Truckee Tahoe Airport

Gap Analysis and Safety Assessment 2015

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EXECUTIVE SUMMARY

There are abundant indications that the Truckee Tahoe Airport is actively engaged in protecting the safety of their employees, contract personnel, airport users, and the public at large. However, the very nature of a "gap analysis," which has the sole purpose of identifying weaknesses, can often leave the perception that it is a "negative report." For this reason we want to manage reader expectations from the very start. *This report is chock full of opportunities for improvement, and wastes very little space on the things that are already going well, of which there are many*. It should be read with this in mind.

This gap analysis was extremely comprehensive, with thousands of data points. To communicate the findings in a concise manner, we have chosen to provide a relatively brief narrative of the key points, findings, and recommendations, supplemented with multiple appendices that include the raw data for those who wish to go a bit deeper.

On the whole, the decision to pursue a formalized SMS, ahead of any FAA mandate to do so, is a wise one that will address the vast majority of issues uncovered in this gap analysis. At its core, the concept of formalized safety management is designed to accelerate and improve organizations that are already doing most things right, as opposed to "fixing" ones that do not truly prize safety as a core value. The Truckee Tahoe Airport clearly fits into the first category and in our opinion, is ready to take the next steps.

The fact that KTRK is a non-Part 139 and non-towered airport, places a unique dynamic on the cultural development and underlying change management strategies of the airport, its employees, and its users. The lack of overarching regulations normally present at towered Part 139 airports actually dilutes KTRK's regulation-driven authority over its users, relative to larger airports. Unlike larger airports, who can drive change though regulatory mandates, at KTRK, this approach must be replaced with a strategy of *influence*. We see this as a huge advantage in creating willful employee engagement with new directions in safety management.

This report is organized to provide specific, data-based recommendations. We have included specific recommendations within the data analysis and findings, as well as major findings and recommendations in the final roll-up section. Multiple appendices are included with raw data and a Functional In-Depth Review of improvement opportunities (**Appendix 03**).

Background, Objectives, and Data Collection

In an effort to improve their overall safety posture, the Truckee Tahoe Airport management (KTRK) contracted with Convergent Performance in February 2015 to:

1. Evaluate, consolidate, and refine current safety strategies and practices and;
2. Integrate these opportunities into a formal Safety Management System (SMS) *scalable to methods and tools readily available to an airport its size*.

A safety gap analysis was requested, including a comprehensive understanding of the District's roles and responsibilities within the greater surrounding airspace, and to answer the following two-part question:

What can the airport control and not control with regard to safety, and how can we best implement improvements to overall safety?

Toward this end, the objectives of the Gap Analysis and Safety Assessment were to:

1. Conduct an objective and subjective review of current programs and policies
2. Diagnose the organization's safety program "health"
3. Identify positive operational/management practices
4. Identify areas requiring improvement
5. Incentivize and amplify the safety and risk management dialogue at KTRK
6. Establish groundwork for Safety Management System tools and techniques to follow, and
7. Benchmark these findings against industry best practices

The data objectives set prior to the gap analysis were organized to assess eight safety-related topics:

1. Existing safety culture
2. Risk management
3. Compliance
4. Training
5. Safety practices and awareness
6. SMS components and readiness
7. Ongoing and future operations, and
8. Communications

To identify opportunities for improvement, Convergent personnel conducted a two-phase, four-pronged gap analysis.

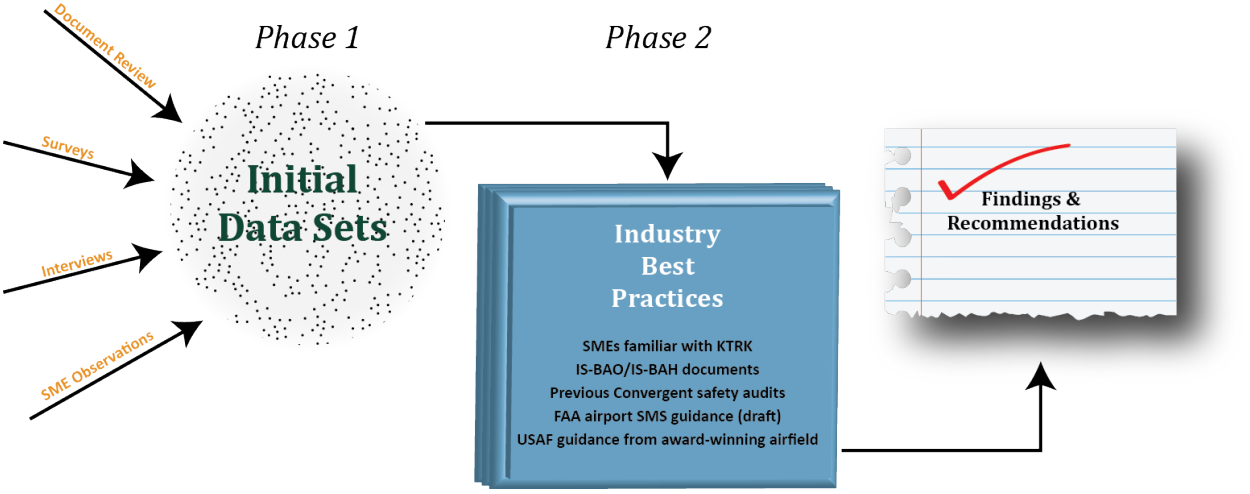

Figure 1 – Four-Pronged Gap Analysis

Phase 1 included:

1. **A thorough document review**. After signing the contract to partner on this improvement initiative, Convergent Performance set to work reviewing all of Truckee Tahoe Airport's current documentation, policies and procedures, and manuals.
2. **Online surveys**. Online surveys were made available and promoted in two different versions to focus on local airport personnel (employees), and visiting personnel (owners, operators, pilots; both local and transient). The purpose was to obtain anonymous input focusing on safety culture, risk management, compliance, training, operational procedures, and communications. Each questionnaire bank focused on respective responsibilities and exposure at KTRK in accordance with official or unofficial roles. Survey participants also had the opportunity to input written comments pertaining to specific questions. The survey was deployed from 20 March through 16 April 2015. The participation rate was 95% for the airport personnel version and a participation count of 94 persons for the visiting personnel version. The participation numbers for both versions provided a robust data set to assess and formalize conclusive analysis.
3. **Formal and informal interviews.** Interviews were conducted via face-to-face meetings during the week of 13-16 April 2015, and additional phone interviews were conducted in the following two weeks. Pre-planned interviews were scheduled and conducted with all airport employees, local pilots, Soar Truckee Inc. personnel, ACAT Board members, and TTAD Board members. The interview process consisted of three different questionnaire banks focused on roles and responsibilities at KTRK: Management, Workforce, and visiting Pilot/Owner/Operator. The purpose of the interviews was to obtain discussion-based information focusing on (but not limited to) safety culture, risk management, compliance, training, operational procedures, and communications. Overall, 25 interviews were conducted.
4. **Subject matter expert (SME) observations**. Both active and passive observations made during the April 2015 visit produced data points which generated or contributed to

Findings/Recommendations, as well as duplicated and amplified cited issues discovered via survey, interview, and compliance checklist efforts. A local area flight literally offered the 15,000 ft. vantage point and enabled a differing perspective of the surrounding area of KTRK, as well as the local VFR and IFR airspace issues. The observations included the AOA layout and vehicle traffic access, self-serve fueling station, Emergency Response Plan, limited formal Risk Management (RM) application, and signage for demarcation of airport property and AOA area(s).

