



*International Civil Aviation Organization*

**SEVENTH MEETING OF THE ASIA PACIFIC REGIONAL AVIATION SAFETY TEAM  
(APRAST/7)**

*(Bangkok, Thailand, 31 August to 4 September 2015)*

---

**Agenda Item 6:      Presentation – State / Industry / ICAO**

**FINDINGS OF A SAFETY CULTURE SURVEY**

*(Presented by Association of Asia Pacific Airlines and  
Airports Council International)*

**SUMMARY**

This paper aims to stimulate discussions on safety culture by presenting the key findings of a survey on safety culture jointly conducted by AAPA, AACO and ACI.

**1.      INTRODUCTION**

1.1            Safety culture is a recurrent theme at aviation safety seminars and meetings and much discussed in literature on safety in general, e.g. industrial and occupational safety but there seem to have been few attempts to measure it probably because it is hard to define and quantify.

1.2            ICAO and the industry have been spending much effort in setting up standards on hardware and procedures, e.g. in the forms of SARPs and PANS, to ensure safety yet no one would deny that culture, an intangible thing, is equally, if not more, critical and indispensable for the long-term success of any organization aiming to mobilize its team members to achieve a common goal, for example, safety.

1.3            There are many ways to assess safety culture but here is an attempt by Association of Asia Pacific Airlines (“AAPA”), Arab Air Carriers Organization (“AACO”) and Airports Council International (“ACI”) by conducting a survey amongst airline and airport employees. The methodology and findings of the survey are explained and presented below.

**2.      DISCUSSION**

2.1            ACI conducted a pilot survey on safety culture from July to August 2014 and 293 airport employees responded to it. It was then felt a bigger sample size would help confirm the preliminary findings. At the invitation of ACI, AACO and AAPA joined the second round of the survey conducted from November 2014 to February 2015 and encouraged employees of their member airlines to participate. Employees of companies other than aerodrome operators and airlines, such as ground handlers, were also invited to respond to the survey.

2.2            Altogether 650 employees from 46 States in Asia Pacific and the Middle East participated in the two rounds of survey.

2.3 Participants were asked to rate how well their organization, management or colleagues were doing in the implementation of safety policy, demonstrating safety commitment, safety communications, safety training and promotion, safety risk assessment, safety management and reporting, and providing a safe working environment. Finally participants were asked to give an overall rating on the safety culture in their organization.

2.4 Two types of analysis were conducted on the replies. Firstly, the average ratings for each of the some 30 questions in the eight areas mentioned above were calculated to find out which areas, e.g. safety commitment, were best or worst viewed by employees. Secondly statistical correlation analyses were done to identify which areas were more related to the overall assessment of safety culture. As expected there are areas that bear a stronger influence on the perception of safety culture. For instance if management respond in a prompt manner to reported safety concerns, the employee tends to give a higher overall rating on the company's safety culture.

2.5 Here are the key findings:

- a. Prompt response to reports of safety hazards and concerns improves the perception of safety culture by employees. This seems to corroborate a finding coming from a research jointly conducted by Harvard Business Review and Energy Project in 2013 on 12,000 workers that employees are more satisfied when they feel valued and appreciated for their contribution. Responding to safety concerns raised by employees in a prompt manner is perhaps a good way of reinforcing reporting and safety culture, not only enhancing employee morale.
- b. Young employees and contract workers give lower rating on the safety culture of their company than their seniors or full time counterparts. Does that mean supervisors or managers sitting in their office are sometimes out-of-touch and should pay more effort in communicating with the workers on the frontline?
- c. Training has a surprisingly low impact on the overall safety culture rating. Employees that spoke highly of the training they received did not necessarily give a better appraisal on the safety culture of their company. Does that mean the more they know, the more problems they see at their company and if these problems are not solved, they tend to give a lower rating? This paradox may also suggest a gap between training provided and its effectiveness in raising safety awareness.

2.6 The survey report is attached. It provides an executive summary, the findings, detailed analyses, sample size and composition (that is, who responded to the survey?), and a copy of the questionnaire. All participants who provided their email address were given a copy of the report. Respondents were allowed to remain anonymous to encourage participation.

### **3. ACTION BY THE MEETING**

3.1 The Meeting is invited to:

- a) Note and share the information contained in this paper with their colleagues in their State;
- b) Look into the cultural aspect of safety at their organization; and
- c) Discuss.



**March 2015**

# Safety Culture Survey Report

---

## Executive Summary

---

### Background

ACI Asia-Pacific conducted a pilot survey from July to August 2014 to assess the safety culture amongst airport employees. The results of the pilot survey provided some interesting insights; however, they were based upon responses by 293 individuals only mainly from ACI Asia-Pacific airport members.

A second round of the Safety Culture Survey was conducted from November 2014 to February 2015 with the support of Association of Asia Pacific Airlines (AAPA), and Arab Air Carriers' Organization (AACO) to extend the sampling to airline workers and those in the Middle East. The following analysis is based upon responses from 650 individuals from 46 countries/states received as of 13 February 2015; with 42% of responses provided by airports and 38% by airlines, the results shall have better representation of workers working in aviation industry in Asia-Pacific region.

### Key Findings

#### ***Everyone needs a chance to learn lessons from safety reporting***

Our analysis indicates that there may not be enough feedback on safety reports for everyone to learn lessons; especially, contract workers feel less involved in the safety reporting. It is important to note that safety related issues should be evenly communicated among relevant workers regardless of positions and types of employment in order to maintain high safety awareness in the workplace.

#### ***Contract workers and young employees are less happy with current situation***

Comparison of responses by categories reveals that there is a gap in how workers perceive safety culture based on age and type of employment contract (part time/full time/contract staff). The result shows that the younger employees are less satisfied with safety culture while older ones have confidence in general. Similarly, respondents with contract-based employment feel less positive about safety culture than full time workers. It is important to ensure that management support and safety related resources are appropriately provided where needed, and nobody is left behind in the workplace.

#### ***Training itself is not enough to raise safety awareness***

Contrary to conventional belief, practical safety training tends to have less impact on safety awareness of workers. This could mean that trainers should emphasize the purpose of the training in addition to providing guidance on practical procedures so that trainees have better understanding of safety risks and dangers; or perhaps lessons learnt from training need to be translated into day-to-day operational practice in a visible way such as safety reports and safety risk list updates.

#### ***Continuous commitment is required to keep high safety standards***

Workers are more sensitive if safety risks are frequently identified and updated, and also pay attention to whether proper actions are taken to resolve the identified safety concerns. This requires commitment to pay continuous attention to prevailing safety situations and take preventive and corrective actions to manage safety at high level all the time.

### Conclusion

The results of the survey suggests that management should strengthen communication with the lower echelons of the organization who often feel they are left behind and not well informed on safety matters. It is also found that perception of safety culture depends very much how well and promptly management deal with safety concerns that employees raise. In other words, when management "talk the talk, walk the walk", there is a better appreciation of the company safety culture amongst employees. Finally the apparent weak relationship between training satisfaction and safety culture also suggests there is a need to look into the education on this subject in safety training.

