it. They are frequently faced with making decisions regarding the choice of regulatory tool that is appropriate to apply to an aviation participant when there is a breach of the Civil Aviation Act or Rules, and they saw the "Just Culture" model as holding the promise of promoting compliance **and** facilitating learning from mistakes. However, to fully embrace 'Just Culture' in New Zealand, there will need to be some legislation changes and considerably more selling of the concept to the aviation industry (particularly at the GA end) in order to get the necessary paradigm shift (away from fear of the regulator when considering whether or not to report occurrences).

### Reporting System

New Zealand operates a mandatory reporting system, with provision for information revealing the identity of the source to be removed if confidentiality is requested (the latter happens only rarely).

The reporting requirements apply to all aircraft accidents and to all serious incidents except those involving various sport and recreational operations. In addition to the notification requirements for accidents and incidents, the rules require the aircraft owner or the involved organisation notifying a serious incident to conduct an investigation to identify the facts relating to its involvement and the causal factors of the incident. A

report of the investigation is required within 90 days of the incident, and must include any actions taken to prevent recurrence of a similar incident.

Information received under this mandatory reporting system cannot be used for prosecution action, except in special circumstances such as when false information is supplied or when 'unnecessary danger' to any other person is caused. (Ref New Zealand Civil Aviation Rule CAR Part 12.63.)

### Implementation Process

Just Culture Seminars – the NZ CAA invited relevant people in the aviation industry (including large and small airline operators) and CAA personnel to attend a seminar by a leading expert on Just Culture. The seminars were extremely well received by all attendees, thus giving the CAA confidence that Just Culture principles were appropriate to apply in a safety regulatory context.

The NZ CAA has a set of tools that they apply to an aviation participant when there is a breach of the Civil Aviation Act or Rules. The tools are many and varied and form a graduated spectrum from a simple warning, through re-training and diversion, to administrative actions against Aviation Documents and prosecutions through the Court. The CAA base their decisions on information which arises from a variety of sources such as: a CAA audit, an investigation of an accident or incident, or a complaint from the public.

For the past four years, the CAA has been using Just Culture principles to decide when:

a) Information from a safety investigation into a mandatory reported occurrence should cross the "Chinese wall" to be used in a law enforcement investigation. (In this context they are using Just Culture to draw the line at recklessness as a surrogate for "caused unnecessary danger", which is the terminology used in the relevant NZ Civil Aviation Rule, CAR 12.63.)
b) Document suspension/revocation is appropriate.
c) Education or re-examination is appropriate.

The perhaps natural tendency for a regulatory authority to draw the line below negligence is resisted. By drawing the line below recklessness when making decisions, the CAA believes it will encourage learning from human errors and, once the approach becomes universally understood and accepted by the aviation community, the incidence of non-reporting of safety failures will decrease.

### Lessons Learnt – Legal Aspects

Application of the 'Just Culture' in the manner described above requires the Director to exercise his discretionary powers. However, the NZ CAA does not believe it can fully convince the aviation community that the Director will always follow a 'Just Culture' approach while the current wording of certain sections of the Civil Aviation Act (S.43, S.43A and S.44) remains. This is because these sections, which draw the line at 'causing unnecessary danger' and 'carelessness', effectively outlaw human error that endangers

flight safety, irrespective of the degree of culpability. They believe this is the reason why many in the aviation community think twice before reporting safety failures to the CAA and indicates the need for confidential reporting. In order to improve reporting, these sections of the Act need to be amended to raise the level of culpability to recklessness (gross negligence) before the particular behaviour constitutes an offence.

### *4.3 UK – CAA MOR (Mandatory Occurrence Reporting System)*

The UK CAA has recently reviewed the MOR system to try to improve the level of reporting within the UK aviation community. The objectives of the MOR are to:

1. Ensure that CAA is informed of hazardous or potentially hazardous incidents and defects
2. Ensure that the knowledge of these occurrences is disseminated
3. Enable an assessment to be made and monitor performance standards that have been set by the CAA.

#### Legal Aspects

Assurance Regarding Prosecution - The UK CAA gives an assurance that its primary concern is to secure free and uninhibited reporting and that it will not be its policy to institute proceedings in respect of unpremeditated or inadvertent breaches of law which come to its attention only because they have been reported under the Scheme, except in cases involving failure of duty amounting to gross negligence. With respect to licenses, the CAA will have to take into account all the relevant information about the circumstances of the occurrence and about the license holder. The purpose of license action is to ensure safety and not to penalize the license holder.

#### Responsibilities

The CAA has the following responsibilities: i) evaluate each report; ii) decide which occurrences require investigation by the CAA iii) check that the involved companies are taking the necessary remedial actions in relation to the reported occurrences, iv) persuade other aviation authorities and organizations to take any necessary remedial actions, v) assess and analyse the information reported in order to detect safety problems (not necessarily apparent to the individual reporters); vi) where appropriate, make the information from the reports available and issue specific advice or instructions to particular sections of the industry; vii) where appropriate, take action in relation to legislation, requirements or guidance. The Air Accidents Investigations Branch (AAIB) investigates accidents, and these are passed on to the CAA for inclusion in the MOR.

#### Potential Reporters

Pilots; persons involved in manufacturing, repair, maintenance and overhaul of aircraft; those who sign certificates of maintenance review or release to service; aerodrome licensees/managers; civil air traffic controllers; persons who perform installation, modification maintenance, repair, overhaul, flight checking or inspection of equipment on the ground (air traffic control service).