Armed with these data points, the Convergent team moved to Phase 2.

Phase 2 of the project was to conduct a Functional In-Depth Review (**Appendix 03**). We based our findings and recommendations on an analysis of these datasets, juxtaposed against industry best practices and top tier safety programs and standards from around the globe. These included:

- FAA draft guidance on airport safety management systems
- International Standard for Business Aviation Operations and Aircraft Handing (IS-BAO/IS-BAH) documents
- U.S. Air Force guidance from an award-winning airfield
- Previous Convergent safety audits of a variety of high-performing aviation organizations
- Subject matter experts familiar with the administrative, environmental, and operational aspects of the Truckee Tahoe Airport

Four-Pronged Gap Analysis

In this section, we will identify key insights derived from the data, and include some focused recommendations. These recommendations also appear in the **Major Findings and Recommendations** section of this report, but are duplicated here to put them close to the analysis, so that the reader can see the logic and connections drawn directly from the document review, surveys, interviews, and observations.

Document Review

The purpose of the document review was twofold. First, we were looking for any notable safety concerns; and second, we wanted to familiarize our subject matter experts with the administrative side of KTRK operations prior to our site visit.

Convergent personnel were provided open access to KTRK guidance and documents. A review of 30 documents (**Appendix 09**) paint a picture of a functional organization with multiple levels of influence on the safety equation. From this initial review and subsequent gap analysis, four findings and recommendations emerged.

1. **Possible misalignment of the Safety Management function**. In high-performing SMS programs, the Safety Manager typically reports directly to the most senior manager/executive. This provides for full support, and more critically, full autonomy of action. AT KTRK, we recommend that you consider this organizational shift.
2. **No formalized safety reporting, tracking, and analysis system**. While some safety-related information is flowing, a formal SMS-style reporting, tracking, and analysis system will bring KTRK up to top-tier performance in this area. The deployment of the iSMS, with sufficient manager and employee training, will take care of this.
3. **Insufficient safety-related guidance on key roles and responsibilities at multiple levels**. As in many similar organizations, the safety functions, roles, and responsibilities of many job descriptions are *assumed*, *unstated*, or *underdeveloped*. This appears to also be true at KTRK, and can be remedied with the rollout of your SMS, in close coordination with your Human Resources function.
4. **Lack of an inclusive, integrated system for risk management**. This is closely related to finding #2 above. However, *risk management* is a high driver of safety management and must be trained and practiced at all levels for an SMS to operate effectively and efficiently where the rubber meets the road. Our recommendation is to include core risk management training—for each employee, contractor, and user—during the initial rollout phase of your SMS.

In summary, each of these recommendations can and should be addressed with the customization of the KTRK SMS program.

Following the document review process, we fielded two surveys to gather more insights.

Online Surveys

KTRK Employee Survey: Key Insights and Recommendations

With 19 employee participants in this data set, the percentages of categorical answer options may be relatively high (i.e. 2 of 19 equates to 10.5%). Our analysis of the data takes this ratio into consideration, but also places significance on the smallest number of adverse answers, because even 1 individual out of 19 who thinks/acts/perceives well outside the standard deviation may be a significant risk to the overall operation. There are no alarming response percentages within the survey data which would highlight a commonly perceived high-risk factor. However, there are several data points which indicate room for improvement in the overall safety culture and supportive programs.

1. **Leadership commitment to safety**. Overall, the survey results show that airport management and TTAD Board commitment to safety is perceived as strong and healthy. There are some perceptions that not all supervisors and management promote safety equally, or communicate safety measures and policy efficiently or effectively.

   The introduction of the official SMS will alleviate these issues at the strategic level, however management and supervisors must work/speak from the same page, so an integrated communication strategy is recommended.

2. **Compliance**. Current safety policies and practices are present and enforced, *but not necessarily perceived as mandatory*. A significant percentage of airport employees feel that high operations tempo impedes on routine safety expectations and practices.

   Recommend that KTRK management reinforce the critical nature of mandatory compliance with all guidance, and create a quality assurance function to address this issue.

3. **Training and qualifications**. Although survey results indicated robust support from management to provide training, a significant number of respondents (>30%) indicate that "sometimes" the: 1) tasks exceed their qualifications/capabilities, 2) workloads exceed one person's capacity, and 3) tasks exceed training levels. The relatively high percentage indicates an area of concern. However, considering the frequency of occurrences was assumed to be less than constant (i.e. "sometimes") it is *possible* these responses are in relation to periods of high operations tempo (i.e. holiday weekends) or recent duty assignments to unique operations (i.e. UNICOM).

   Deeper analysis is recommended to isolate and correct these concerns where they can be authenticated.

Visiting Owners/Operators/Pilots Survey: Key Insights and Recommendations

Overall, the survey results show that aircraft owners/operators/pilots have a high level of confidence in KTRK Airport Management and their safety initiatives, and consider KTRK "above average" in terms of safe operations and initiatives compared to similar airports. This is faint praise. The goal of this collaborative effort will be to change "above average" to "the best we've encountered."

The count of 94 respondents is an effective number to draw relevant analysis from. There are no alarming response percentages within the survey data which would highlight an immediate safety risk via active or latent failures. However, as with the KTRK employee survey, there are several data points which indicate room for improvement in the overall safety culture and supportive programs.

1. **Reluctance to Report**. There is an impactful percentage (>10%) who would either not report obvious unsafe situations or conditions, or would *not feel comfortable* approaching airport workers if they were not following safety policies or procedures. Although a relatively small percentage, this response—coupled with 25% of respondents stating they have "observed unsafe practices at KTRK"—is concerning (Unsafe + Unreported = Ongoing Risk).

   The implementation of the SMS should be accompanied by a robust communications strategy stressing the critical importance of intervening to stop unsafe practices and reporting.

2. **Risk from/to Transient Operators**. A majority of respondents identified non-airport workers and non-local pilots as posing significant risk to KTRK operations. Consistent comments from respondents focus on the high risk transient pilots pose to KTRK flight operations, and a concern with lack of consistency in UNICOM workers' capabilities and use of nonstandard communications.

   Therefore, an aggressive campaign is required to communicate risk mitigation strategies, and emboldening this demographic to willingly and freely address hazards when they identify them. Additionally, many factors drive a need to improve transient operators awareness of the risks associated with the hazardous environmental factors that are ever present.

The Truckee Tahoe airport has garnered an unprecedented reputation for its affiliation with numerous aircraft accidents on the airport and within the surrounding area over the last two decades. The FAA and NTSB will procedurally correlate an aircraft crash to the nearest airport, and *therefore the airport may be a statistical victim versus directly related to an accident*. However, KTRK has been linked to over 20 aircraft accidents in the past 10 years. Those directly linked to the airport (intending to take-off or land at KTRK) can be officially categorized into multiple factor-related and causal-related root cause categories. But, the predominant cause of aircraft incidents and accidents directly related to KTRK are due to pilot error.

KTRK has incorrectly been labeled by some as a "dangerous airport," however the true danger is related to the surrounding geographical location (5,901' MSL), topography (varying high mountainous terrain), and meteorology (adverse wind events and winter weather effects). Without dissecting each incident and accident related to KTRK, the data depicts a trend of pilot error(s) related to the true dangers listed above. This scenario coupled with inadequate flight planning, deficient weather review, and/or poor flight discipline have led to preventable incidents and fatal accidents.

Following collection of data via surveys, we conducted multiple interviews to better comprehend the scope of these challenges.