It is hoped that this this safety culture survey will be continued on a regular basis in the future.

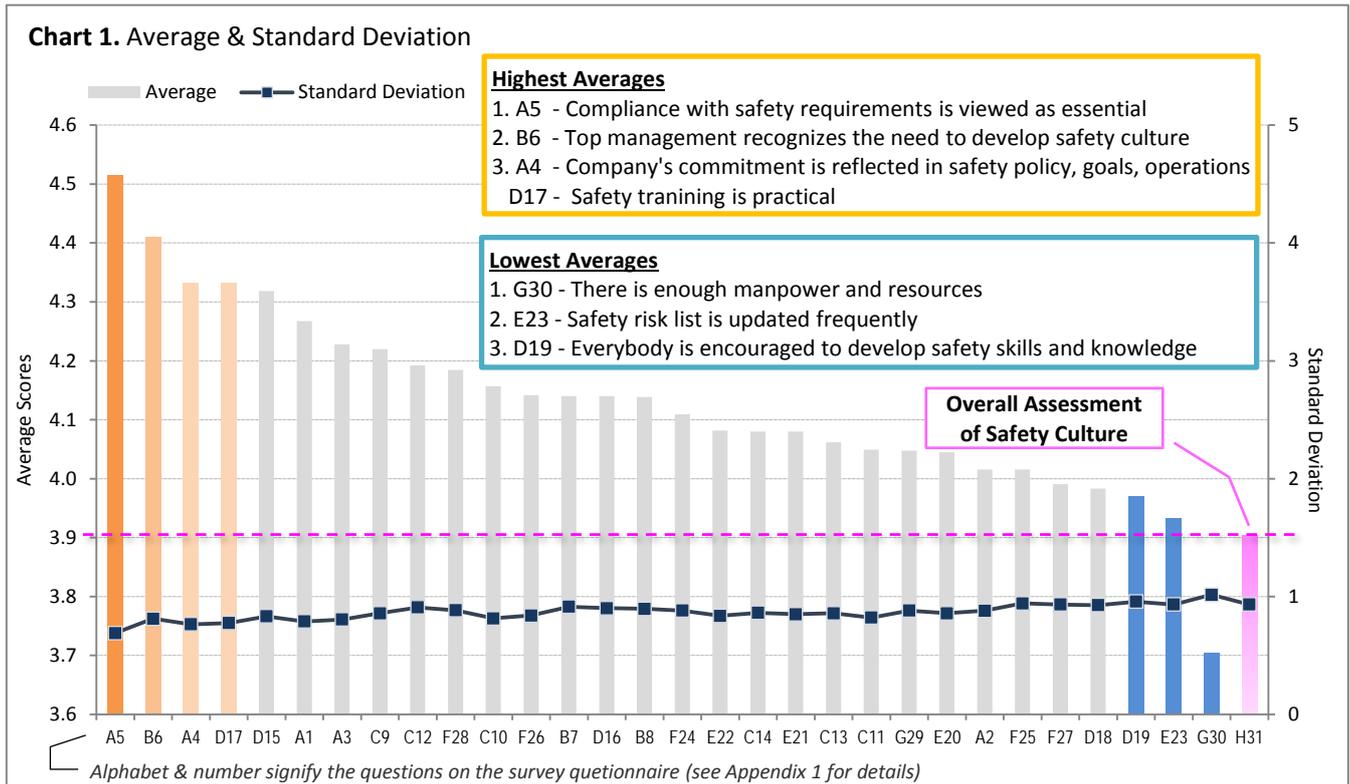
# Table of Content

|   |        |
|---|--------|
| <b>Executive Summary</b> .....  | - 1 -  |
| <input type="checkbox"/> <b>Background</b> .....                            | - 1 -  |
| <input type="checkbox"/> <b>Key Findings</b> .....                          | - 1 -  |
| <input type="checkbox"/> <b>Conclusion</b> .....                            | - 1 -  |
| <br>  |        |
| <b>Detailed Analysis</b> .....  | - 3 -  |
| <input type="checkbox"/> <b>Overview</b> .....                              | - 3 -  |
| Chart 1. Average & Standard Deviation. ....                                 | - 3 -  |
| <input type="checkbox"/> <b>Significant Factors in Safety Culture</b> ..... | - 4 -  |
| Chart 2. Significance to Overall Assessment of Safety Culture. ....         | - 4 -  |
| <input type="checkbox"/> <b>Primary Concerns</b> .....                      | - 4 -  |
| Chart 3. Primary Concerns. ....   | - 4 -  |
| Chart 4. Comparison by Functional Areas (G30).....                          | - 4 -  |
| Chart 5. Comparison by Contract Types (G30). ....                           | - 4 -  |
| Chart 6. Comparison by Contract Types (E23).....                            | - 4 -  |
| Chart 7. Comparison by Contract Types (F27).....                            | - 4 -  |
| <input type="checkbox"/> <b>Comparison by Groups</b> .....                  | - 6 -  |
| Chart 8. Comparison by Age Groups (Overall).....                            | - 6 -  |
| Chart 9. Comparison by Contract Types (Overall) .....                       | - 7 -  |
| Chart 10. Comparison by Functiona Area (Overall).....                       | - 8 -  |
| <br>  |        |
| <b>Annex 1. Safety Culture Survey Questionnaire</b> .....                   | - 9 -  |
| <br>  |        |
| <b>Annex 2. Demographic Breakdown of Survey Responses</b> .....             | - 12 - |
| Chart 11. Regional Breakdown of Repondents .....                            | - 12 - |
| Chart 12. Core Business of Organization .....                               | - 12 - |
| Chart 13. Functional Area within Organization .....                         | - 13 - |
| Chart 14. Age.....  | - 13 - |
| Chart 15. Gender.....   | - 13 - |
| Chart 16. Work Schedule.....  | - 13 - |
| Chart 17. Contract Type .....   | - 13 - |
| Chart 18. Response Distribution.....  | - 14 - |

## Detailed Analysis

### Overview

Overall result of the Safety Culture Survey suggests that respondents in general have more confidence than concern in the safety culture of the organization they belong to. The point averages are above 4 on a 5 point scale (with 5 being “Strongly Agree” and 1 being “Strongly Disagree”) in most of the questions on the Survey (see Appendix 1 for the list of questions). The standard deviations are at the low level, mostly below 1 point, which implies that the responses are close to the averages; majority of respondents “Agree” that safety culture is adequate at workplace.



As highlighted in Chart 1, questions that earned the highest evaluations are A5, B6, A4, and D15, indicating that the respondents in general have high awareness of safety culture. The importance of compliance with safety requirements is broadly shared among workers, and the development of safety culture is supported by top management, which is also reflected in the company’s policy and procedures. The safety training also appears to be properly implemented with high satisfaction displayed in the survey result. On the contrary, lower evaluations on Question G30, E23, and D19 indicate that the survey participants in general perceive that there is not enough allocation of manpower and resources to maintain safety in workplace and that the follow-up supports are not sufficiently provided in the areas of safety risk updates and capacity development on safety skills .

