Perception Gaps in the Execution of Safety Management System – A Case Study of the Airline Industry

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Abstract: As improving air safety has always been the ultimate goal for the airline industry, Safety Management System (SMS) gains enormous attention for its systematic concepts and implementation. This qualitative paper reveals the perception gaps in the SMS execution between frontline employees and their immediate supervisors in the airline industry. The most representative crews in the airline industry including cockpit crew, cabin crew and maintenance crew are interviewed. The results advise airlines of the necessity to further redeem the policies, procedures and audit action of the SMS execution based upon the authentic feedback from the frontline employees.

Key Words: Safety Management System, perception gap, airline industry

1. INTRODUCTION

Improving air safety has always been the ultimate goal for the airline industry. To an airline’s success, it is important to pursue a more than acceptable air safety record. While assessing the consequences of the various safety related issues in civil aviation, traditionally accident rates are taken as the main safety indicators. However, this could lead to an inaccurate picture of the safety level. In fact, aviation safety is affected by all major stakeholders, including operators (e.g., airlines), regulators and investigation organizations (e.g., the Civil Aeronautics Administration and the Aviation Safety Council), service providers (e.g., airports and Air Traffic Control), and hardware and software manufacturers and suppliers. The approach for understanding and managing safety on an organizational level to identify hazards and manage risks is compulsory to meet safety requirement. The development of the Safety Management System (SMS) has thus been emphasized within the airline industry (Liou, et al., 2008).

As demanded by the International Civil Aviation Organization (ICAO), which set SMS as a regulatory standard for international airports in 2005, airlines worldwide must implement SMS as a mandatory policy since 1 January 2009 (Maurino, 2007). As part of the official
announcement of the Safety Management System for airlines, the Civil Aeronautics Administration (CAA) in Taiwan published the Advisory Circular entitled “SMS Safety Management System” (AC-120-32A) in 2006, describing similar measures to those proposed by the FAA (FAA, 2006). To continuously improve the air safety record, Taiwanese airlines have invested considerable time and effort to implement SMS, as it is a comprehensive tool combining sufficient safety related concepts and strategies. However, like other safety related models which are rooted in Western culture, the implement of SMS in Taiwanese airlines may meet a number of challenges. For example, cultural issues have attracted attention when the concepts of Crew Resource Management (CRM) and Maintenance Resource Management (MRM) were introduced to in Taiwan (Jing, 2009; Wang and Tseng, 2006; Engle, 2000). In line with the growing trend of air transport demand, it is inevitable to see that increasing pressure will be placed on airline safety programs (Liou, et al., 2007). Identifying the potential obstructions and acquiring authentic feedback from front line employees at the initial stage of implementing SMS should thus be valuable to achieving greater safety in the airline industry.

This exploratory qualitative study thus targets the issue of SMS implementations in Taiwanese airline industry. Although the accident rate is continuously falling in Taiwan, air carriers should continuously consider a variation of the iceberg model of threats to air safety. There are three major objectives with this study. The first one is to collect the empirical data to identify the current situation of SMS applications in Taiwan. The second is to understand the SMS execution by their organizations perceived by the most representative airlines employees, including pilots, cabin attendants and line maintenance personnel. Finally, perception gaps in SMS execution between the managers and front-line operators are investigated. The results reveal that the SMS related messages and information are accessible to pilots, cabin attendants and maintenance crew. A great majority of the respondents recognize the importance of SMS. However, their perceptions of their roles and responsibilities in company’s SMS as well as their evaluations on company’s SMS execution significantly vary. Moreover, perception gaps between managers and front-line operators do exist, of which the gap situation is found most seriously inside Cabin Service Department.