Interview Summaries

A total of 26 personal interviews with airport employees, local pilots, and board members from ACAT and TTAD were conducted by three Convergent Performance personnel. Interview questions covered eight topics: *Culture*, *Risk Management*, *Compliance*, *Training*, *Safety*, *SMS*, *Operations*, and *Communication*.

Three primary demographic groups were intentionally identified in order to obtain a cross-section of perspectives, responsibilities, and experience, and they were *Management*, *Workforce*, and *Pilot/Owner/Operator*. Each group was asked a set of ten standardized questions (**Appendix 04**) intended to cover the eight topics, however open discussion on an array of topics was welcomed and exploited. The method of one-on-one interviews followed a sequence of introduction, explanation of intent and questions, and Q&A discussion, which lasted approximately 45-60 minutes, on average. Two interviews were conducted via phone. A composite analysis of all answers was done in order to assess the common responses and outlier responses, summarized below.

Management Interview Questions and Summarized Responses

1. In one sentence, tell me what you believe the safety philosophy to be here.

   Synopsis of responses: Overall, management and supervisors consistently responded that they consciously attempt to foster a positive safety culture and prioritize safety for employees, airport users, and the community.

2. How much safety data do you get, and through what channels? What is done with this data once collected?

   Synopsis of responses: Current data collection is informal and not policy-driven. The data received is evaluated informally, without a systemic means for quantitative or qualitative analysis to create trend data for predictive safety, and not assigned for follow up to remediate preventable risk.

3. How is pertinent technical and regulatory information accessed by personnel? How do you ensure that this documentation and information is in line with the most current regulations, standards, and exemptions?

   Synopsis of responses: Many felt unsure of how to access all relevant guidance. The pending iSMS program will enable direct access to key guidance documents for all workers.

4. What kind of emergency preparedness training is provided?

   Synopsis of responses: Emergency preparedness training is not codified nor practiced routinely, which has led to emergency response issues in the past. The need for established roles/responsibilities, practiced events, and rules of engagement are desired by many managers.

5. Where are you constrained by resources in your safety program? What is the first thing you would do if you had more?

Synopsis of responses: Overall perception is that the safety program is well resourced financially, but not aligned effectively under the General Manager's office. Desire is to allow the safety position enough autonomy to allow a respected unbiased assessment for all operations. Community concerns and TTAD initiatives must be balanced with airport safety, and politics should never be allowed to degrade safety parameters or initiatives.

6. How would you summarize your safety philosophy and what are your expectations from your company's current SMS?

   Synopsis of responses: A very positive safety philosophy and resulting culture. A new promotion strategy will embolden this.

7. Tell me of a time when safety margins were eroded. What caused it to happen?

   Synopsis of responses: Safety margins are eroded and diminished on high-tempo operation weeks/weekends, due to increased activity and limited personnel. Adverse weather negatively impacts pilots' safety margins when risk is mismanaged, and snow plow operations are inherently dangerous due to infrequent training, late/long hours, and operational pressures.

8. What safety-related communication processes or methods are in place within your organization? How do you ensure safety objectives and goals are made aware to all employees?

   Synopsis of responses: No formal communication plan or process currently exists. Word-of-mouth is the standard procedure, which is not efficient. There may be too much emphasis on flight safety and not enough on ground safety.

9. If you were the "boss" for a day, what would you change in terms of safety?

   Synopsis of responses: Give the safety position more autonomy and report directly to the General Manager. Balance workforce with increased workload during peak season/weekends (i.e. schedule and/or hire more people). Eliminate politics of TTAD from safety initiatives.

10. Assuming you have an accident here this year, what will it be and what will cause it?

    Synopsis of responses: Common responses included pilot error, AOA incursion by vehicle or pedestrian, and busy weeks/weekends without established procedures to mitigate risks. In any question of this sort, it is important to comprehend that what was NOT mentioned is often a greater risk than what is currently on the radar screen. The implementation of the SMS will allow managers to drive deeper and improve awareness of lesser-known risk factors.

Workforce Interview Questions and Summarized Responses

1. On a scale of 1-10—1 being not committed, and 10 being daily dedication—how committed is your management to safety? Why?

   Synopsis of responses: Average rating 8.85 of 10. Workforce views management as fully committed to safety and the "open-door" policy is the pinnacle aspect of this perception.

Safety program has improved dramatically and there is consistent verbal communication on the subject. Current proactive effort under this contract is highly recognized as positive.

2. Has there ever been a safety-related or quality matter that you felt should be brought to the attention of management? What is your role in the RM process? What response did you receive from management?

   Synopsis of responses: A majority of interviewees indicated they had identified a safety issue, and most had brought it to the attention of management. Most also perceived the process as informal and were concerned about the closed-loop communication aspect. Many had witnessed their efforts come to fruition via policy or procedure change, but it was communicated informally and therefore not effectively inclusive of all employees. Most employees understand their role in the RM process as the eyes and ears of management, however a comprehensive understanding of the entire RM process was lacking.

3. On a scale of 1-10—1 being never, and 10 being quite frequently—how often do people violate policies and procedures around here? Why?

   Synopsis of responses: Average rating 2.0 of 10. Majority of interviewees have experienced a strong habit of compliance by KTRK employees. References of breaches of compliance deal with customer pressure while servicing aircraft and/or customers. The AOA is a major concern relative to vehicle and pedestrian traffic. Specifically, many have witnessed events of vehicles speeding within the AOA and close calls with aircraft.

4. How often is safety training available to you and other employees? What types of safety training have you received while working here? What about training for new employees, and how soon after employment is it delivered?

   Synopsis of responses: The consensus is that training is available and resourced when requested. Some types of specialized training at offsite locations have been attended by employees. Other types of training include OSHA-type training, such as fire extinguisher, defibrillator training, and operational training (aircraft fueling, snow plow operations, etc.). There is concern of informal training records and recurrent training intended to update initial training. A predominant concern involves the UNICOM operations, associated training provided, and standards of qualifications. “On-boarding” training for new employees is appreciated and valuable, yet it is not standardized and is lacking objectives.

5. What are your roles and responsibilities with respect to safety? How are/were you informed of this?

   Synopsis of responses: The majority of interviewees responded with a positive perspective of the safety culture and program in place at KTRK, however, they see their role as “passive, informal, eyes-ears of management, etc.” The informal safety reporting process and policies in place, coupled with an informal or lacking safety orientation for new workers, has created a placid approach by the workforce. Many interviewees rely on

Mike Barrett to "run" the safety program. Although this is a defined job description responsibility, there is an inherent responsibility of all workers at KTRK to be actively involved in safety and risk management.

6. Describe your training with regards to the airport's current SMS.

   Synopsis of responses: It's predictable that there has been limited training in the current SMS program, however, the delivery and deployment of the iSMS program in late June will inform, educate, and train the workforce mass to a level of full comprehension and daily interaction with the program. Consistent responses alluded that Mike Barrett and Kevin Smith run the current informal program.

7. Under what circumstances have you seen margins of safety eroded in order to meet operational requirements?

   Synopsis of responses: An overwhelming majority of interviewees stated they "have not seen this." Incidents that were cited deal with lack of PPE when required, and (unintentional) breaches of operational safety in UNICOM, due to lack of experience. All interviewees commented on the improved safety culture under the management of Kevin Smith and guidance of Hardy Bullock. The proactive strategy to improve that culture (i.e. SMS contract) is widely recognized and appreciated by a majority of workers.