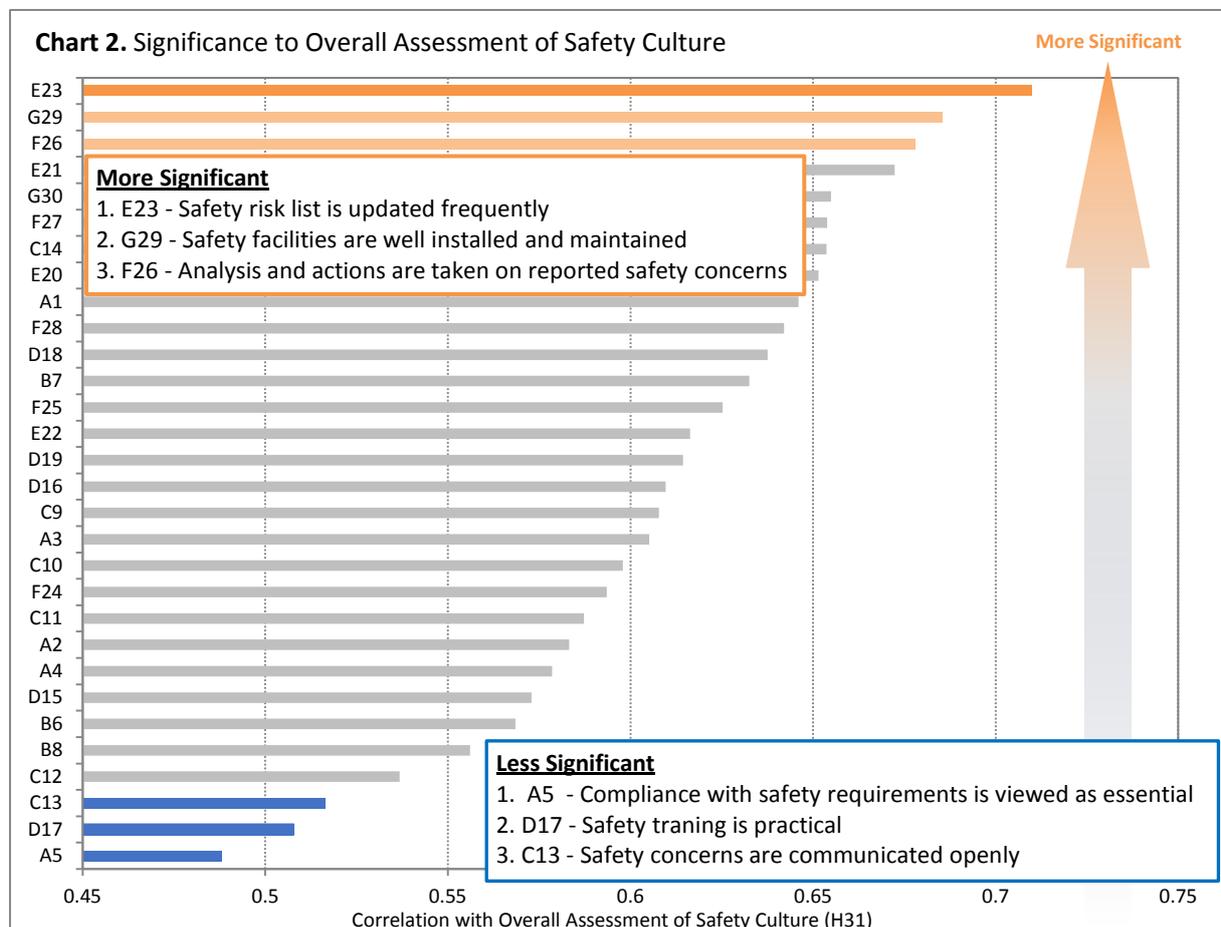
It is also important to note that the overall assessment of safety culture (Question H31) scored relatively lower despite the high averages observed in many of the preceding questions. This is an indication that certain areas in safety management have more significant influence on the overall perception of safety culture. The analysis from this perspective will provide useful insight on how safety culture can be improved more effectively.

### Significant Factors in Safety Culture

As illustrated in Chart 2, the correlation analysis indicates that certain factors with higher correlation to Question H31, overall assessment of safety culture, are considered to have more significant influence on how workers perceive the general state of safety culture in workplace.

According to the correlation analysis, what matters most is how well safety risks are identified and updated (Question E23). Workers also are also sensitive if proper actions are taken when safety concerns are raised (Question F26). Both factors imply that it is important to provide close attention to the prevailing safety situation and enforce subsequent preventive and corrective measures once safety issues are identified. Furthermore, sufficient allocation of relevant resources to safety facilities is also considered essential to establish positive safety culture (Question G29); the same applies to manpower (Question G30 ranked in the fifth place).

On the other hand, compliance with safety requirements (Question A5) does not necessarily lead to workers' confidence with safety culture. Provision of practical safety training (Question D15) and facilitation of open communication on safety concerns (Question C13) also seem to have weaker influence on how workers perceive safety culture despite the common understanding of the importance of these safety aspects. This result does not necessarily suggest that enforcement of compliance and training is not effective to raise safety awareness; it could be an implication that safety policy and lessons learnt from compliance manuals and trainings should be reinforced with effective actions on day-to-day operations in order to raise safety awareness, given that respondents care more about if safety risks are frequently updated and addressed as discussed above.



**Primary concerns**

The primary concerns that require particular attention are the safety aspects which have larger influence on overall safety culture assessment but received lower evaluation as highlighted in the lower-right corner of Chart 3 below: Is there enough manpower and resources (Question G30)? Is safety risk list kept up-to-date (Question E23)? Does everyone have a chance to receive feedbacks on safety report (Question F27)? These are the factors that are more likely to be linked with safety culture, but respondents have less confidence with them. Comparison of responses by different groups reveals which stakeholders in particular hold the primary concerns highlighted in Chart 3.