2. LITERATURE REVIEW

2.1 The definition of Safety Management System

In 2002, the United Kingdom Civil Aviation Authority (UKCAA) published a guidebook (Civil Aviation Publication, CAP 712) titled “Safety Management Systems for Commercial Air Transport Operations”, defining SMS as a methodology by which a company manages safety throughout its organization, utilizing a systematic approach to ensure that all parts of business are addressed, and that all risks are identified and subsequently managed (UKCAA, 2002). To buttress traditional reactive strategies for avoiding accidents, most civil aviation authorities promote SMS for its proactive systems approach (FSF, 2005). The Safety Management System is also recognized as a systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures (ICAO, 2006). FAA describes SMS as a term indicating that safety efforts are most effective when made part of business and government management of operations and oversight. Essentially, it is a quality management approach to controlling risk, also providing the organizational framework to support safety culture (FAA, 2006).
Based on leadership and accountability, SMS is a coordinated, comprehensive set of processes designed to direct all accessible resources to manage safety with the optimal utilization. It requires proactive data collection, information analysis, hazard identification, risk management, auditing and training, also including reactive incident and accident investigation and analysis. The essence of SMS is to take seemingly unrelated processes and build them into one coherent structure to achieve a higher level of safety performance, making safety management an integral part of overall risk management (IHST, 2007). As indicated by Civil Aviation, Transport Canada (2008), SMS is a business-like approach to safety and in keeping with all management systems, it provides for goal setting, planning, and measuring performance. An organization’s SMS defines how it intends the management of air safety to be conducted as an integral part of the business management activities, becoming part of the culture and the way people do their jobs.

The main objective of an SMS program for the airline industry is to establish an effective aviation safety culture which can detect and correct safety related problems before an accident occurred (Lewis, 2008). To sum up, SMS integrates the previously developed safety related concepts into a proactive model, which presents a framework of a dynamic Risk Management System based on Total Quality Management (TQM) principles. The structure of SMS should be appropriate to the operational risks and proceed in a safety culture environment.

2.2 The components of SMS

Transport Canada published Guidance on Safety Management Systems Development (AC 107-001) in 2008 to replace the guidance material Safety Management Systems for flight operations and aircraft maintenance organizations (Transport Canada, 2002), providing instructions on some of the ways SMS can be implemented in large, complex organizations (Transport Canada, 2008). The Advisory Circular indicates six components of an integrated SMS, including: Safety Management Plan (Safety Policy, Non-Punitive Safety Reporting Policy, etc.), Documentation (Identification and Maintenance of Applicable Regulations, SMS Documentation, etc.), Safety Oversight (Reactive Process - Reporting, Proactive Process - Hazard Identification, etc.), Training (Awareness and Competence), Quality Assurance Program (Inspection and testing methods, Internal and external audits, etc.) and Emergency Response Plan (Appropriate Emergency Preparedness Procedure, Periodically Reviewed, etc.).

The three core features of SMS are that it is as followings: (1) Systematic: safety management activities are in accordance with a pre-determined plan, and applied in a consistent manner throughout the organization. (2) Pro-active: it is an approach that emphasizes hazard identification and risk control and mitigation, before events that affect safety occur. (3) Explicit: all safety management activities are documented and visible and performed independently from other management activities (ICAO, 2006; Kohli, 2007; Hsu, 2008).

To define the requirements for the Safety Management System in Aviation Safety (AVS), the Federal Aviation Administration (FAA) issued the Order VS 8000.367 (FAA, 2008). The four main components of the AVS SMS are as follows: (1) Safety Policy: which includes the statement of goals and objectives for AVS to fulfill, as well as staffing and planning. (2) Safety Risk Management: which includes the forward looking identification of hazards in the air transportation system, analyzing and assessing their risk, and controlling them (as required). (3) Safety Assurance: which gathers data on the air transportation system, analyzes and assesses it to determine if the safety risk controls generated in Safety Risk Management
are effective, and if not, makes decisions regarding what appropriate corrective actions should be taken. (4) Safety promotion: which includes communication, training, and the development of a positive safety culture.