### Reportable Incidents

a) Any person specified above should report any reportable event of which they have positive knowledge, even though this may not be first hand, unless they have good reason to believe that appropriate details of the occurrence have been or will be reported by someone else.

b) Types of incidents:

i) any incident relating to such an aircraft or any defect in or malfunctioning of such an aircraft or any part or equipment of such an aircraft being an incident, malfunctioning or defect endangering, or which if not corrected would endanger, the aircraft, its occupants, or any other person

ii) any defect in or malfunctioning of any facility on the ground used or intended to be used for purposes of or in connection with the operation of such an aircraft or any part or equipment of such an aircraft being an incident, malfunctioning or defect endangering, or which if not corrected would endanger, the aircraft, its occupants, or any other person.

### Submission of Reports

CAA encourages the use of company reporting systems wherever possible. Reports collected through the company are filtered before they are sent to the CAA (to determine whether they meet the desired criteria of the CAA). The company is encouraged to inform the reporter as to whether or not the report has been passed on to the CAA.

- Individuals may submit an occurrence report directly to the CAA, although in the interest of flight safety they are strongly advised to inform their employers.
- Reports must be despatched within 96 hours of the event (unless exceptional circumstances), and informed by the fastest means in the case of particularly hazardous events.
- Confidential reports – can be submitted when the reporter considers that it is essential that his/her identity not be revealed. Reporters must accept that effective investigation may be inhibited; nevertheless, the CAA would rather have a confidential report than no report at all.

### Processing of Occurrence Reports

The CAA Safety Investigation and Data Department (SIDD) processes the reports (and is not responsible for regulating organisations or individuals). They evaluate the occurrences that require CAA involvement; monitor the progress to closure and follow-up on open reports; disseminate occurrence information through a range of publications; record reports in a database (names and addresses of individuals are never recorded in the database); monitor incoming reports and store data to identify hazards/potential hazards; carry out searches and analyses in response to requests within the CAA and industry; ensure effective communication is maintained between AAIB and CAA in respect of accident and incident investigation and follow-up.

Confidential reports are directed to and reviewed by the Head of SIDD, who initiates a dis-identified record. The Head of SIDD contacts the reporter to acknowledge receipt and to discuss further; after discussions the report is destroyed; and the record is be processed as an occurrence, but annotated as confidential (only accessible by restricted users).

### *4.4 Alaska Airlines*

The following section was taken from a corporate statement from Alaska Airlines that was transmitted to all staff.

#### Legal Aspects

Generally, no disciplinary action will be taken against any employee following their participation in an error investigation, including those individuals who may have breached standard operating procedures.

Disciplinary action will be limited to the following narrow circumstances:

1) An employee's actions involve **intentional (willful) disregard of safety** toward their customers, employees, or the Company and its property. This is applicable when an employee has knowledge of and/or intentionally disregards a procedure or policy. Reports involving simple negligence may be accepted. In cases where an employee has knowledge but still committed an error, the report may be accepted as long as it is determined that the event was not intentional and all of the acceptance criteria listed herein is met.
2) An employee **commits a series of errors** that demonstrates a general lack of care, judgment and professionalism. A series of errors means anything over one. Management retains the discretion to review and interpret each situation and determine if that situation demonstrates a lack of professionalism, judgment or care. When determining what reports are acceptable when a series of errors are involved managers should consider the risk associated with the event and the nature and scope of actions taken as a result of all previous events. A risk table is available to assist managers in making a determination of risk.
3) An employee **fails to promptly report** incidents. For example, when an employee delays making a report in a reasonable time. A reasonable time for reporting is within 24 hours. However, reports should be submitted as soon as possible after the employee is aware of the safety error or close call.
4) An employee **fails to honestly participate** in reporting all details in an investigation covered under this policy. For example, an employee fails to report all details associated with an event, misrepresents details associated with an event, or withholds critical information in his/her report.
5) The employee's actions involve **criminal activity, substance abuse, controlled substances, alcohol, falsification, or misrepresentation**.

#### Reporting System

The Alaska Airlines Error Reporting System (ERS) is a non-punitive reporting program which allows employees to report to management operational errors or close calls that occur in the workplace. This system is designed to capture events that normally go unreported. It also provides visibility of problems to management and provides an opportunity for correction.

#### Roles and Responsibilities

<u>The Safety Division</u> has oversight of the program. Supervisors and local management have responsibility for the day-to-day management of reports submitted, investigations performed and implementation of corrective actions.

Users: Any employee not covered by the Aviation Safety Action Program (ASAP) or Maintenance Error Reduction Policy (MERP). These employees are not covered by ERS because they are certificated by the FAA, and the company cannot grant immunity to them in all cases. ASAP provides protection for certificated employees. Pilots and Dispatchers are currently covered under ASAP. Until Maintenance & Engineering develops an ASAP, Maintenance & Engineering employees will be covered under MERP.

### Reporting Procedure

1. Reporters can file a report on www.alaskasworld.com. An employee can also submit a report over the phone by contacting the Safety Manager on Duty.
2. A report should be promptly submitted, normally as soon as the employee is aware of the error or close call. Reports made later may be accepted where extenuating circumstances exist.

### Feedback

The employee's supervisor will review the report, determine if it meets all criteria for acceptance and notify the employee. If the report is not accepted, the employee's supervisor is responsible for contacting the Safety Division immediately for review. Concurrence from the Safety Division is required prior to the non-acceptance of a report. The Safety Division will record and review all reports submitted under this program. The Internal Evaluation Program (IEP) will accomplish a monthly review of corrective actions. All long-term changes to procedures and policies will be added to the IEP audit program and become permanent evaluation items for future audits. A summary of employee reports received under this system will be presented to the Board of Directors Safety Committee quarterly. Summary information will also be shared with employees on a regular basis.