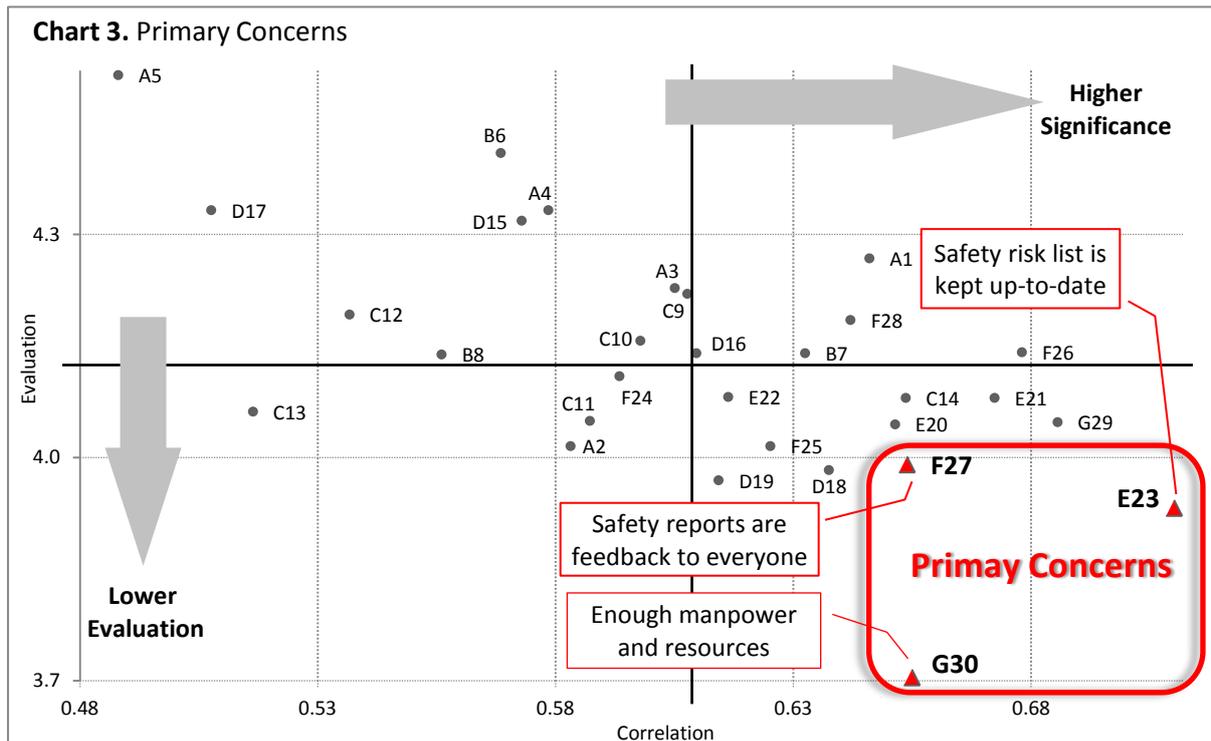
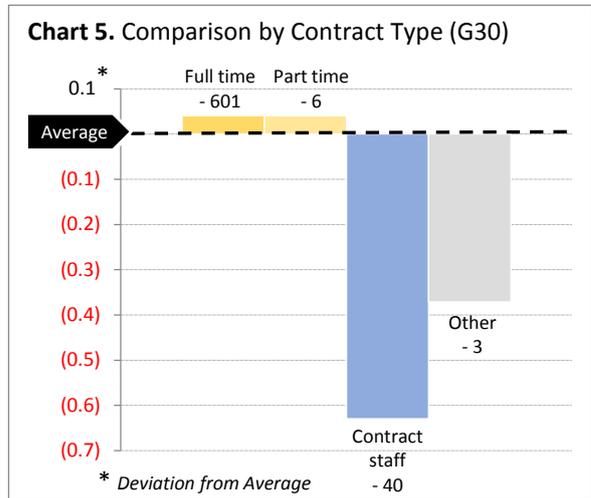
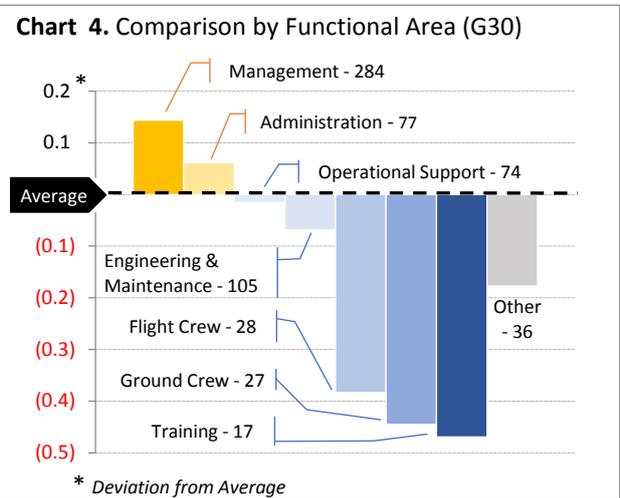


Chart 4 below illustrates that the shortage of manpower and resources are felt more strongly by workers in the frontline, namely flight crews and ground crews, and training personnel, who scored lower than the average in contrast to those in management and administration. Contract staffs also expressed the need for additional support with manpower in comparison with full time staff as clearly observed from Chart 5. The gaps between different functional groups and contract types should be recognized in order to adequately allocate human resources to areas where needed.



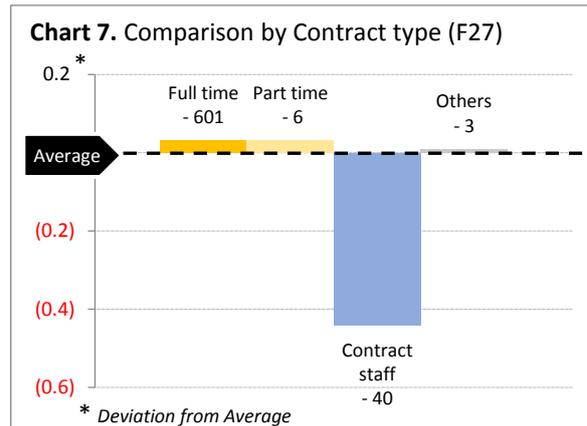
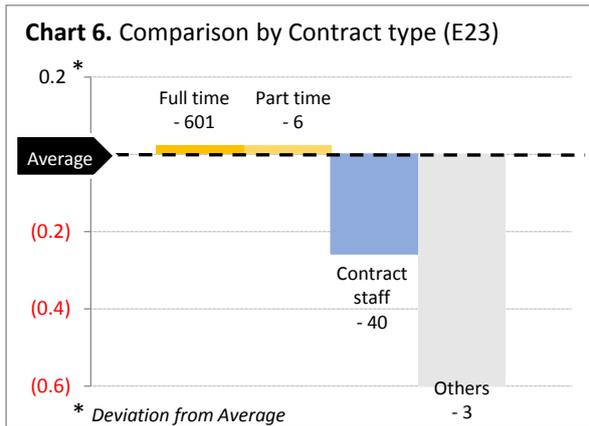
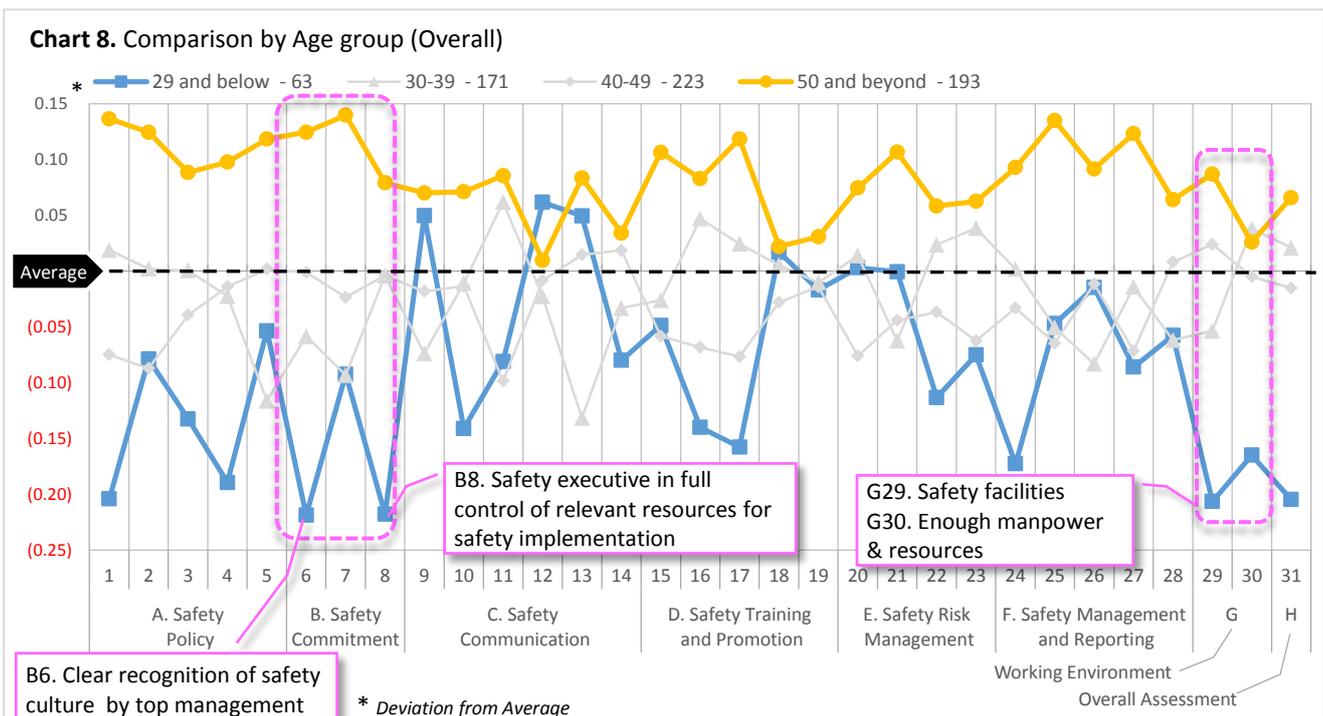