The Australian Civil Aviation Safety Authority (CASA) has also continuously increased the guidance to promote SMS. Eight elements of SMS, including Safety policy and objectives, organizational and staff responsibilities, Establishment and monitoring of levels of safety, Internal safety reviews, Internal reporting and management of safety concerns and incidents, Hazard identification/assessment/control and mitigation, Interfaces, and Change management, were illustrated in AC 172-01(0) (CASA, 2005). To comply with the requirement of SMS implementation by ICAO, CASA published the Notice of Final Rule Making (NFRM) 0803OS (CASA, 2009) to provide the final regulations and associated advisory materials.

Safety may be defined as a state in which risk is reduced to and maintained at an acceptable level through a continuing process of hazard identification and risk management. As an integrated system to achieve this goal, an effective SMS should contain the completed processes for planning and measuring safety performance, ensuring all personnel are well-trained and competent, identifying safety hazards, evaluating and managing risks. Furthermore, on a periodic basis, the system must proactively undertake the internal reporting and analysis of safety hazards, incidents and accidents, and also take corrective measures to prevent their recurrence. For safety awareness and communication, it is important to ensure that all personnel are aware of their roles and responsibilities within the system. To control the total quality, a documentation of all SMS processes and a process for conducting reviews or audits of the SMS are indispensable.

2.3 The Application of SMS in Taiwan

Referring to AC120-92 (FAA, 2006), the Civil Aeronautics Administration (CAA) of Taiwan published AC120-32B to replace AC120-32A in 2007. The contents illustrate the principles and functions of SMS and the relationship between protection and production. Based on theses measures, all airlines in Taiwan needed to implement SMS before January 01, 2009 (CAA, 2007).

The continuous improvement of the air safety record demonstrates the determination of air transport operators in Taiwan to take the issue of safety seriously. Taking Airline A as an example, it has been awarded the coveted Gold Wing by Taiwan's CAA and is ranked as one of the world’s top-10 safest carriers by Aero International Magazine in Germany. The principles of SMS which all employees have to keep in mind are summarized as follows: “Based on morals, we shall develop the spirit of teamwork in a precise, diligent, solid and creative manner. To secure the safety of personnel and aircraft, we have to do the things right at the first time and strive for the largest safety margin.” As well as using technologically advanced flight analysis equipment (such as Aircraft Condition Monitoring Systems (ACMS) and Aircraft Communications Addressing & Reporting Systems(ACARS)) to track aircraft operations, engine conditions and flight performance, the airline also continuously upgrades the levels of employees’ professional knowledge and skills by designing and offering courses for on-the-job training. The three targets of SMS with flight operations are zero serious incidents, minimizing errors and zero violations. To achieve these goals, Airline A clearly follows four strategies: (1) collect and examine good quality data from events, training, checks, Line Observation Program (LOP), Flight Data Information System (FDIS), Flight
Operation Safety Performance Indicator (FOSPI) and investigations; (2) apply corrective action rather than punitive measures except for willful violations; (3) share relevant data with all staff to ensure they know which areas need extra attention; and (4) require that all staff adopt best practices to ensure quality in Flight Operations. To build an integrated and adaptable SMS, a high-quality organizational culture with professionalism is a prerequisite. Airline A thus proposes that the ideal organizational culture should be knowledgeable, impartial, adaptable and learning. As such routine activities to enhance the execution of SMS, regular training programs are offered on a periodic basis. In addition, the company’s Safety and Security Division will host various competitions during the period of “Safety Week”. It also encourages and rewards all staff to participate in the Safety Voluntary Report System to address any concerns or suggestions regarding aviation operation safety issues (CSCA, 2008).

Airline B, as another example, implements comprehensive SMS to improve to corporate safety. To share the safety information with fellow members and learn from their experiences, it joined the IATA (International Air Transport Association) STEADES (Safety Trend Evaluation, Analysis and Data Exchange System) program in 2005. Applying IOSA (IATA Operations Safety Audit) as the system safety standard, Airline B presented its ambition to achieve an international standard of air safety. From reactive safety investigation to proactive and predictive safety management, Airline B ultimately seeks information from a variety of sources which may reveal potential safety risks. Progress in this area may be reflected by the continuously increasing number of reports filed via company’s E-reporting system, which has been established to collect data at all times, indicating a positive change in the firm’s safety culture (CSCA, 2008).