# 5. References


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# Appendix A. Reporting Systems

This section describes attributes (not necessarily mutually exclusive) of mandatory, voluntary, and confidential reporting systems (from Gordon, 2002).

### *A1. Mandatory accident and incident systems*

The traditional method of recording accidents is by using a mandatory system that companies and regulatory bodies manage. One of the main reasons for the mandatory recording of accidents is for legal and insurance purposes, although their purpose is also for learning and prevention of similar incidents. However, a difficulty with learning from such types of information is that people are possibly more reluctant to disclose the whole story, because of their reluctance to take the blame for the incident. The other problem with such systems is that because there are not large numbers of accidents to record, high potential incidents are also included. Mandatory reporting of incidents means that few will be reported because many incidents go unnoticed and therefore it is difficult to enforce (Tamuz, 1994). Mandatory incident systems are reinforced through automatic logging systems in aviation (e.g. the Black Box system) and the railway industry (e.g. Signals Passed at Danger, SPD); however, the recording of incidents still depends on reporting by the individual worker (Clarke, 1998).

### *A2. Voluntary incident systems*

Voluntary reporting forms are submitted by the reporter without any legal, administrative or financial requirement to do so (Chappell, 1994). In such a system, incentives to report may be offered (such as fines and penalties waived) and the reported information may not generally be used against the reporters. The quality of information received from voluntary reports is generally higher than from mandatory systems, mainly because people who report into voluntary systems do so because they want to see a safety issue pursued. ASRS is a voluntary system and the number of reports depends on the publicity; politics; and perceived reporting incentives (Tamuz, 1994).

### *A3. Confidential accident and incident systems*

In order for any workforce to feel 100% comfortable about reporting incidents and accidents to management, an exemplary open reporting culture is required. However, does such an organisation exist? O'Leary (1995) believes that in an environment in which the safety culture is not exemplary, for example where a reporter may fear (rightly or wrongly) that they may be disciplined, confidentiality is a necessity. So, how do companies know when they need a confidential system?

#### A3.1 The process of confidential reporting

The main purpose of confidential reporting systems is to allow companies to collect larger quantities of information and more detailed accounts of accidents and incidents. In addition, confidential reporting programmes allow incidents and hazardous situations to

be picked up early on, so that alerting messages can be distributed to personnel on other installations. Furthermore, this information can strengthen the foundation of human factors safety research, which is particularly important since it is generally conceded that over two thirds of accidents and incidents have their roots in human and organisational errors.

Confidential reporting programmes allow personnel to report their errors or safety concerns to an independent 'safety broker'. This safety middleman assesses a report, where appropriate draws it to the attention of the operator and safety authority and over time, builds up a database which can be used to detect safety trends or to change training or procedures. Companies that recognise and support such data collection systems accept that human beings do not like telling their superiors about their mistakes or those of their workmates.

Confidential Accident Reporting Systems protect the identity of the reporter. Reports may or may not be submitted anonymously to a confidential programme. If the identity of the reporter is known at the time of submission, it enables further details to be collected if necessary. The identity of the reporter is either removed or protected from distribution. Voluntary confidential incident reporting programmes promote the disclosure of human errors, provide the benefit of situations described with candid detail, and enable others to learn from mistakes made. Voluntary systems may also produce a higher quality of reporting from individuals motivated by a desire to see an issue pursued.

By protecting the identity of individuals or organisations, confidential reporting systems make it possible to gain the support of the industry and promote incident reporting. ASRS assures confidentiality by eliminating any information that could identify the flight and the airline, allowing them to gather valuable information about incidents, especially regarding the human factors, which is normally difficult to obtain from other sources. Guarantees of confidentiality are ineffective if the organisational conditions enable supervisors or co-workers to deduce who reported a potentially hazardous situation (Tamuz, 1994).

### A3.2 Examples of confidential reporting systems

Since the ASRS system was developed in 1978, many aviation regulatory bodies have followed suit in Britain (CHIRP), Australia (CAIR), Canada (CASRS) and South Africa (SAASCo). The British confidential aviation system, CHIRP, which is held by an independent charitable organisation, was introduced after it was found that pilot errors were significantly under-reported by pilots making the reports. Pilots can make complaints into the system about unsafe or illegal practices by their employers and it provides evidence of incidents which would otherwise remain unreported, such as ergonomic deficiencies and breaches of discipline.

Other industries, such as the UK railway industry, have introduced a confidential reporting system (CIRAS) which is operated by the Centre for Applied Social Psychology at the University of Strathclyde. In addition, the US Nuclear Regulatory Commission (HPES), petrochemical processing and steel production (PRISMA), US

Navy and US Marines (HFACS) and health care (MERP) have confidential reporting systems in place. Many of these confidential reporting systems have been found to have a direct impact on changing the company's systems, such as introducing new training or re-designing equipment.

The Nuclear Regulatory Commission introduced a human factors confidential reporting system (HPES) in which no penalties are associated with reporting non-consequential events or 'close calls'. In the highly charged, political, financially accountable and legal environment of nuclear power, this system was backed by communal pressure and became institutionalised and effective across the industry. The intensified approach to process improvement led to financial gains through more efficient power production (fewer outages, shutdowns, reduction of capacity). The confidentiality and other protections within the system increased in proportion to the sensitivity, value and difficulty of obtaining the desired information (Barach & Small, 2000).

In addition, airline companies, such as British Airways, have implemented their own in-house confidential reporting systems (HFRP) into their overall safety systems. In British Airways, the benefits of confidential reporting systems have been demonstrated in the increase in information collected from their confidential reporting form (Human Factors Report), compared to their mandatory reporting form (ARS), where they believe the Human Factors Programme allows a freer and more complete level of reporting by flight crew.