Chart 6 above shows that the contract staffs are less confident if the safety risks are properly identified and analyzed (Question E23) compared to full time staffs. The similar gap between contract types is also perceived in Question F27; the contract staffs tend to agree less that safety reports are shared with the frontline staffs so that they can learn lessons as illustrated in Chart 7. It could be the case that the safety related matters are not evenly communicated with everyone in the workplace; it is needless to say that all the employees in charge, regardless of the contract type, should be equally entitled to be kept updated with the latest safety situations in order to share safety risks and maintain high safety standards in workplace.

**Comparison by Groups**

As discussed in the previous paragraph, there were clear contrasts between different groups in the evaluation on certain aspects of safety culture. Overall comparison of responses by groups further reveals how perception of safety culture varies based on his/her age, position, and organization.

One of the most notable observations is the generation gap over the perception of safety culture as illustrated in Chart 8. The oldest age group, 50 years and older, gave the highest evaluation throughout the questionnaire while the youngest group aged 29 years and below scored lower in most of the questions. The gap is especially clear in the aspects of B. Safety Commitment and G.



Working Environment. Younger employees tend to express less satisfaction with the management’s commitment to allocate relevant resources to implement safety in workplace; this result may raise the concern that those in managing positions (in general, older) may not fully grasp the safety concerns shared among younger workers.

Comparison by contract type (Chart 9) indicates that contract staffs are generally less satisfied with safety culture in the workplace compared to the large majority of respondents with full time employment. As already illustrated in Chart 6, the lack of manpower is strongly felt by the contract workers (Question 30), which is also linked with the lower evaluation on Question B8; they feel less assured that the safety accountable executive properly allocates relevant resources to implement safety in the workplace. An issue with safety communication can be also observed in Question 10; contract workers feel less confident that their co-workers are aware of the safety reporting system. This raises the concern that the certain workers might have limited channels to report or share safety concerns when such opportunity should be equally made available to everyone.