People inevitably make mistakes, and human factors cause more than half of all aviation accidents. Therefore, safety management is not about achieving absolute safety, but accepting that things will go wrong and controlling risks to an acceptable level, or to a level that is As Low As Reasonably Practical (ALARP). Safety management involves judgment, assessing priorities and making decisions (CASA, 2008). These actions require airlines to build an integrated system to bring all divisions working together toward the safety goals. Combining the concept of Total Quality Management (TQM) with proactive risk management process, SMS offers a completed model which integrates top down with bottom up management strategies for the airline industry to practice. The ultimate goal is to utilize the predictive method to capture system performance as it happens in real-time operations.

Aviation operations are technically complex and the ability of an organization to deliver safe outcomes depends greatly on the skills and behaviors of people at the “front line” (CASA, 2008). Any communication barriers and different perceptions of executable policies between managers and the front line employees will have a negative impact on results. The greater the perception gap between management and front line employees, the more difficult it will be to effect change (Bowon, et al., 1999). Employee reports of accidents, errors, near misses, and other operational problems are valuable to managers in providing information that is unavailable elsewhere giving opportunities to correct unsafe situations and improve work systems (Hogan et al., 2008; Cannon and Edmondson, 2005). The motivation for this study is thus to observe whether such perception gaps exist between managers and front line employees and if they do, to uncover their possible causes.

3. METHODOLOGY
The methodology applied in this research is a qualitative exploratory case study design (Yin, 2004), with the objective of presenting the perceptions of SMS among airlines employees, including managers and the most representative crew, namely, cockpit crew, cabin crew and line maintenance crew. As a qualitative research interview seeks to cover both a factual and a meaning level, it is expected to get the real story behind a participant’s experiences (Kvale, 1996).

3.1 Participants and procedure

The empirical basis for the paper is data collected through reviewing airline training materials and the materials obtained on official websites, site visits, and interviews with the focal groups of employees. The results depend significantly on the interpretation of the transcribed records obtained from conducting semi-structured interviews, carried out from May to August in 2010. The target interviewees are sorted into four categories: managers (the immediate supervisors), cockpit crew, cabin crew and maintenance crew. To discover the objective reality, the candidate interviewees were randomly selected from the airlines employees. The aims of the study and the outlines of the interview questions were sent to the candidate interviewees first via emails (a total of 48 candidate interviewees were reached at the original stage), and their approval was sought before conducting the interviews. A total of 37 interviewees consented to participate, including six managers, six cockpit crew members, 13 cabin crew members and 12 line maintenance personnel (Table 1). They were assured that their personal information would remain confidential and their responds to the interview questions would be anonymous in this paper. After receiving the responses from interviewees to obtain the primary data, the individual interviews were then undertaken. The data recording, processing and analysis were then performed with details of each of these steps given below.

Table 1 Details of the interviewees (N=37)

<table>
<thead>
<tr>
<th>Category</th>
<th>Position</th>
<th>Tenure</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manager</td>
<td>Chief Pilot</td>
<td>over 20 years</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Cabin Attendant Instructor</td>
<td>over 15 years</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Maintenance Section Manager</td>
<td>over 20 years</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Maintenance Deputy Section Manager</td>
<td>over 15 years</td>
<td>1</td>
</tr>
<tr>
<td>Cockpit crew</td>
<td>Captain</td>
<td>over 15 years</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>First Officer</td>
<td>5 ~ 10 years</td>
<td>4</td>
</tr>
<tr>
<td>Cabin crew</td>
<td>Chief Purser</td>
<td>over 15 years</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Deputy Purser</td>
<td>over 10 years</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Cabin Attendant</td>
<td>1 ~ 7 years</td>
<td>9</td>
</tr>
<tr>
<td>Maintenance crew</td>
<td>Line Maintenance</td>
<td>2 ~ 10 years</td>
<td>12</td>
</tr>
</tbody>
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3.2 Semi-structured interview