Berman & Collier (1996) surveyed 50 companies (power generation; aviation; rail; marine transportation; onshore and offshore oil & gas; petrochemical; manufacturing; food & drink) incident reporting systems. The companies used a range of reporting systems such as anonymous, no-blame reporting, 'in-house' and 'third-party' confidential reporting schemes. The majority of organisations who had confidential reporting systems used 'in-house' systems as opposed to 'third-party', and where 'third-party' systems were used, they are usually used in addition to the in-house systems (Berman & Collier, 1996). Anonymous systems existed in many, but not all companies, and even though all of the companies expressed a desire for a culture which obviated its need, they accepted that it was probably not attainable. The majority accepted the need for a hotline, such as the UK Health and Safety Executive Hazard Hotline.

In another survey of confidential reporting systems, two thirds of the 12 reporting systems examined by Barach & Small (2000) were mandated and implemented by federal government with voluntary participation, over three quarters were confidential and all used narrative descriptions; most offered feedback to their respective communities; some offered legal immunity to reporters as long as data were submitted promptly (e.g. up to 10 days after the event for ASRS).

How can companies transform the current culture of blame and resistance to one of learning and increasing safety? Barach & Small (2000) answered this question with the following three points: (1) by understanding the barriers and incentives to reporting; (2) by introducing norms that inculcate a learning and non-punitive safety reporting culture in training programmes and (3) by reinforcing legal protection for reporters. High risk

industries have shown that implementation of incident reporting systems are essential as they benefit their organisation more than they cost the organisation.

### A3.3 Disadvantages of confidential reporting systems

Not all companies and safety researchers believe that confidential reporting systems are necessary. Berman & Collier (1996) criticised confidential reporting systems by stating that the value of confidentiality or the need for no-blame system may not be entirely appropriate, where an overemphasis on confidentiality may hinder companies moving toward an open reporting culture, as it implies that reporters may need to be protected from management.

In addition, other researchers have stated that confidential systems are difficult to validate objectively and it can be difficult for management to accept information from people who wish to remain anonymous (especially managers who are not committed to human factors reporting). However, without such systems organisations may miss the genuine concerns of crews (O'Leary, 1995). Other limitations of confidential reporting systems are described within the following section.

This section has described some of the ways of collecting detailed information about accidents and incidents, particularly focusing on confidential reporting systems. Industries have found that immunity; confidentiality; independent outsourcing of report collection and analysis by peer experts; rapid meaningful feedback to reporters and all interested parties; ease of reporting; and sustained leadership support are important in determining the quality of reports and the success of incident reporting systems. The following section describes the steps that need to be taken to implement a confidential reporting system and some of the pitfalls that can occur.

### A3.4 Legal aspects of confidential systems

The rationale for any reporting system is that a valid feedback on the local and organisational factors promoting errors and incidents is far more important than assigning blame to individuals. To this end, it is essential to protect reporters and their colleagues as far as practicable and legally acceptable from disciplinary actions taken on the basis of their reports. But there have to be limits applied to this indemnity. Some examples of where the line can be drawn are to be found in: “Waiver of Disciplinary Action issued in relation to NASA’s Aviation Safety Reporting System” (see FAA Advisory Circular AC No. 00-46D Aviation Safety Reporting Program); FAA 14 CFR part 193 – Protection of Voluntarily Submitted Information.

One way of ensuring the confidentiality protection and fulfilling the EUROCONTROL Confidentiality and Publication Policy is to be found in SRC WP.9.4 “Safety Data Flow” Progress report submitted by SDF-TF. The experience gained in the last three years showed that the EUROCONTROL Confidentiality and Publication Policy is functioning and States have started to gain trust in SRU/SRC. This has to be kept in mind and the reporting chains should not be jeopardised and compromised by deviation from the mentioned policy.

# Appendix B. Constraints to a Just Reporting Culture

It is neither an obvious nor an easy task to persuade people to file reports on aviation safety occurrences, especially when it may entail divulging their own errors. The three main constraints are: (i) personal reasons; (ii) trust and (iii) motivation.

**i) Personal**: Human reaction to making mistakes does not usually lead to frank confessions. There might be a natural desire to forget that the occurrence ever happened and the extra work required to report is not usually desirable.

**ii) Trust**: People may not completely trust the system to keep their details confidential, or they may be worried that they could get themselves or their colleagues into trouble. They may also fear reprisals depending on the legal environment

**iii) Motivation**: Potential reporters cannot always see the added value of making reports, especially if they are skeptical about the likelihood of management acting upon the information; no incentives provided to voluntarily report in a timely manner and promptly correct their own mistakes.

These three constraints can be further expanded in the following sections below. Information in Sections B1 through B5 is from the GAIN paper, "GAIN: Using Information Proactively to Improve Aviation Safety."

### *B1. Legal Environment*

The legislative environment for accident and incident reporting is partly shaped by the higher-level political and social concerns. The legal position of incident reporting systems is complicated by differences between different national systems. Incident reporting systems must define their position with respect to the surrounding legislation and regulatory environment. For example, there are differences in reporting practices in European air traffic control. Some service providers are compelled to report all incidents to the national police force or to state prosecutors who will launch an investigation if they believe that an offense has been committed. This could lead pilots and controllers to significantly downgrade the severity of the incidents that they report in such potentially punitive environments.

### *B2. Company or Regulatory Sanctions*

There is also concern that the information will lead to enforcement proceedings by government regulatory authorities for violations of aviation safety laws and regulations. The threat of regulatory sanctions tends to deter a reporter from submitting complete and factual safety information that may be used against them by regulatory authorities. First, potential information providers may be concerned that company management and/or regulatory authorities might use the information for punitive or enforcement purposes. Thus, a mechanic[1] might be reluctant to report about a confusing maintenance manual that led to an improper installation, fearing that management or the government might disagree about the maintenance manual being confusing, and then punish the mechanic.