8. On a scale of 1-10—1 being intimidated to inaction, and 10 being very comfortable—how comfortable do you feel communicating potential hazards or reporting incidents, regardless of fault? Why? How have you/would you report such information?

   Synopsis of responses: Average rating of 9.5 of 10. This overwhelming positive response directly reflects the composite responses on previous questions pertaining to KTRK safety culture and positive promotion of safety from Kevin Smith and other managers.

   Note: this response contrasts the survey results of the "visiting owners/operators/pilots," who are not as willing to address safety issues and/or approach an apparent/legitimate breach of safety at KTRK.

9. If you were the "boss" for a day, what would you change in terms of safety?

   Synopsis of responses: There are four primary consensus responses:

   - Improve AOA/ramp security
   - Improve training for UNICOM workers who have little to no aviation backgrounds
   - Formalize communications between management and workforce, shift to shift, and radio calls for UNICOM…all via standards and policies
   - Not allow TTAD Board to negatively impact safety with "political" ambitions/initiatives

10. Assuming you have an accident here this year, what will it be and what will cause it?

    Synopsis of responses: A lengthy list (not in any particular order), but a consistent set of responses (sometimes more than one input from each interviewee):

    - Weather conditions to include IMC or high DA
    - Construction hazards

- Hand tools or machinery
- Refueling tasks
- Pilot error
- UNICOM miscommunications
- Snow removal operations
- Minimum manpower periods (i.e. night)
- Unofficial vehicles operating in AOA

Pilot/Owner/Operator Questions and Summarized Answers

1. As a pilot, owner, operator, do you have confidence in the safety program at KTRK? If not, what are some areas of concern?

   Synopsis of responses: All interviewees stated a high level of confidence in safety program at KTRK, to include management. Areas of concern include:

   - Naïve pilots unware of geographical/environmental hazards at KTRK
   - Density altitude awareness in relation to pre-flight planning
   - Traffic pattern stalls associated with base to final on Rwy 29
   - Noise abatement procedures creeping on margins of safety, in order to placate to a minority of community who are annoyed by apparent aircraft noise

2. Are adequate information resources available to operate safely in and around KTRK? If not, what are some areas of concern?

   Synopsis of responses: Overwhelming response is "yes." Accolades are given to enhanced UNICOM and proactive strategy to influence the local flying environment with situational awareness enhancing efforts and information. However, some concerns cite holiday weeks/weekends with high volume traffic, lack of adherence to aircraft chocking procedures, and AOA security.

3. How do you communicate safety concerns regarding KTRK operations to airport workers and/or management?

   Synopsis of responses: Due to lack of a formal process of reporting safety concerns, the varied responses included:

   - Call UNICOM
   - Call Hardy Bullock
   - Call Kevin Smith

   Note: This set of replies mimics those cited in the surveys and other interviews. However, the formal iSMS will present a formal reporting process and emphasize the *primary* conduit of communications through Mike Barrett.

4. Do you employ risk management decision-making in your planning phase of operations?

   Synopsis of responses: Yes, however risk management is not a widely understood safety strategy tool.

5. Are adequate facility and airport architecture assets available to operate safely (i.e. AOA environment, UNICOM, procedures, airspace)?

   Synopsis of responses: Yes. More hangar space is desired, along with a heated hangar to mitigate winter weather effects of pre-flight operations.

6. Has there ever been a ground or flight safety related matter that you felt should be brought to the attention of airport management? What mode of communication did you use? How did management respond to this?

   Synopsis of responses: Most interviewees referenced previous discussion in relation to Question 3. The informal process allowed for lack of feedback on management decision and/or actions in response to initial concern.

   Note: This set of replies mimics those cited in the surveys and other interviews. However, the formal iSMS will present a formal reporting process and ensure a closed-loop communications process.

7. What is your role in the safety program of KTRK? Do you have a role in the SMS program?

   Synopsis of responses: Interviewees did not identify a formal role, but feel compelled to set the local standard and act as extension of KTRK management, TTAD Board, and community to influence safe operations. While this is an admirable attitude, more structured roles and responsibilities should be developed and communicated.

8. Are there operational concerns which have been communicated to management, but have yet to be resolved? What is the timeframe?

   Synopsis of responses: None that are not being currently addressed.

9. If you were the "boss" for a day, what would you change in terms of safety at KTRK?

   Synopsis of responses: There are four primary consensus responses (not in a particular order):

   - Add more hangars; high-altitude UV impacts composite aircraft parts
   - Add more space to maintenance building; currently equipment is wedged in at night with no safe areas to move around
   - Develop a local pilot mentor program; incentivize safety meetings
   - Promote safety initiatives at fly-in's and annual airshow

10. In respect to the airport operation, where do you see the next incident/accident occurring?

    Synopsis of responses: A lengthy but consistent set of responses (sometimes more than one input from each interviewee):

    - Airspace de-confliction issues
    - Unofficial vehicles in AOA and hangar areas
    - Poor/incorrect radio communications by pilots
    - Rwy 20 approach end operations
    - OEI scenario during departure from Rwy 11 or 20

- Rwy 29 departure procedures; climbing 270° turn over field vs. flying through canyon gap…nowhere to land to NW
- Hangar lease procedures are "loosely" followed and breaches of rules put everyone at risk

Once again, it is important to note that this list constitutes things that people are ALREADY aware of. It is likely that there are both additional latent hazards that have gone unreported or unidentified in this list.

In addition to the document review, survey data, and interviews, we conducted Subject Matter Expert observations to deepen our understanding of the KTRK operational environment.

SME Observations

The opportunity for Convergent Performance personnel to observe operations and support functions at KTRK proved worthwhile and extremely valuable while subsequently assessing interview and survey data. The interactions with KTRK personnel, local users, and an observation flight closed the loop on a holistic perspective. Overall, KTRK has a tremendous foundation of safety established and in operational use. The foundation is ripe for expansion to the next level of risk mitigation, communication, and accountability. The following recommendations are consistent with this approach and the related Findings. Of note, none of these observations are directly related to any specific previous mishaps at KTRK. However, the recommendations may overlap with NTSB or local management citations and discussions related to previous mishaps. Overall, there were not any observations during the April 2015 visit which prompted an elevated concern requiring immediate attention in order to prevent an impending mishap.

1. **Private and/or unofficial vehicle access to the AOA was not restricted via physical barriers**. The driving placard citing AOA vehicle guidelines is dark grey/black and blends in with most dashboards.
2. **The self-serve refueling station should have an accessible checklist citing equipment use, hazards, and expectations/requirements**. Use of Personal Protection Equipment should be mandatory per policy and signage.
3. **The ERCP should delineate roles and responsibilities to individual duty titles/positions (and alternates) in response to all types of emergencies listed in the ERCP**. This will prevent confusion and unofficial bystander roles during a response. Recommend Quick Reaction Checklists to accompany the ERCP as supplements, and have specific focus on different types of incidents/mishaps. The ERCP will be fully evaluated and assessed during the summer 2015 Safety Drill Tabletop Exercise.
4. **As soon as practical, a Risk Management training program should be delivered to all employees and tenant lease operations, and established as a routine step in daily activities on the strategic and direct operations level**. The consistent practices of Risk Management are isolated to top management with a comprehensive understanding, but the tools are holistically left untrained at the worker level, to include the tenant lease operations. A portion of this effort will be accomplished with the iSMS delivery.