Semi-structured interview is one of the most frequently used qualitative methods (Barnard et al., 2000). Usually an interview script is used, consisting of a set of questions as a starting point to guide the interaction. However, as the aim is to capture as many of the subject’s viewpoints as possible regarding a selected topic or a practical task, the interviewer is also expected to ask new questions after the first answers are given to help the interviewees deepen the thinking process. Consequently, the end of every interview conducted in one study can be different (Del Barrio, 1999). The major benefits of adopting semi-structured interviews in the current paper include: (1) confirming what is already known and also gaining the opportunity
for the deeper understanding; (2) the information obtained from semi-structured interviews
will usually provide not only answers, but also the reasons for the answers; (3) individuals are
more likely to discuss sensitive issues when mutual trust has been built between the
interviewer and interviewees.

Due to the restrictions imposed by the shift work patterns of the interviewees, the primary
interview questions were designed to best suit the specific context. Instead of asking only
open questions, most of the questions were given with multiple choices answers and the
opportunity to give a free opinion. This helped the researcher obtain a preliminary
understanding regarding the interviewees’ perceptions of SMS and the reasons behind their
answers at the same time. The questions sent to the interviewees via emails were as follows:

- How well do you understand the Safety Management System?
- How well do you understand the SMS operated in your company?
- How do you assess the degree of connection between your work and SMS?
- How do you evaluate the accomplishment of SMS execution in your company?
  If so, how do you evaluate the contents of the course and the learning effects?
- Have you ever proposed any tangible plan via the company’s reporting system?
  If so, how do you evaluate the responses from the company?
- Are you willing to propose safety related plans via the company’s reporting system?
  If not, please briefly explain why?

The one-on-one interviews were then conducted after receiving the responses to the above
questions. In compliance with the interviewees’ preferences and requirements, the personal
in-depth interviews were performed in person, by phone, email or instant messaging system.
The interviews were then transcribed for subsequent analyses and interpretation by the
researcher.

4. RESULTS

Based on the transcripts of the interviews, the perceptions of Managers, Cockpit crew, Cabin
crew and Maintenance crew members are introduced in the following sections.

4.1 Managers’ perceptions of SMS

Six managers from different divisions offered consistent responses to most of the questions.
They all stated that they would not recognize themselves as the experts in SMS, but were
willing to devote their time and efforts to learning, promoting and practicing it. The managers
sensed the absolute correlation between their duties and the company’s SMS operations, and
affirmed the positive effects of it. Two of the managers had submitted the proposals regarding
improving safety operations via the company’s reporting system, and were satisfied with
company’s responses. In addition, they were more than willing to participate in the company’s
SMS programs and offered their experience and thoughts on it. One made the following
statement:

An airline is a very complex system. The success of a Safety Management Systems requires
cross-department coordination. The intra-company’s regular meetings offer great chances for
the brainstorming. It takes time to see the progress. I am confident of the positive effects.

(Manager A)
Regarding the communication channel between managers and front line operators, most of managers were cautiously optimistic. However, Manager B (from the maintenance department) expressed the following concern:

People think differently among each other. This department contains a huge amount of manpower. I know that there must be some different opinions out there and complaints are made everyday. What I can do is to open the door and wait for someone to step in and talk to me.

(Manager B)

To sum up, personnel with management positions well recognize their roles and obligations in their company’s Safety Management System. They perceive the importance and necessity of SMS, and strive to make contributions to it.

**4.2 Cockpit crew’s perceptions of SMS**

Both captains and first officers shared similar perceptions regarding the operation of SMS in the company. They learned the basic knowledge related to SMS and realized its strong correlation with their work. However, they were not sufficiently familiar with the company’s ongoing SMS programs, although five of them had participated in training courses. This is the reason why they assessed the effects of the SMS operations in the company at only the medium level. On the other hand, the learning materials and effects of SMS courses were both evaluated below average. They suggested that the company should design more activities to enhance classroom learning experience rather than using only lecture. None of them have ever tried to propose any suggestions to improve operation safety. Among the interviewees, two frankly claimed that they would not provide any suggestions via company’s reporting system because they sensed that the company cares more about keeping costs down than other things. One first officer described how he viewed SMS:

I don’t think that Safety Management System is anything different from the previous safety concepts or models, like Crew Resource Management. Honestly speaking, to execute SMS and make it an international operation rule is more policy-making agenda than applying it into the realistic operation. The policy makers may focus on how system works. To me, I still pay attention to my flight duty.