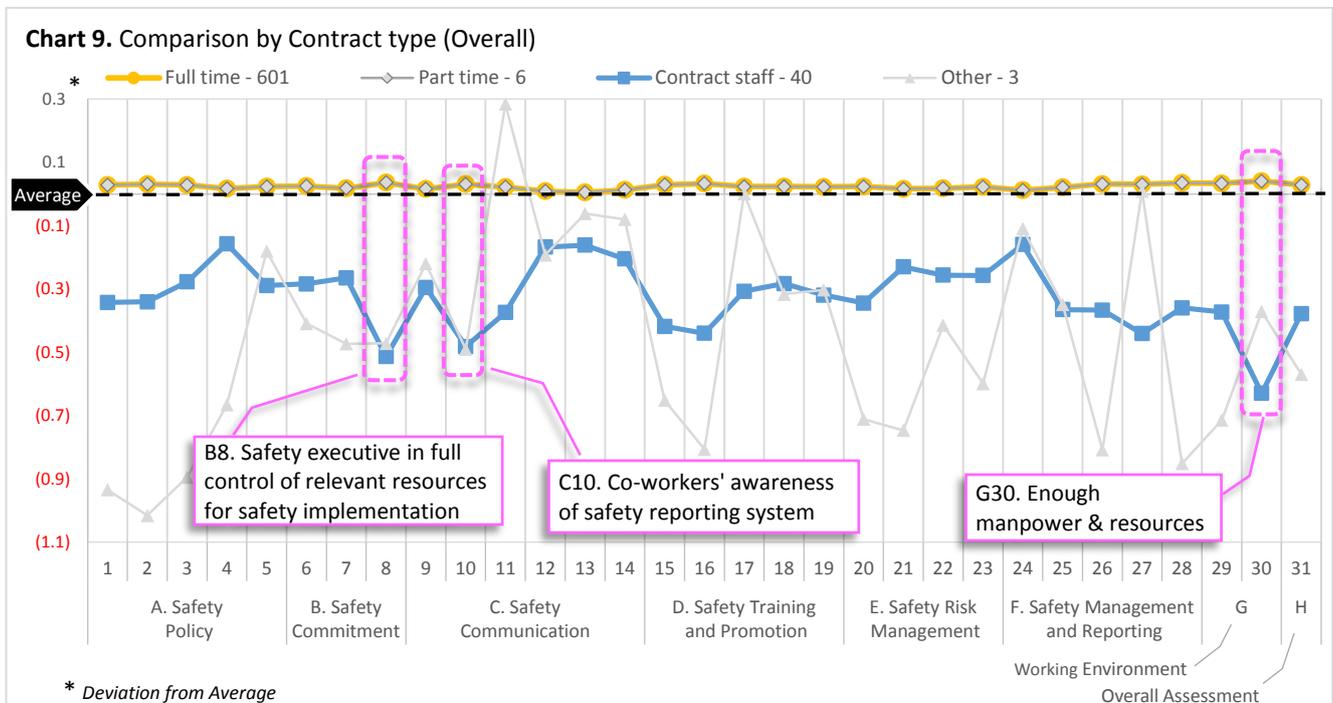
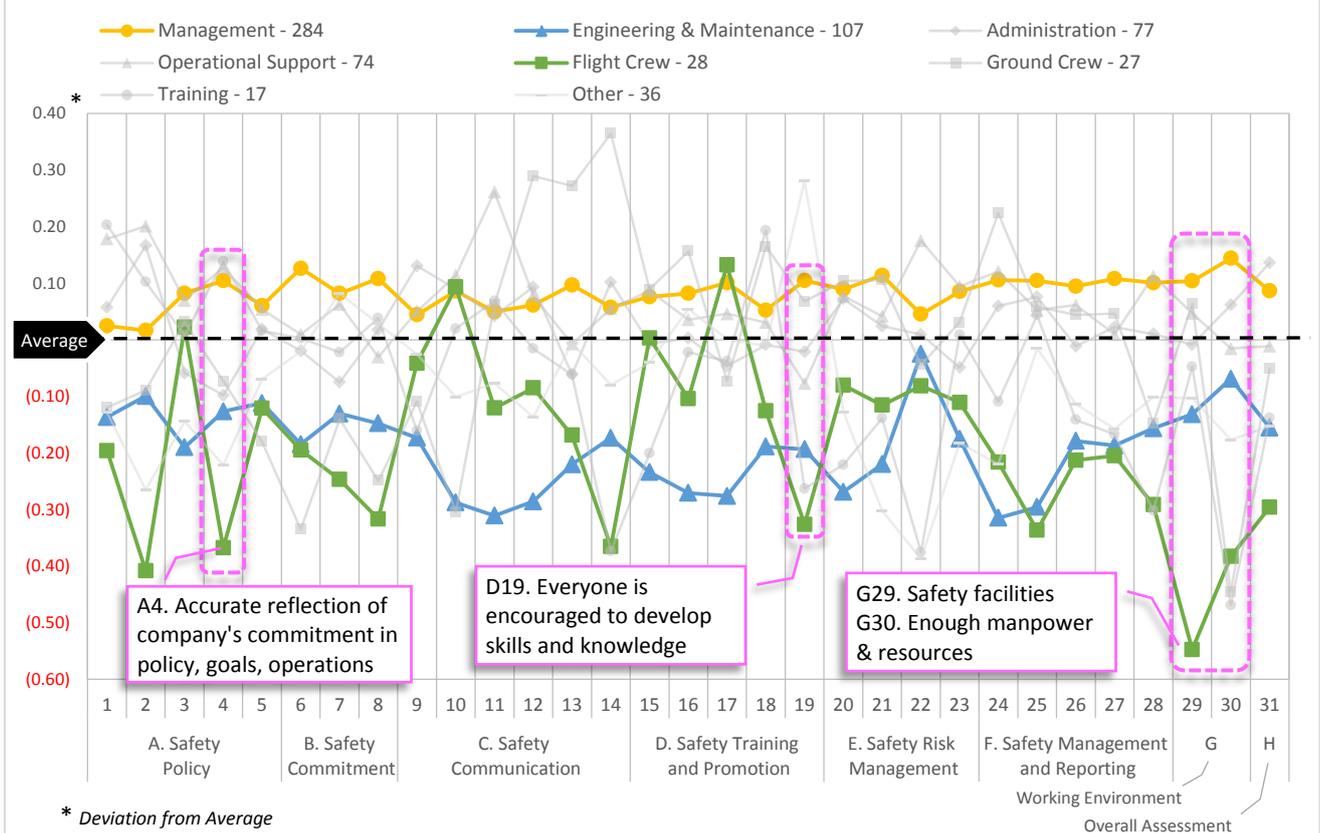


Chart 10 illustrates that the respondents in different positions (functional areas) expressed contrasting perceptions on certain aspects of safety culture. First of all, those in engineering and maintenance fields scored lower than average throughout the questionnaire, implying they are less confident with safety culture in general. Flight crews also gave lower evaluation on many aspects of safety culture in contrast to those in management positions. The contrast is the most obvious in the area of G. Working Environment as already shown in Chart 4, where the lack of resources is more strongly experienced by flight crews. There are other areas where the contrast is apparent; for example, there is a clear gap between management and flight crews on how they perceive the company's safety commitment (Question A4); flight crews agree much less with the statement that company’s commitment is accurately reflected in safety policy, goals, and operations. This implies that the management might need to communicate more closely with the staffs in the frontline to

accurately grasp which safety aspects require particular attention. Flight crews also feel that the support given to develop skills and knowledge is less satisfactory (Question 19). It is important to note that this is one of the three areas which received the lowest evaluations as shown in Chart 1; those in management could address the need for capacity building so that employees in need are entitled to have more opportunities to develop their ability to implement safety in the workplace.

**Chart 10. Comparison by Functional area (Overall)**



## Safety Culture Survey Questionnaire

### Part 1 - General Demographic Details

Please indicate the core business which best describes your organization.

|                             |                               |
|-----------------------------|-------------------------------|
| Airline                     | Airport Operator              |
| Maintenance                 | Ground Handling               |
| Navigation Service Provider | Custom/Immigration/Quarantine |
| Commercial Tenants          | Other _____                   |

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

|                     |                             |
|---------------------|-----------------------------|
| Management          | Engineering and maintenance |
| Administration      | Training                    |
| Flight Crew         | Ground Crew                 |
| Operational Support | Other _____                 |

Please indicate age range.

|      |       |       |      |
|------|-------|-------|------|
| <=29 | 30-39 | 40-49 | >=50 |
|------|-------|-------|------|

Please indicate gender.

|      |        |
|------|--------|
| Male | Female |
|------|--------|

Work Schedule

|          |            |                 |
|----------|------------|-----------------|
| Day time | Night time | Day/Night Shift |
|----------|------------|-----------------|

Contract Type

|           |           |                |
|-----------|-----------|----------------|
| Full time | Part Time | Contract staff |
|-----------|-----------|----------------|

Airport where you work: \_\_\_\_\_ (enter 3-letter IATA code)

Organization: \_\_\_\_\_

Country: \_\_\_\_\_

Email (optional): \_\_\_\_\_

### Part 2 – Questionnaire

Please indicate using the five point scale how true the following statements are of your organization.

|                          |                 |                   |              |                       |
|--------------------------|-----------------|-------------------|--------------|-----------------------|
| 1                        | 2               | 3                 | 4            | 5                     |
| <b>Strongly disagree</b> | <b>Disagree</b> | <b>No Opinion</b> | <b>Agree</b> | <b>Strongly Agree</b> |

**Section A. Safety policy.**

1. My co-workers are aware of my organization's safety policy.
2. My co-workers are aware of my organization's annual safety goals.
3. My co-workers are aware of my organization's safe operation procedures.
4. The safety policy, goals and related operation procedures are an accurate reflection of the company's commitment to safety.
5. Compliance with safety requirements is viewed as essential in maintaining a good safety culture.

**Section B. Safety commitment**

6. There is clear recognition from top management of the need to develop and foster a good safety culture.
7. There is adequate corporate support for implementing and maintaining a positive safety culture in my organization.
8. The safety accountable executive has full control of relevant resources for safety implementation and improvement.