5. An indirect observation of the identified risks (within RM) in place at KTRK and the related controls included the "Enhanced" UNICOM operation. **The best option for improvement in a new but established operation is standardization and training**. With an approved assessment of the previous contract service to evaluate the UNICOM operation, Convergent Performance could potentially assist with this recommendation.
6. Another indirect observation involves the hazards associated with pattern operations and related historical mishaps on runways 29 and 20. Airport management has previously identified these hazards and taken steps to mitigate the threat and educate pilots of the threat. **An even more robust educational effort through informative communication modes (web page, on-site reminders, AF/D, flight planning tools, etc.) will have an immediate impact short of altering the pattern operations**. A future assessment of airspace operations is planned for KTRK under an RFP, and a focus on weather effects and current transitions from IFR to VFR flight should be accomplished.
7. The "open ramp" status at KTRK is commensurate with the flight operation frequency, employee oversight, and regulatory guidance. A security threat is not prevalent, but a hazard of unofficial (non-airport or tenant lease operator) vehicle interference or collision with an aircraft is prevalent. **More effective control measures of access and training/guidance for those who do access the AOA will mitigate this hazard**.

With the data collection and initial analysis completed, we will now discuss the integration of the KTRK challenge through the lens of safety science.

Discussion and Recommendations

Discussion

This section is designed to provide the reader with the safety science background upon which our recommendations are based. When evaluating observation, survey, and interview data while compiling this report, the following risk management tools were referenced: Heinrich's Pyramid (Figure 3), the Threat and Opportunity graph (Figure 2), and standard risk management procedure. These tools are available within the report and KTRK personnel are encouraged to utilize them in future efforts. Each Finding is associated with an assessed risk of Low, Medium, and/or High, and is accompanied by a related symbol:

Low ♦ Medium ♦ High ♦

Threat and Opportunity Window

The goal of the SMS will be to identify risks earlier, to allow for greater time and more options for improving the margins of safety, or to stop unsafe practices.

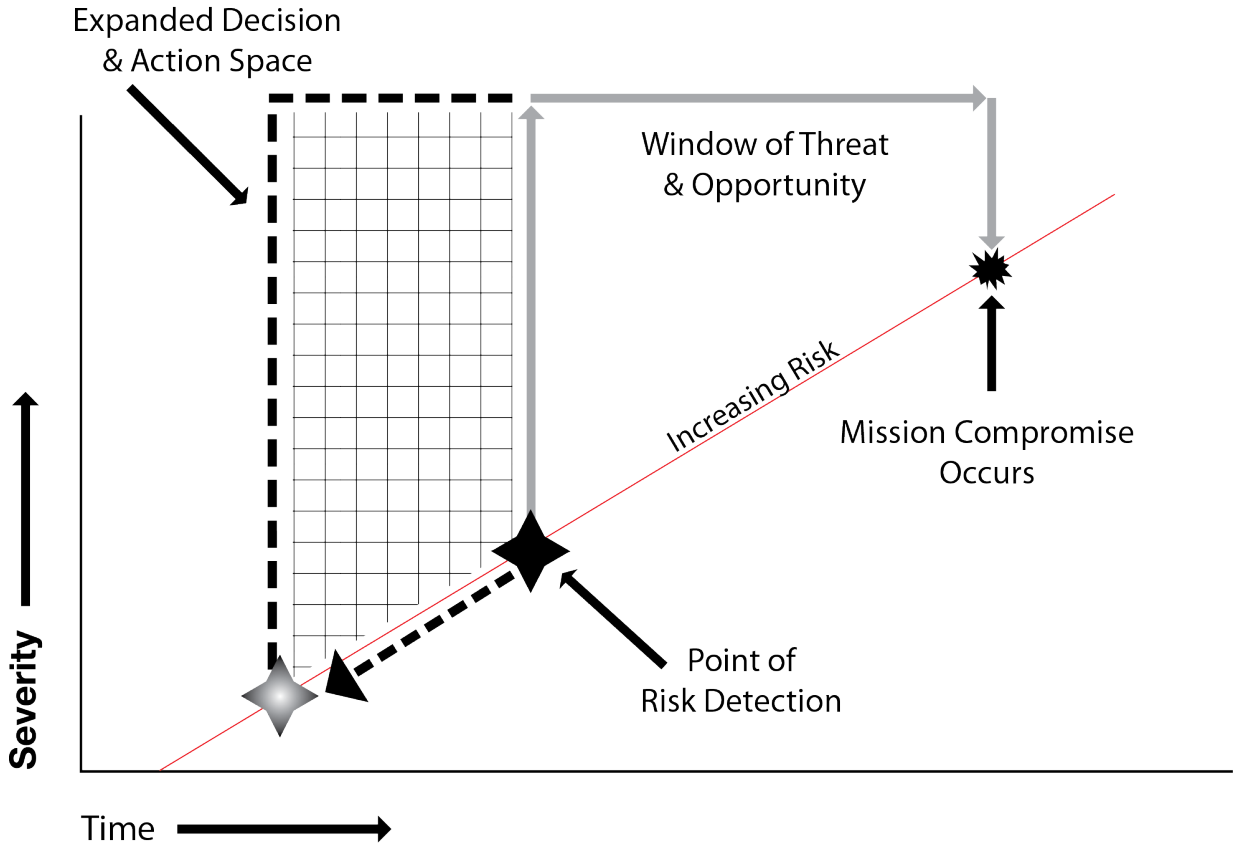

Figure 2 – Window of Threat and Opportunity

As illustrated in the figure above, by moving the point of risk detection to the left, the SMS process is able to maintain greater margins of safety.

Heinrich's Pyramid

The overall goal of increased safety is also enhanced by identifying more at-risk behaviors, to allow safety analysts to "attack the supply lines" of incidents, injuries, or major incidents. This process has been in use in industrial safety for over 80 years.

Figure 3 – Heinrich's Pyramid

In his 1931 book "Industrial Accident Prevention, A Scientific Approach", Herbert Heinrich put forward the following concept that became known as Heinrich's Law: for every 300 unsafe acts there are minor injuries and one major injury. The fundamentals of upper management visibility in safety, middle management involvement, focused supervisory performance, hourly employee active involvement, and training that both teaches and reinforces these basics of excellence, has significantly reduced injuries. The approach has direct similarities to the six sigma process of continuous improvement (define, measure, act, improve, control).

Here's how it applies to safety:

1. Define the correct behaviors that eliminate unsafe acts and injuries;
2. Train all personnel in these behaviors;
3. Measure that personnel are indeed doing these correct behaviors; and
4. Reward their accomplishments of these correct behaviors.

By eliminating dangerous behaviors, there are never enough dangerous actions to get us to a more serious level of safety injuries in Heinrich's pyramid. This correlates to an organizational culture change that does not accept Normalization of Deviance, and where noncompliance is not a factor. The key is to not focus on compliance, or reward "acceptable injury levels/goals." Instead, concentrate on the fundamentals that eliminate the activities/behaviors that move us up the Heinrich inevitability triangle.

These safety science insights now set the stage for our major recommendations.

Major Findings and Recommendations

Finding One

Safety Coordinator is aligned under and reports to Director of Aviation. This chain of command dynamic poses barriers of communications to other airport functions, and dilutes implied delegation of authority and autonomy to the primary safety representative in the organization. This organizational alignment is not in accordance with industry and safety program standards or best practices.