(First Office A)

**4.3 Cabin crew’s perceptions of SMS**

The responses from flight attendants were rather worrying. Only the chief purser assessed herself as having sufficient SMS knowledge, yet seven of the 13 interviewees had already taken SMS-related courses. Most of them recognized the correlation between SMS and their work at a medium level, and some even indicated that there was no correlation at all. With the evaluation from five interviewees who had already participated in SMS courses, the outcome of learning effects was also disappointing.

Unlike cockpit crew members, the cabin crew’s interviewees clearly indicated that a “silence strategy” is one that they consistently adopt. Only three of them stated that they may anonymously offer their suggestions for safety enhancement under certain circumstances. Almost half of the interviewees directly stated an indifferent attitude toward the execution of
Proceedings of the Eastern Asia Society for Transportation Studies, Vol.8, 2011

SMS, such as in the following examples:

I am not sure whether company will take my suggestions into serious consideration, as the prior experiences don’t offer any encourage.

(Flight attendant A)

It is difficult to get motivated, even if the company offers some reward. I know that airlines operations require teamwork. We do help each other on board to get the flight as smooth as possible. I don’t know how SMS can make things different. We get on board and serve passengers the same as what we used to do. SMS just sounds like another terminology to me.

(Flight attendant B)

The work overload has made me exhausted. I feel like participating in the training programs is another duty to perform. Maybe it really can lead to outstanding effects, yet my frank thought is that we already do a good job. That’s enough.

(Flight attendant C)

The statements from most of the flight attendant interviewees clearly sent a message to the company that although they may work with an obedient attitude, but the effectiveness of company’s policies are still in doubt. All the respondents recognized the importance of safety, and were aware of their duty for maintaining cabin safety and security. Nevertheless, they tended to step outside the system, feeling that the working procedures and routines have already been formulated, with little chance for them to make a change.

4.4 Maintenance crew’s perceptions of SMS

Most of the line maintenance staff regarded their work as strongly correlating to SMS, while they evaluated themselves as having limited knowledge, as to what SMS is and the specific SMS projects designed by the company. In contrast to the cockpit and cabin crew members, most of the line maintenance staff took the credit for company’s execution of SMS, although they could not provide any physical evidences for such statements. Eight of the 12 interviewees had taken an SMS course, among which only three stated that they experienced any learning effects. Although eight of the participants answered “yes” to the question of “Are you willing to propose safety related plans via company’s reporting system?”, none of them had done so.

The most common responses from line maintenance staff were similar to the following examples: “The SMS is essential to the goal of safety, but it is a complicated system and I still don’t have the whole picture of it”, “I do what is listed on the Job Card. My essential duty is to fix and prevent airplanes from malfunctioning. I don’t know much about other things.” and “I am a trained and experienced hands-on operator. Filling out reports is something bothersome to me.” One line maintenance member made the following statement:

A mechanic is responsible to keep the airplane operating under the requirements of the MEL (Minimum Equipment List). We need support from managers and the company as our duties entail a lot of pressure. If SMS can attract more attention from the company’s policy makers to maintenance department, it will help mechanics to participate in the system.

(Line maintenance A)

Another line maintenance member gave the following statement:
We are hands-on workers. We know how important this job is. Although most of the time I just want to get my work done without delay or being distracted, I will participate in the training programs if it is necessary. What I concern about is how we evaluate the effects of SMS and integrate it with the routine work, and also whether it will increase the workload.