[1] The example is from airborne environment but it may well be the case for ATC community

Such punishment causes two problems: First, the confusing maintenance manual will still be in use in the system, potentially confusing other mechanics. Second, and far worse, is that such punishment, in effect, "shoots the messenger." By shooting a messenger, management or the government *effectively guarantees that they will never again hear from any other messengers*. This, in turn, guarantees that those problems in the "unreported occurrences" part of the pyramid will remain unreported – until, of course, they cause an accident or incident, whereupon the testimony at the accident hearing, once again, will be that, "We all knew about that problem."

One aviation regulator, the UK CAA, announced some years ago, that absent egregious behaviour, *e.g.*, intentional or criminal wrongdoing, they would not shoot the messenger, and encouraged their airlines and other aviation industry employers to take the same approach. That is a major reason why the UK has some of the world's leading aviation safety information sharing programs, both government and private. The type of facilitating environment created by the UK is essential for the development of effective aviation safety information collection and sharing programs. Similarly, British Airways gave assurances that they would also not "shoot the messenger" in order to get information from pilots, mechanics, and others for BASIS. Many other airlines around the world are concluding that they must do the same in order to obtain information they need to be proactive about safety.

Significant progress has also been made on this issue in the U.S. In October 2001, the FAA promulgated a regulation, modeled on the UK example, to the effect that information collected by airlines in FAA-approved flight data recorder information programs (commonly known as Flight Operations Quality Assurance (FOQA[2]) programs will not be used against the airlines or their pilots for enforcement purposes, FAA 14 CFR part 13.401, Flight Operational Quality Assurance Program: Prohibition against use of data for enforcement purposes.

### *B3. Criminal Proceedings*

Concern that the information will be used to pursue criminal fines and/or incarceration. The threat of criminal proceedings tends to deter a reporter from submitting safety information that may be used against them.

A major obstacle to the collection and sharing of aviation safety information in some countries is the concern about criminal prosecution for regulatory infractions. Very few countries prohibit criminal prosecutions for aviation safety regulatory infractions. "Criminalisation" of accidents has not yet become a major problem in the U.S., but the trend from some recent accidents suggests the need for the aviation community to pay close attention and be ready to respond.

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[2] FOQA programs complement Aviation Safety Action Programs (ASAP), announced in January 2001 by the US President, in which airlines collect reports from pilots, mechanics, dispatchers, and others about potential safety concerns.

### *B4. Civil Litigation*

Concern that the information will increase exposure to monetary liability in civil accident litigation. The threat of civil litigation tends to deter a reporter from submitting safety information that may be discoverable in litigation and possibly used against them in civil action.

One of the most significant problems in the U.S. is the concern that collected information may be used against the source in civil accident litigation. Significantly, the thinking on this issue has changed dramatically in recent years because the potential benefits of proactive information programs are increasing more rapidly than the risks of such programs. Until very recently, the concern was that collecting information could cause greater exposure to liability. The success stories from the first airlines to collect and use information, however, have caused an evolution toward a concern that *not* collecting information could result in increased exposure.

This evolution has occurred despite the risk that the confidentiality of information collection programs does not necessarily prevent discovery of the information in accident litigation. Two cases in the U.S. have addressed the confidentiality question in the context of aviation accidents, and they reached opposite results. In one case, the judge recognised that the confidential information program would be undermined if the litigating parties were given access to the otherwise confidential information. Thus, he decided, preliminarily, that it was more important for the airline to have a confidential information program than it was for the litigating parties to have access to it (this refers to the air crash near Cali, Colombia). In the other case, the judge reached the opposite result and allowed the litigating parties access to the information (this refers to the air crash at Charlotte).

As this issue will be decided in future cases, in aviation and other contexts, hopefully the courts will favour exempting such programs from the usual -- and normally desirable -- broad scope of litigation discovery. However, present case law is inconsistent, and future case law may not adequately protect the confidentiality of such programs. Thus, given the possibility of discovery in accident litigation, aviation community members will have to include, in their decision whether to establish proactive information programs, a weighing of potential program benefits against the risks of litigation discovery.

### *B5. Public Disclosure*

Concern that the information will be disclosed to the public, in the media or otherwise, and used unfairly, e.g., out of context, to the disadvantage of the provider of the information. Another problem in some countries is public access, including media access, to information that is held by government agencies. This problem does not affect the ability of the aviation community to create GAIN-type programs, but it could affect the extent to which government agencies in some countries will be granted access to any information from GAIN. Thus, in 1996 the FAA obtained legislation, Public. Law. 104-264, 49 U.S.C Section 40123, which requires it to protect voluntarily provided aviation safety information from public disclosure. This will not deprive the public of any information to which it would otherwise have access, because the agency would not

otherwise receive the information; but on the other hand, there is a significant public benefit for the FAA to have the information because the FAA can use it to help prevent accidents and incidents.

### *B6. Definitions of incidents and accidents*

As we have seen above, companies and their employees have a role to play in filtering accidents and incidents according to what they define as severe enough to report. Some organisations use incident data as an opportunity to learn by discovering their precursors and acknowledging that under slightly different circumstances, the event could have resulted in an accident. Definitions of incidents that foster learning should be open, unambiguous and sufficiently broad to allow reporters to decide whether or not to include the information. Even though reporters may not benefit directly from reporting an incident, it allows information about unknown potential hazards to be collected. Van der Schaaf (1991) argues that it is not good practice to use the same data to learn from and to police and hence incidents without injury may be a more suitable form of safety data to learn from than incidents resulting in injury which are mandatory to report and may result in litigation. An organisation's interpretation of incidents can influence its choice of information gathering methods, which in turn affects the quantity and contents of information (Tamuz, 1994).