Risk: Low 

Recommendation: Realign position of Safety Coordinator directly under position of General Manager. Rename position as Director of Safety. Re-establish roles and responsibilities of position with a focus on 1) implied delegation of authority from General Manager (i.e. acting directly on behalf of G.M.), 2) autonomy of position to corroborate and "evaluate" all aspects of safety and risk within any airport or related function, and 3) actively promote new concept and strategy to all involved through policy, and verbal and written communication. The promotion aspect must be intentional and strategically communicated through multiple efforts to enforce the reality that when the Director of Safety (acting in that capacity) is present, he is acting directly on behalf of the G.M. Techniques include: rename duty position as stated above, provide visible garment and accoutrements (i.e. hat or jacket, and nametag identifying individual as "KTRK Safety." Also, a magnetic placard for any vehicle driven on/around airport by Director of Safety (acting in that capacity) will provide "show of presence" of KTRK Safety Office.

Discussion: Although a healthy and synergistic relationship within the KTRK organization was observed by Convergent Performance personnel, the alignment within the organization should not be personality based, but process-driven. Overtime, personal will change, and reliance on relationships is not as effective nor efficient as reliance on set processes. If the title "Director" has contractual, HR, or salary implications and is not conducive to organizational policies, alternative titles such as "Chief of Safety," "Safety Manager," or "Safety Officer" are options and still strategically more impactful than "Safety Coordinator." Consideration must be given to eliminating additional duties for Safety Office representative, or hiring and additional safety representative.

Finding Two

The online survey, interview, and observation results indicate a marginally effective and inefficient strategy and modes of communication pertaining to safety. This includes passive and active intentions to communicate safety policy, safety concerns, closed-loop hazard/mishap reporting procedures, and risk measures.

Risk: Medium 

Recommendation: Utilizing the pending iSMS, implement an intentional safety communications strategy to address standard SMS pillars (i.e. policy, objectives, RM, promotion, etc.) and the organizational dynamics of operations at KTRK. In order to put safety and risk management at

the forefront of all activities of operations and support functions at KTRK, the communicated emphasis of this strategy must 1) start with the G.M. and TTAD Board and flow down to all levels of supervision, 2) become a part of the operational and support function lexicon, and 3) ensure 100% contact with all employees and as many airport users as possible. This communication strategy will directly support the lines of effort to elevate the culture of safety at KTRK. The G.M. should evaluate the airport safety policy and supporting objectives on an annual basis, and republish them annually.

Discussion: The informal communication methods currently used are not accounting for shift work dynamics, absences, dislocated tenant organizations, or verbal misinterpretations of the message. The iSMS will enable more efficient and effective communication strategy intentions, and ensure accountability of receipt for intended message receivers.

Finding Three

The airport does not have a perimeter security fence preventing unhindered access to the airport property or specifically the AOA, and vehicle and pedestrian gates are intentionally left open, allowing relatively un-vetted and physically unhindered access to the AOA. The use of unofficial/POVs within the AOA is not prohibited, but managed through a training program backed up with an in-vehicle placard citing guidelines and expectations. See *discussion* section for comprehensive TSA information and guidelines as well as industry best practices.

Risk: Medium  to High 

Recommendations:

1. Conduct a security and vulnerability assessment in accordance with the TSA A-001 publication listed below in the *discussion* section for this finding. If a perimeter fence is not feasible or implemented, establish a deterrence tactic using signage to identify and inform “trespassers” of 1) the airport area perimeter (in its entirety, but specifically on the non-inhabited sides of the property), 2) alert “trespassers” of the dangers associated within the area perimeter (i.e. AOA), and 3) the restrictions of going beyond the demarcated perimeter without permission.
2. Prevent physically unhindered vehicle (unofficial) access through the vehicle gates, specifically those providing direct access to the AOA. This can be accomplished through a keypad system operating the gate(s), or an access card. A passive display of deterrence should include 1) signage at all gates informing entrants of access restrictions, 2) hazards associated within the area perimeter (i.e. AOA), and 3) the restrictions of going beyond the demarcated perimeter without permission.

   Continue with requirement for drivers to contact UNICOM for access at the vehicle gate adjacent to the terminal building and AOA. Consideration should be given to stricter requirements during periods of high volume traffic and max capacity aircraft parking/operations (i.e. holiday weeks/weekends).
3. Expand current airport driving program to 1) reassess/validate training program and related objectives, 2) evaluate driving program with bi-annual refresher training,

assessment (written test via iSMS) and periodic review via self-inspection or self-assessment program (see **Finding Seven**). Establish violations and consequences of driving operations to include airport employees, contractors, commercial drivers, and visitors. All training and records of violations should be kept on file (i.e. iSMS) for accountability and liability protections.

4. Redesign current "Safety Guidelines for Ramp Driving." Intent of placard is to identify that vehicles/drivers have placard in possession and displayed on dashboard, and provide quick reference to rules and expectations while operating a vehicle on the airport, specifically within the AOA. Current placard color is black and blends in with most dashboards, and therefore is not readily visible from a distance or elevated vantage point of UNICOM. Change color of placard to a brighter color for at-distance visible recognition (i.e. pink, yellow, bright red). Also, the statement at the top of the placard emphasizes compliance by "requesting" adherence. The statement should be more directive in nature and state "requires" adherence and compliance. This requirement is backed up by the authority to deny a driver vehicle/use access to the AOA. Therefore, the burden of compliance is on the driver who is informed of required procedures versus obliging a request by airport management.

5. Rewrite "Safety Guidelines for Ramp Driving" content. The statements clearly identify guidelines for "all drivers," yet content is focused on taxi, limo, or unfamiliar driver. Prioritize written content for generic driver on the airport and within the AOA by starting with the most important information/directives (i.e. right-of-way rules, speed limits, use of lights at night). Continue on placard with taxi, limo, or unfamiliar driver section citing specific information/directives related to their purpose and activities within the AOA. An AOA map should be depicted on placard highlighting approved and restricted areas for unofficial vehicles.

   Specific consideration should be given to reducing the speed limit currently published (i.e. 20 mph). Industry best practices utilize the following speed limits:

   - AOA (aircraft parking ramps, taxiways, runways) – 15 mph
   - Within 50 ft. of an aircraft – 5 mph
   - Vehicle parking area – 5 mph
   - Inclement weather/limited visibility – 10 mph

   Discussion: The risks associated with relatively un-vetted and physically unhindered vehicle access to the AOA are assessed to be Medium to High Risk. This assessment uses worst case variables such as unfamiliar/inattentive drivers and/or high density/volume AOA activity with aircraft parking and operations.

The resulting factors associated with vehicles colliding with aircraft are not solely based on damage, collateral damage, and potential fatalities, but also the monetary implications associated with repairs, aircraft downtime, and potential lawsuits. However the risk matrix (**Figure 4**) only assesses the potential of significant damage/injury or fatality. Based on these assumptions:

- The risk is categorized as **medium** when either the probability or consequence is greater than 0.6, OR the probability/consequence combination is greater than 0.2 and greater than 0.4.
- Greater than 0.5 (medium risk) on both scales is the linear merging point of medium and high risk (hatched center square).