(Line maintenance B)

To make a brief summary regarding the perceptions of the cockpit, cabin and line maintenance crews with regard to the effects of the company’s SMS practices, a general consensus among all such staff was clear. Most of them valued the importance of SMS and recognized the correlation between it and their duties. However, they did not take the initiative in participating in the operation of the system. Some of them further expressed a negative attitude toward the execution of the system, which was against the company’s expectations, and thus a gap of awareness was between managers and front line operators.

5. DISCUSSION AND CONCLUSION

The empirical data collected from the current paper reveals a clear gap between managers and the hands-on operators regarding attitudes and involvement toward the company’s SMS. Under the condition of most interviewees valuing the importance of SMS, the managers sensed an obligation to practice and promote SMS, while the hands-on operators regarded it as a requirement and mostly passively obeyed the rules that the company stipulated. Despite the enormous efforts the company has made, the majority of hands-on operators still doubted the effects of SMS and how company may respond to their proposals. Without custom-made courses designed for different crew members, as well as training classes for all staff, the front line operators’ perceptions of the SMS seem to indicate a disappointing outcome.

Another intriguing phenomenon was observed during the contact with the respondents. Cockpit crew members were more straightforward to express their opinions. They questioned the way of carrying out SMS formal courses, and stated that the lectures were too formal and had limited learning effects. Line maintenance crew members, on the other hand, recognized themselves as the operators only. They passively obeyed company’s policies and seldom questioned them. Although most of the line maintenance members were willing to participate in the SMS programs, they did not actually submit any proposal due to perceptions of their own limited knowledge and authority. Regarding the cabin crew’s responses, they neither frankly expressed their opinions to the company nor recognized the important role they played in the SMS. They seemed to find their own way to adapt to the requirements of the system, while actually holding an indifferent attitude toward the policies.

Distinctive departmental subcultures and professional characteristics apparently play important roles in the differences among individuals. The specific communication style of each group emerged from the interview process. For cabin attendants, obeying the rule of “silence is golden” is the key to survival. Many line maintenances interviewees were found to have too much humility toward their positions and expertise. They often made statements like: “I am not an expert in aviation safety.” or “I only know about the documented duties which I have to execute.” The stereotypical Chinese philosophy, such as possibly being criticized by others based on the saying “empty vessels make the most sound” is expressed thoroughly with the above statements. This demonstrates that cultural issues are particularly noteworthy in this context.
This paper targets cockpit, cabin and maintenance crew members in Taiwanese airlines to collect empirical data through in-depth interviews. The objectives of the study are to recognize the current applications of SMS perceived by the front line operators’ points of view, and also to discover whether any gap in perceptions exists between managers and employees (i.e., the hands-on operators). The results strongly suggest that the airline has to be aware of the clear gaps that exist between the managers and front line staff. It indeed is an arduous challenge to build a working environment where all employees may spontaneously devote their best to the tasks at hand. Bridging the perception gaps between the managers and hands-on operators, regardless of whether they are caused by personal or systematic issues, may be the first step to starting this process.

Until a company is willing to hear the true voices of its employees regarding the strengths and weaknesses of its existing safety program, accidents may never be completely eliminated (Kennedy, 2007). Many industries have thus implemented confidential reporting systems (Short and Toffel 2008; Jones and Tesmer, 1999), and some airlines further offer rewards to encourage employees to submit proposals to enhance safety performance. Nevertheless, such safety programs can not become part of organizational culture and be successful unless employees feel obligated to speak up when problems arise. As well as establishing a well-organized and multi-aspect scheme, airlines should focus more on how to foster the employees’ commitment to participate in the safety programs. As expected, managers have to play the essential role as the liaison between the front line operators and company. It is thus to develop managerial techniques to more effectively deploy the communication channels for front line operators to share the thoughts and offer solutions to the problems they face or uncover. Another critical element is to analyze the subculture in different departments to implement the SMS in a more flexible way.

With the limitations of this study, future researches with a larger number of samples and more diverse methodologies to reconfirm the results are suggested. In addition, more work should be done to provide the quantitative evidence for potential causes of and remedies for the gap in perceptions between managers and front line staff.

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