### *B7. Types of incidents*

Clarke (1998) found that train drivers' propensity to under-report incidents depended on the type of incident, for example passing a signal at danger (SPD) was most likely to be reported. Furthermore, high levels of reporting were indicative of the priority attached to the type of incident by the organisation. She also found that train drivers reported incidents that posed an immediate hazard but showed less intention to report incidents due to trespassing (even though 41% of train accidents in the UK in 1994/95 were due to vandalism). One reason given for this under-reporting was that they did not want to get someone else into trouble. Train drivers' perceptions of management's negative attitudes to incident reporting were found to reduce drivers' confidence in management, their confidence in the reporting system and produced a reluctance to report even some serious incidents.

### *B8. Design of reporting form*

The design of the accident reporting form is another key factor in determining the percentage of accidents that will be recorded (Wright & Barnard, 1975). If it is too time consuming or difficult to complete, the process may not even begin, or the form might not be filled in completely or accurately (Pimble & O'Toole, 1982; Lawson, 1991). In two studies (Lucas, 1991; Pimble & O'Toole, 1982), the content of reporting forms was found to emphasise the consequences rather than the causes of accidents, hence complete and accurate data were not collected. Pimble and O'Toole (1982) additionally found that insufficient time is allowed for the completion of reports and hence insufficient care is taken to ensure that coding is accurate. The responsibility for accident investigation often rests with the supervisor, who is not always given the skills to do the job properly. In the past, investigators were not familiar with human factors terminology, did not know the difference between immediate and root causes and did not know how to investigate the

underlying factors, therefore immediate causes became the main culprit (Stanton, 1990). Within a UK construction firm, Pimble and O'Toole (1982) found that no standard form was in place, instead the company designed their own one or adapted existing ones. Furthermore, there is often no consensus of the purpose and direction of the form (Stanton, 1990). The ideal situation would be that the same report form is used throughout industry, which would be supplemented with a single classification system (Pimble & O'Toole, 1982).

### *B9. Financial and disciplinary disincentives*

In the offshore oil industry, financial incentives have been provided to employees for having no Lost Time Incidents, with the intention of motivating the workforce to work more safely. However, financial incentives are more of an incentive to conceal accidents and incidents to avoid losing financial bonuses and to keep the accident statistics to a minimum. In a qualitative study of two UK offshore oil installations in the North Sea in 1990, Collinson (1999) described the reasons for the under-reporting of accidents in which 85 workers were interviewed regarding their opinions of safety on their installation. Although this paper was only recently published, the data are from more than 10 years ago, and safety has improved significantly in the UK offshore oil industry since then. Moreover this is a purely qualitative study, in which the examples are anecdotal and in some cases only a very small number of personnel held these opinions. Despite this, however, the study does highlight examples of sub-standard reporting procedures which existed in the UK offshore oil industry 10 years ago and which may still be present today.

Collinson (1999) stated that employees who reported incidents were sometimes indirectly disciplined by being “retrained” or by acquiring a blemished record, thereby encouraging the concealment of self-incriminating information. In addition, he found that contract workers were more likely to conceal accidents, because they perceived that being involved in an accident might influence their job security due to being employed on short-term contracts. In the study, contractors who were involved in an accident were sometimes put on light duties, rather than being sent back onshore, in order that their company did not punish them or lose out financially. In addition, collective incentive schemes that were tied to safety pay were found to encourage accident concealment and reinforce the blame culture. Management monitored performance with production targets, appraisal systems, performance-related pay, league tables, customer feedback and outsourcing. These examples of accident concealment indicate that a belief in the blame culture had a greater impact on their behaviour than the safety culture espoused by management.

### *B10. Workplace retribution*

Other constraints to reporting include: reluctance to implicate self or colleague if subsequent investigations might threaten one’s well being; justified fear of retribution from colleagues / employers (person in authority); disloyalty to colleagues (if they focus on colleagues rather than against management).

### *B11. Minimising incident statistics*

Under-reporting by organisiations can occur because they are responsible for collecting the incident data as well as responsible for reducing incident frequencies over time. In addition, it is often companies with higher reported rates of incidents that are the focus of regulatory investigation. Collinson (1999) also reported that offshore employees were encouraged not to report all incidents, so that company records were kept to a minimum. Many of the safety officers confirmed that they had been pressured into downgrading the classification of incidents, such as recording Lost Time Incidents as Restricted Workday Cases. The reason given by the safety officers for downgrading the classification of some accidents was because it meant they were asked fewer questions by onshore management. The onshore safety department was also seen as willing to downgrade classifications, as they were more concerned with achieving British safety awards than ensuring safe work practices. In summary, Collinson (1999) argues that by generating a defensive counter culture of accident and incident concealment, performance assessment was at odds with the safety culture and that under-reporting was more likely when employees fear retribution or victimization.

### *B12. Sub-cultures: attitudes to incident reporting*

Different departments or work teams within an organisation may be associated with distinct subcultures and different safety climates, that can influence reporting rates (Fleming *et al*, 1998; Mearns *et al*, 1998). In particular, work environments in which accident reporting is discouraged often involve "macho" role models, for example in the construction industry (Leather, 1988); offshore oil industry (Flin & Slaven, 1996; Mearns *et al*, 1997) and the aviation industry (O'Leary, 1995).