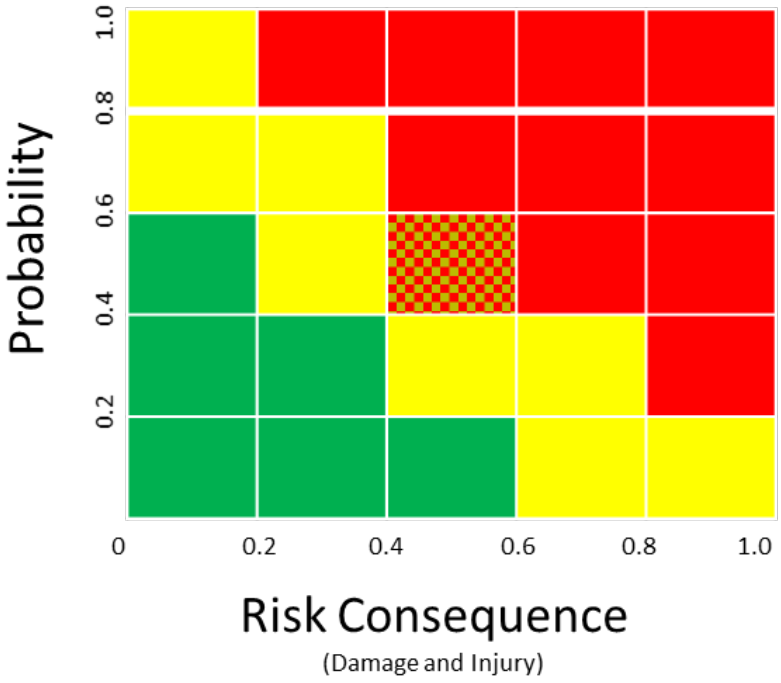

Figure 4 – Risk Matrix

So what does this mean? KTRK should conduct a qualitative analysis of vehicle vs aircraft incidents relative to time of day, day of week, time of year, weather conditions, volume of vehicles, and volume plus types of aircraft. Based on those variables, subjectively plot each scenario on the matrix (**Figure 4**) to identify when operational risks are low, medium, and high, and under what circumstances the level transitions up or down. This will allow a Risk Impact Assessment, and arm decision makers to assign a risk level on a periodic basis, followed by related guidance on mitigation steps. All involved must know the current level.

In May 2004, TSA published *Information Publication* A-001, Security Guidelines for General Aviation Airports ("Guidelines"). The Guidelines provide GA airport owners,

sponsors, and operators a set of security best practices and a method for determining when and where security enhancements would be appropriate. The Guidelines do not contain regulatory language, and do not require that GA airports meet the same security requirements as commercial airports. They are not mandatory, and do not establish any criteria that must be met in order to qualify for Federal funds.

The Guidelines provide an "Airport Characteristics Measurement Tool" (ACMT) that can be used to assess security risks. The ACMT lists airport characteristics that potentially affect airport security in four major categories: (1) Airport Location; (2) Based Aircraft; (3) Runways; and (4) Operations. They also contain a list of security enhancements that can be implemented depending on the ACMT results. Finally, the Guidelines include a list of recommendations for GA airport managers and operators to use to enhance airport security in six key areas: (1) Personnel; (2) Aircraft; (3) Airports and Facilities; (4) Surveillance; (5) Security Procedures; and (6) Communications and Specialty Operations.

Because each GA airport is unique, owners, managers, and operators must assess security risks and tailor appropriate security measures to their particular environment. The ability of GA airports to implement security measures varies. Unlike most commercial service airports, many GA airports are not self-sustaining. Therefore, the decision to implement security measures must include consideration of reasonableness and economic feasibility.[1]

Finding Four

Although informal Risk Management is practiced at KTRK, there is not a formalized Risk Management Program with standard tools and techniques, let alone comprehensive training for all employees. Comprehensive understand and training seems to be isolated to top level managers and the safety office/representative.

Risk: Medium ◆ to High ◆

Recommendation: Implement a comprehensive Risk Management Program to include initial RM concept training for employees, routine application of tools and techniques, and policy-based standards requiring risk assessments in all functions of airport operations.

All operations, support functions, tenant entities, and users should be influenced via policy and standard procedures to capably employ RM on a daily basis. Each function's daily RM assessment and associated risk level should be included in an overall KTRK risk level (i.e. Operations – Med, Support – High, STI – Med, Weather – High = KTRK – High Overall). These efforts will be codified in the iSMS, but should be developed prior to software delivery and training.

A strategy to communicate personal accountability (i.e. everyone's role) should be deployed by airport management. A common industry practice is to empower any and all employees (and trusted agents) to immediately cease operations in a safe manner when a hazard is identified or is occurring. Common command phases utilized are "knock it off" or "safety stop."

[1] http://www.aviationairportdevelopmentlaw.com/2010/07/articles/airports-3/general-aviation-airport-security/

Address the currently noted High-Risk issue of VFR pattern operations associated with Base to Final turns associated with Runway 29. This portion of the pattern has historically been High-Risk and is directly associated with multiple traffic pattern stall-based mishaps and fatalities. A bold approach must be taken to remedy this issue through pilot education, potential alternative pattern procedures, and a hazard communication strategy.

Address the currently noted High-Risk issue of overloaded aircraft attempting to operate and fly at KTRK during high DA periods. This widely-known scenario is directly associated with multiple departure-based mishaps and fatalities. A bold approach must be taken to remedy this issue through pilot education, potential alternative pattern procedures, and a hazard communication strategy.

Address the currently noted High-Risk issue of operations utilizing Runway 20, which poses significant airborne and ground hazards at the approach end and departure end (if taking off or executing a go-around). This portion of the pattern has historically been High-Risk and is directly associated with multiple traffic pattern-based mishaps and fatalities. A bold approach must be taken to remedy this issue through pilot education, potential alternative pattern procedures, and a hazard communication strategy.

Discussion: KTRK airport management, directors, and the safety representative employ the principles of RM in various levels of effort, and do so successfully. However, the informal strategic approach has delineated the RM strategy to a "management-only" responsibility, and has left the majority of the workforce and airport users inefficiently trained on the subject/strategy. According to the survey and interview data, a majority of employees isolate their role in RM to "reporting hazards" only. The implementation of the iSMS will force a transition from an informal to a formalized RM program.

Risk monitoring is the "heavy lift" effort within the Risk Management process. There are many tools and techniques available to mimic. The principles of the monitoring program are to prioritize risks, prioritize resources against the qualitative and quantitative analysis, assess the status of mitigating actions (i.e. are they working), and observe risk triggers.

Finding Five

Safety promotion is a primary component of a Safety Management System, and KTRK does successfully promote safety as evidenced by overwhelmingly positive survey and interview data, as well as SME observations. However, there are industry best practices not currently utilized at KTRK which will enhance this effort. Also, the objective and related strategy to *elevate the bar of excellence* and *amplify the safety culture* requires a more focused effort on safety promotion.

Risk: Low 

Recommendation: In order to meet the objectives stated above, the safety strategies and procedures at KTRK must become standardized with intended outcomes (see **Finding Six** below for techniques). The recommendations in **Finding One** will enable this and allow for continuity. See **Appendix 06** for marketing posters. The recommendations associated with this are:

1. Market a fresh strategy of "safety" at KTRK utilizing the strategic message:

See Something Unsafe? Act!

Stop it. Report it. Prevent it.

The intent behind the "***See Something Unsafe? Act!"*** message is to delegate and encourage accountability of safety to anyone who is employed by, contracts with, or operates at KTRK. This intent coupled with the ease of access to the pending iSMS and its capabilities will inherently put a greater focus on not only safe operations and risk mitigation, but will highlight unsafe practices. The action term **Stop it** emboldens personal authority to act and prevent dangerous/risky behavior(s) and/or situations from continuing. The intent is for an eventual culture of accountability to incentivize this action; however, the General Manager and Safety Representative should consider incentive programs (see Number 3 below). The action term **Report It** encourages personnel to not overlook potential or blatant hazards and exploit the reporting system available in the iSMS. However, personnel must be educated and trained on the accessibility and reporting options within the iSMS. Although the iSMS is the preferred junction of reporting, all modes of communicating potential or blatant hazards should remain available. The action term **Prevent it** utilizes the solutions provided by an enhanced risk management program.