**Section C. Safety communications**

9. In my organization, good communication and circulation of information are viewed as key in nurturing safety culture.
10. My co-workers are aware of my organization's safety reporting system.
11. My co-workers are regularly informed about "lessons learnt" from incidents or near misses.
12. There is a willingness to learn from the experience of other organizations.
13. Any safety concerns can be effectively communicated to the next level in a non-punitive atmosphere.
14. Safety concerns once raised are dealt with in a timely and comprehensive manner.

**Section D. Safety training and promotion**

15. In my organization, safety training is viewed as an integral part in fostering a better safety culture.
16. The organization's safety policy, regulations and operation procedures are circulated among all employees by training or meeting periodically.
17. Safety training is very helpful to our practical working circumstances.
18. The frequency, content and method of safety training are appropriate in my organization.
19. Everybody is encouraged to develop and apply their own skills and knowledge in order to enhance organizational safety.

**Section E. Safety risk management**

20. My co-workers work continuously to identify and overcome threats to safety.
21. My co-workers fully understand the hazards and risks of their own operation.
22. My co-workers always follow safe operation procedures.
23. All the safety risks identified are properly analyzed and managed; the risk list is updated frequently.

**Section F. Safety management and reporting**

24. The management of my organization differentiates between genuine human error and willful acts of violation.
25. Acceptable behavior and unacceptable behavior is clearly defined and understood.
26. Reported safety concerns are analyzed and appropriate subsequent action undertaken.

- 27. Safety reports are regularly feedback to frontline staff so that everyone learns the lessons.
- 28. There are prompt follow-up actions when safety incidents and accidents occur at the airport.

**Section G. Working environment**

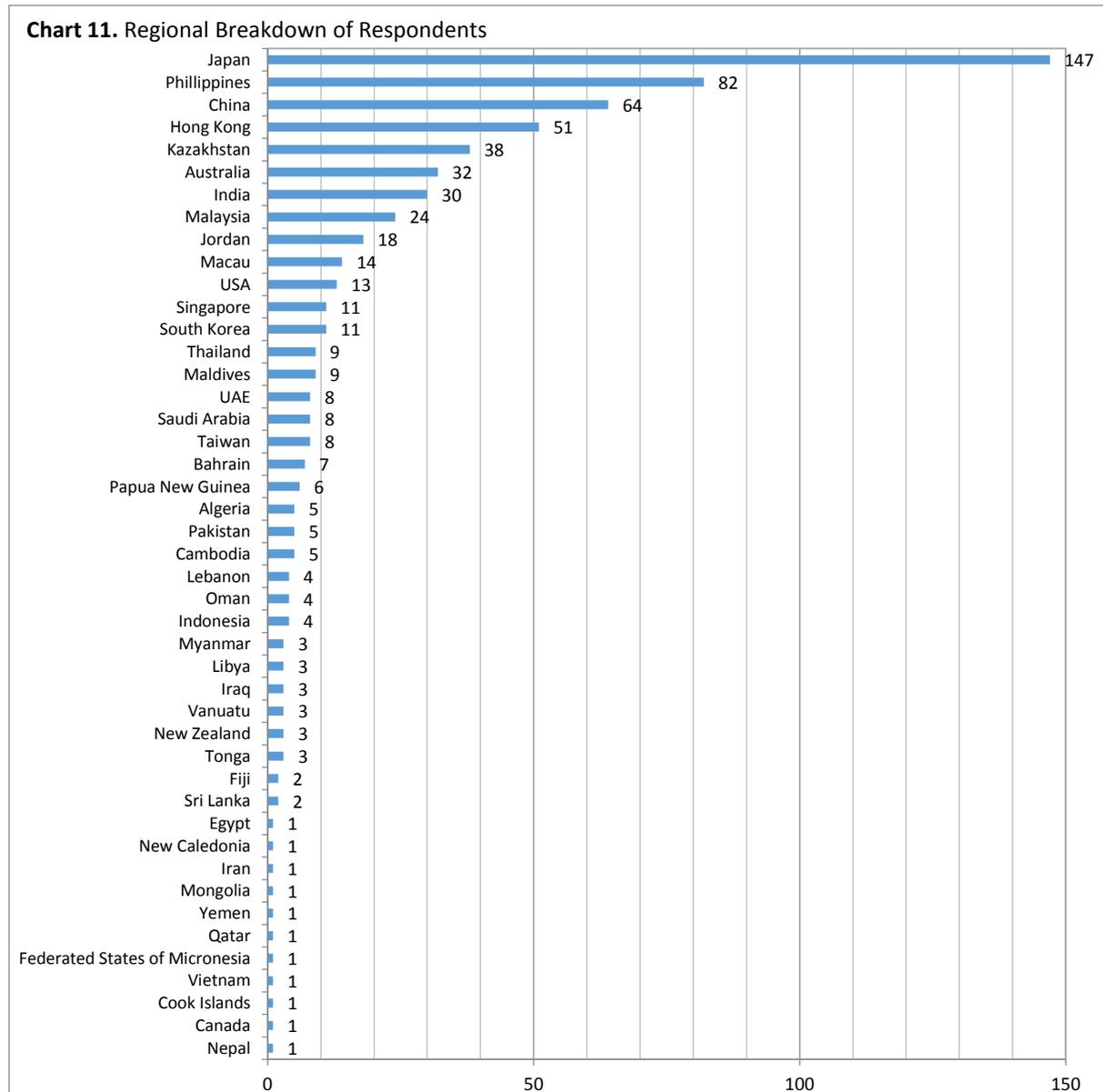
- 29. Safety facilities in the workplace are well installed and maintained.
- 30. There is enough manpower and resources put into safety.

**Section H. Overall Assessment of Safety Culture.**

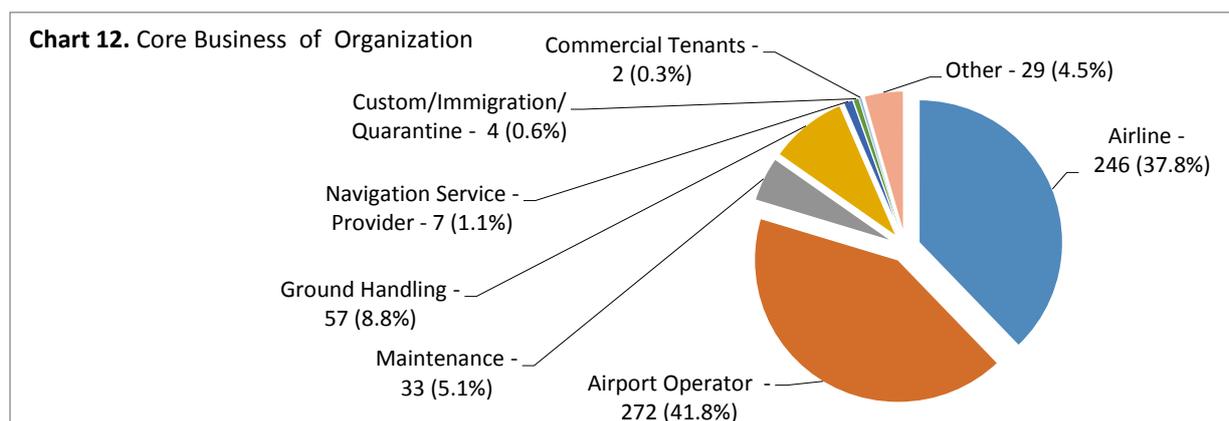
- 31. The safety culture in my organization is excellent and exemplary.
- 32. Is there anything further you would like to add?