### *B13. Individuals' attitudes to incident reporting*

Researchers have found some links between incident reporting and individual differences. For example, personality in the cockpit was found to influence pilots' propensity to report incidents, where those who scored highly on self reliance scales tended to have higher levels of guilt, as they took responsibility for mishaps whether or not they were under their control, which may lessen their likelihood of reporting (O'Leary, 1995). Trommelen (1991, cited by Clarke, 1998) postulated that workers' propensity to report accidents reflects workers' theories of accident causation and prevention to a greater extent than it does the actual frequency of incidents. Statements such as 'accidents cannot be prevented' (personal scepticism) 'accident won't happen to me' (personal immunity) and incidents are just 'part of the job' are labeled as 'unconstructive beliefs' by Cox and Cox (1991).

In a questionnaire study of UK train drivers, Clarke (1998) found that very few drivers reported other drivers' rule breaking behaviours (3%), where a third of drivers felt that rule breaking by another driver was not worth reporting. She also found that train drivers were less likely to report incidents if they considered managers would not be concerned with such reports. High levels of non-reporting were most evident when workers felt that incidents were just 'part of the day's work' (i.e. 'fatalistic attitude') and that 'nothing would get done' (i.e. perceptions or beliefs that management is not committed to safety). These findings indicate that incidents are not reported because they are accepted as the

norm, which was further reinforced when drivers perceived that reporting an incident would not result in any action being taken, indicating a lack of commitment by management. However, the results also indicate that drivers would be more likely to report an incident if they thought something would be done to remedy the situation.

# Appendix C. Different Perspectives

### *C1. ICAO perspective*

The ICAO position is stated very clear in Annex 13 Section Non-disclosure of records – para. 5.12: *"5.12 The State conducting the investigation of an accident or incident, shall not make the following records available for purposes other than accident or incident investigation, unless the appropriate authority for the administration of justice in that State determines that their disclosure outweighs the adverse domestic and international impact such action may have on that or any future investigations:*

*a) all statements taken from persons by the investigation authorities in the course of their investigation;*
*b) all communications between persons having been involved in the operation of the aircraft;*
*c) medical or private information regarding persons involved in the accident or incident;*
*d) cockpit voice recordings and transcripts from such recordings; and*
*e) opinions expressed in the analysis of information, including flight recorder information.*

*5.12.1. These records shall be included in the final report or its appendices only when pertinent to the analysis of the accident or incident. Parts of the records not relevant to the analysis shall not be disclosed.*

*NOTE: Information contained in the records listed above, which includes information given voluntarily by persons interviewed during the investigation of an accident or incident, could be utilised inappropriately for subsequent disciplinary, civil, administrative and criminal proceedings. If such information is distributed, it may, in the future, no longer be openly disclosed to investigators. Lack of access to such information would impede the investigative process and seriously affect flight safety."*

Related to the subject of non-disclosure of certain accident and incident records, ICAO has issued a State Letter (dated 31st of January 2002) enclosing the Assembly Resolution A33-17 (Ref.: AN 6/1-02/14). A copy of the letter and enclosure has been circulated for information and reference at SRC13 in February 2002. The letter basically introduces the Resolution A33-17, whereas the ICAO Assembly "*urges Contracting States to examine and if necessary to adjust their laws, regulations and policies to protect certain accident and incident records in compliance with paragraph 5.12. of Annex 13, in order to mitigate impediments to accident and incident investigations*".

### *C2. Regulatory perspective*

The UK CAA (1993) requires that human error events be reported to the Authority for safety analysis: "*where a reported occurrence indicated an unpremeditated or inadvertent lapse by an employee, the Authority would expect the employer to act responsibly and to share its view that free and full reporting is the primary aim, and that*

*every effort should be made to avoid action that may inhibit reporting. The Authority will accordingly make it known to employers that, except to the extent that action is needed in order to ensure, and except in such flagrant circumstances as described, it expects them to refrain from disciplinary or punitive action which might inhibit their staff from duly reporting incidents of which they may have knowledge*."

### *C3. An airline perspective*

ABC Airlines (Disciplinary policy used by an international air carrier). ABC Airlines understands that it needs a safe and security culture that embraces highest corporate and industry standards. To do this, ABC Airlines require a willingness to address and remedy all operational shortcomings as soon as possible. This relies on having a comprehensive reporting of all incidents that pose hazards to the customers, staff or operations. All safety issues must be reported without exception. The company is committed to the greatest possible openness in reporting.

*"No blame will be apportioned to individuals following their reporting of mishaps, operational incidents or other risk exposures, including those where they themselves may have committed breaches of standard operating procedures. The only exceptions to this general policy of no blame apportionment relate to the following serious failures of staff members to act responsibly, thereby creating or worsening risk exposures.*

- *Premeditated or international acts of violence against people or damage to equipment/property*
- *Actions or decisions involving a reckless disregard toward the safety of our customers, our fellow employees or significant economic harm to the company or*
- *Failure to report safety incidents or risk exposures as required by standard operating procedures and / or this policy*

*Staff who act irresponsibly in one of these ways remain exposed to disciplinary action. A staff member's compliance with reporting requirements will be a factor to be weighed in the company's decision-making in such circumstances. Outside these specific and rarely invoked exceptions, staff members who make honest mistakes or misjudgements will not incur blame – provided that they report such incidents in a proper fashion."*

This disciplinary policy reasonably balances the benefits of a learning culture with the need to retain personal accountability and discipline.

### *C4. Air Navigation Service Providers*

The EUROCONTROL Performance Review Unit (on behalf of the Performance Review Commission) conducted a survey of the legal constraints, as well as the potential shortfalls in the national safety regulations that would not support "non-punitive" reporting in ATM. The report found that the main legal issues of safety reporting are about personal data protection and the use of safety data, in particular that arising from the investigation. The respondents thought that it is important that the reporting system is trusted by all interested parties and that reporters need to feel that they will not be penalized through public exposure within or outside their organization for reporting routine, unintentional (honest) mistakes (see 2.1.3). The particularly with regard to the

potential use of the information in court. Some states have addressed this conflict by offering protection to parties reporting honest mistakes.

The majority of respondents considered that their States national safety regulations did not explicitly mandate the implementation of a non-punitive environment.

Two of the key messages that emerged from the survey were that in many States there are significant legal constraints to non-punitive reporting in ATM. As a result many staff feel inhibited to report. This is particularly the case where States have “Freedom of Information” legislation in place and where they have not taken steps to protect safety reports from the application of such legislation. 2) The overwhelming majority of respondents (including non-European Union States), saw EU legislative proposals as a major enabler to implement non-punitive reporting.

### *C5. IFATCA*

From the 43rd Annual IFATCA (International Federation of Air Traffic Controllers’ Association) Conference in Hong Kong in March, 2004, the following comments were discussed regarding the implementation of a Just Culture. The 2.1.1. IFATCA policy on page 4 4 2 3 paragraph 2.2 Air safety reporting systems is that:

"*Whereas IFATCA thinks a Voluntary Reporting System is essential, MA's should promote the creation of Air Safety reporting systems and Confidential Reporting Systems among their members" Additionally, "IFATCA shall not encourage MA's to join Voluntary Incident Reporting System unless there is a guaranteed immunity for the controller who is reporting. Any voluntary incident reporting system shall be based on the following principles:*
*a) In accordance and in co-operation with the pilots, air traffic controllers and ATC authorities;*
*b) The whole procedure shall be confidential, which shall be guaranteed by law;*
*c) Guaranteed immunity for those involved, executed by an independent body*."

See also the section on “Collective Aviation Opinion” from the 43rd Annual IFATCA conference which briefly describes the view points of aviation organisations on prosecution of employees and the resultant effect on safety.

### *C6. IFALPA*

In a recent statement to the World's media, the IFALPA President strongly denounced the growing trend of apportioning blame following aviation accidents. This threat of civil or criminal proceedings for violations of aviation safety laws and regulations is having a profound and damaging effect on the flow of precious aviation safety information which is essential if lessons are to be learned from accident investigations. IFALPA is supported by many prominent international organizations in its concern.

## Appendix D. Glossary of Acronyms

| | |
|---|---|
| AAIB | Air Accidents Investigation Branch (UK CAA) |
| ANSP | Air Navigation Service Provider |
| ARS | Mandatory Aviation Reporting System (British Airways) |
| ASAP | Aviation Safety Action Program |
| ASRS | Aviation Safety Reporting System |
| ATC | Air Traffic Control |
| ATCO | Air Traffic Control Operator |
| ATM | Air Traffic Management |
| BASIS | British Airways Safety Information System |
| CAA | Civil Aviation Authority |
| CHIRP | Confidential Human Factors Incident Reporting Programme |
| CIRAS | Confidential Incident Reporting (UK Railway Industry) |
| ERS | Error Reporting System (UK CAA) |
| ESAAR | EUROCONTROL Safety Regulatory Requirements |
| EU | European Union |
| EUROCONTROL | European Organisation for the Safety of Air Navigation |
| FAA | Federal Aviation Administration |
| FOQA | Flight Operational Quality Assurance |
| GA | General Aviation |
| GAIN | Global Aviation Information Network |
| HFACS | Human Factors and Analysis Classification System |
| HFRP | Human Factors Reporting Programme (British Airways) |
| HR | Human Resources |
| IEP | Internal Evaluation Program |
| IATA | International Air Transport Association |
| IAEA | International Atomic Energy Agency |
| ICAO | International Civil Aviation Organization |
| IFALPA | International Federation of Air Line Pilots' Associations |
| IFATCA | International Federation of Air Traffic Controllers' Associations |
| MAs | Member Associations |
| MERP | Maintenance Error Reduction Policy |
| MOR | Mandatory Occurrence Reporting |
| NASA | National Aeronautics and Space Administration |
| NZ | New Zealand |
| OPS | Operations |

## Glossary of Acronyms (cont.)

| | |
|---|---|
| SAASCo | South African Confidential Reporting System |
| SIDD | Safety Investigation and Data Department (UK CAA) |
| SOP | Standard Operating Procedure |
| SPD | Signal Passed at Danger (Railway Industry) |
| SRC | EUROCONTROL Safety Regulation Commission |
| SRU | EUROCONTROL Safety Regulation Unit |
| UK | United Kingdom |
| WG | Working Group |

# Appendix E. Report Feedback Form

**Please submit this form to:**
GAIN Working Group E
c/o RS Information Systems, Inc.
1651 Old Meadow Road
McLean, Virginia 22102 USA
Fax: +1 (202) 267-5234; Email: WGE@gainweb.org

Name: _____

Title/Position: _____

Organization:_____

Mailing Address:_____

Phone:_____Fax:_____E-Mail:: _____

1. How useful is this report to your organization? *(Please circle one)*

   not useful - 1 2 3 4 5 - very useful

2. Do you plan to use this report to help implement a "Just Culture" in your organization? If so, what information will be most helpful to you?

3. What information would you like to see added to this report?

4. What activities should WG E undertake that would be most useful to your organization?

5. Would you or someone in your organization be interested in participating in WG E?
   YES / NO

6. Would you like to be added to our mailing list?
   YES / NO

7. Other Comments/Suggestions

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