**Demographic Breakdown of Survey Responses**

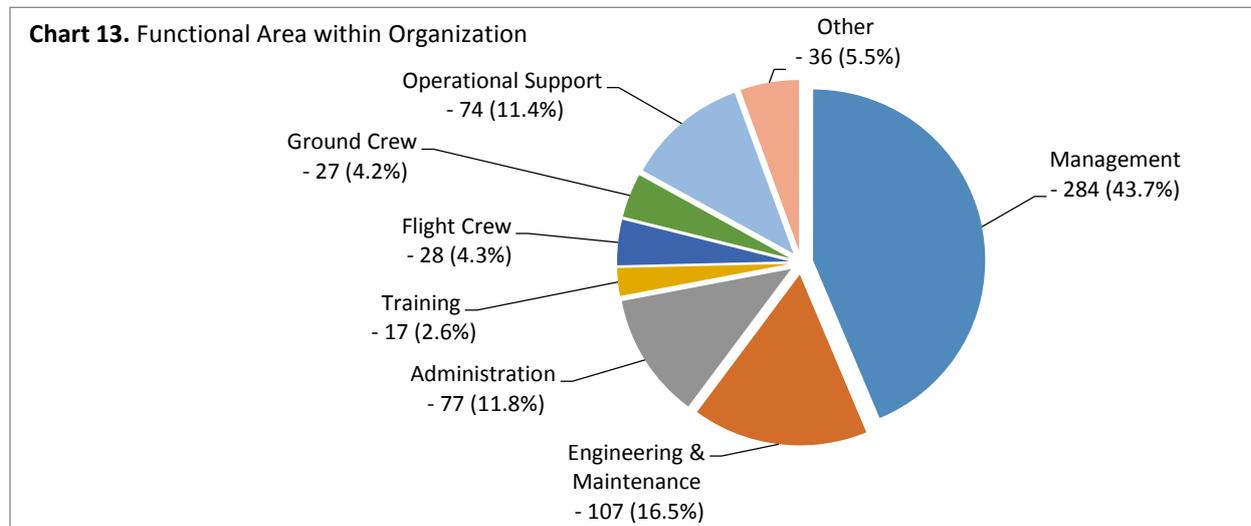
The total number of responses of the first round of Safety Culture Survey was 650 from 46 countries/states as of 13 February 2015. (See Chart 11.)



The majority of responses came from Airlines (38%) and Airport Operators (42%). (See Chart 12)



In terms of functional areas of the respondents, nearly half of the respondents are in Management (44%), and the rest of the responses mostly came from those in Engineering and maintenance (17%), Administration (12%), and Operational Support (11%), etc. (See Chart 13.)



We had a good number of responses from all age groups except for the youngest one – 29 years old and below (10%). (See Chart 14.) The large majority of respondents are male, full time, and day time workers (76%, 78%, and 93%, respectively). (See Chart 15-17.)

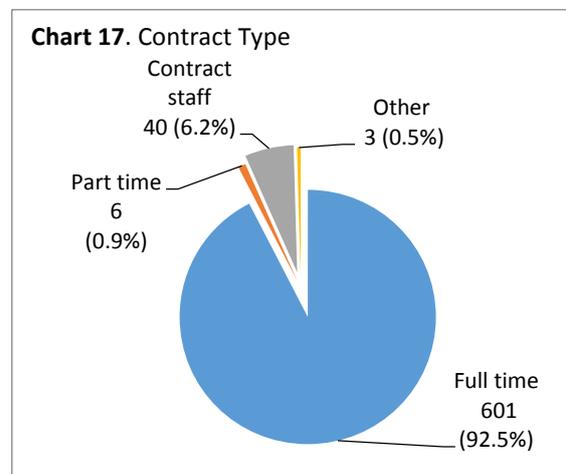
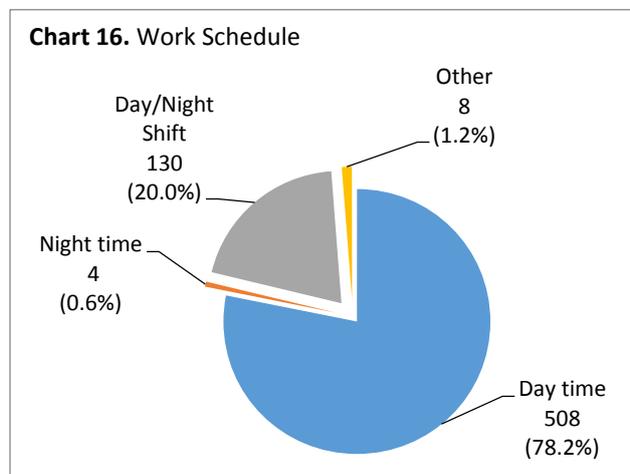
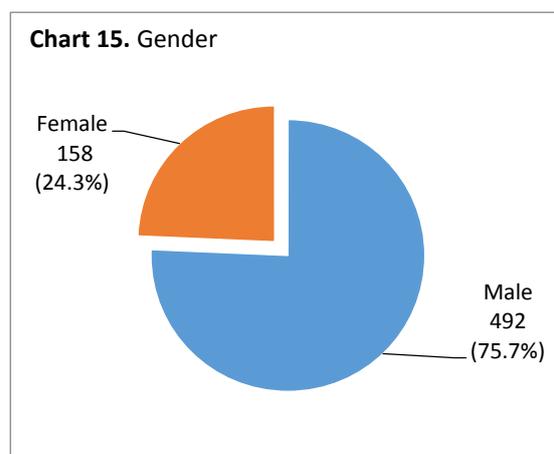
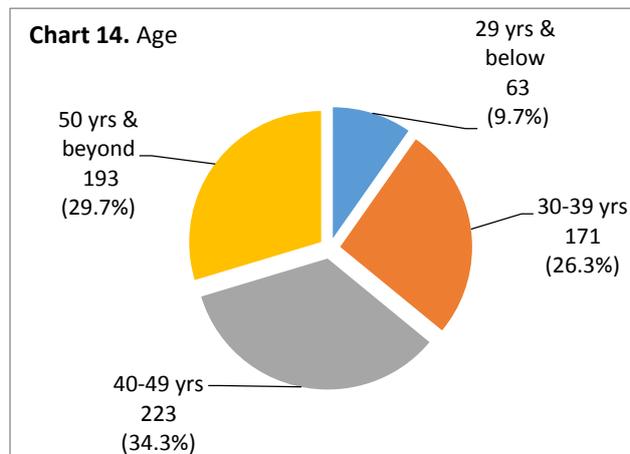


Chart 18 illustrates that around 80% of respondents answered either “Strongly Agree” or “Agree” throughout the questionnaire.