2. Incorporate new "safety" marketing strategy into all communication opportunities to include:
   - Correspondence (written, email, etc.) signature blocks
   - Airport briefings
   - TTAD and ACAT meetings and associated charter strategies
   - All tenant users (STI, EMS helo, maintenance, etc.) and support resources (Fire Dept., Police Dept., Sheriff's Dept., etc.)
   - Communications (active) via informational meetings
   - Communications (passive) via posters, iSMS messaging, website
   - Airshow and open house events
   - AOA Driving Guidelines placard
3. Establish and standardize new "safety" strategy with formalized policy memoranda and subsequent administrative and/or safety meetings immediately following publication of memo.
4. Considering the hazard threat of uninformed pilots (i.e. high DA, mountainous terrain, adverse weather, etc.), an additional marketing phrase to catch in-transit pilots' attention is **"You Ain't At Sea Level Anymore."** While communicating this message, amplify the local environmental and geographical effects on take-off and climb capabilities of aircraft. This will complement the current communication strategy of highlighting the hazards of high DA and surrounding mountainous terrain.

Discussion: A personal and professional behavior expectation is a challenge for supervision to employ. People want the "why" behind these types of strategies. According to survey and interview data, as well as SME observations, the current safety communication strategy at KTRK is too informal to be completely effective. Thus, the message is not getting to the entire intended audience due to informalities, and the message itself is not resonating with personnel beyond the airport employee audience. The dynamics of operations at KTRK are too widespread for supervision and safety personnel to solely maintain effective observations of all functions and identify all potential dangerous/risky behaviors and hazardous situations. Therefore, the effective exploitation of vigilance by all personnel associated with KTRK will amplify the onset of hazard awareness to an exponential degree.

This strategy is a foundational effort to support the broader strategies behind an enhanced Risk Management Process (**Finding Four**) and Heinrich's Pyramid theory (**Figure 3**). The more frequent identification of hazards will enable the mitigation of the more numerous "near miss" incidents. Therefore, the active, and more importantly, latent failures leading to major/fatal incidents are mitigated or eliminated.

Finding Six

Standardize all training efforts at KTRK with a single training strategy to ensure the intended purpose is met with supporting objectives and desired outcomes. A high percentage of survey and interview data indicates an informal and/or inconsistent training strategy, which has allowed for training gaps in operations and support functions. This capability void is a latent failure which may eventually be a contributing factor in a near-miss, or worse, a mishap.

Risk: Low 

Recommendation: Integrate recommended training strategy into all local/in-house training programs, and develop refresher training timelines commensurate with activity, new techniques and/or guidance, and operational requirements. All training must be documented as required by federal guidance and/or General Manager's policy. The pending iSMS program allows for automation of these objectives with personnel oversight.

1. Specific operational areas of concern noted at KTRK requiring standardized training and refresher training include:
    - Enhanced UNICOM
    - On-boarding of new employees and contractors
    - Incident response
    - Snow plow equipment
    - AOA driving for employees, contractors, and visitors
2. Assess all current training programs for, and incorporate into future training programs, the following training strategy. Describe in detail *the purpose* of the training itself and the *desired outcome* (i.e. fully trained snow plow driver capable of operating unsupervised). Produce *set objectives* in relation to the training which can be assessed post-training (i.e. were objectives met?). Evaluate any briefings, documentation, and assessment material

(i.e. testing, qualification criteria) to ensure 1) the material is instructed/demonstrated in a standard way to all training recipients, and 2) the material supports the set objectives.

3. Produce training guides for all applicable training programs. Access to guides and administrative oversight will be via the pending iSMS.
4. Establish training schedule cycles for refresher training and document as needed to highlight upcoming requirements.

Discussion: The General Manager and the supervisory staff do an outstanding job of encouraging training opportunities and resourcing them. The primary goal of any supervisor is to ensure his/her subordinates are equipped, trained, and informed. The survey and interview data indicates an overwhelming majority of employees are encouraged to seek training where a need is identified. This seems to be a positive morale aspect of employment at KTRK. The standardization of all training programs will introduce efficiencies and effectiveness where it is currently lacking.

Finding Seven

Safety Assessment efforts are not formalized in relation to Risk Management or evaluation of set standards or policies. Once Risk Management controls are identified and operational, the oversight authority (i.e. General Manager, Safety Representative, or delegated representatives) must ensure controls continue to be effective in a changing environment.

Risk: Low 

Recommendation: A Gap Analysis Strategy should be implemented to provide a strategic schedule of assessments/inspections of various areas of operations and support functions (see **Appendix 02**). The consistency of regulation, policy, and risk controls encourages behaviors of personal accountability and personal risk assessment. Therefore, a Gap Analysis should be based on predesigned Focus Areas with different degrees of examination. The GA template used by Convergent Performance is recommended for future use with the ability for edits based on General Manager priorities, perspective, and emphasis items (see **Appendix 03**).

The planning schedule (see **Appendix 02**) allows for in-house prioritized Focus Areas and creates a constant effort of assessment, without creating a burden on the workforce. The effort is broken down into self-assessments (SA) which are developed and used to ensure compliance within individual/functional areas of responsibility. The SA is not an in-depth evaluation, but an efficient look at current procedures, supporting documentation, and related training/qualifications. The second effort is the self-inspection (SI), which is a more in-depth evaluation for a specific Focus Area, within an area of responsibility which directly supports the requirements outlined in the GA Template. It essentially prepares the functional areas for the end-of-year GA which is inclusive of all operational and functional areas.

Discussion: A systematic approach to Risk Management Controls and compliance ensures a consistent level of effort throughout a 12-month period which avoids a build-up effort of "house-cleaning" in preparation for a traditional audit. The consistency also ensures regular evaluation

during peaks and troughs of operations and cyclic events (i.e. seasons, high operational tempo weeks/weekends, constructions, etc.).

CONCLUSION

There are abundant opportunities to improve the margins of safety at KTRK. This Gap Analysis and Safety Assessment provides one potential starting point for that effort. The key to success will require three specific actions by the KTRK management team.

1. First, an action plan with timelines, roles, and responsibilities should be created at the earliest opportunity.
2. Second, the program must be resourced to adequately attack these opportunities and tasks.
3. Finally, the KTRK management team must stay focused on the long-term strategy, while simultaneously reacting and managing emerging threats.

Thank you for the opportunity to review your program and we look forward to working with the KTRK team on the next steps towards a world-class safety program.

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APPENDICES

Appendix 01 – Quick Reference List of SME Observations, Findings and Recommendations

This table is meant to be a quick reference to review our observations, findings, and recommendations. Greater detail is provided in the SME Observations and Major Findings and Recommendations sections.

SME Observation/Finding	Recommendation
Observation One Private and/or unofficial vehicle access to the AOA was not restricted via physical barriers. The driving placard citing AOA vehicle guidelines is dark grey/black and blends in with most dashboards.	More effective control measures of access and training/guidance for those who do access the AOA and an update to the driving placard, will help mitigate this issue.
Observation Two The self-serve refueling station should have an accessible checklist citing equipment use, hazards, and expectations/requirements.	Use of Personal Protection Equipment should be mandatory per policy and signage.
Observation Three The ERCP should delineate roles and responsibilities to individual duty titles/positions (and alternates) in response to all types of emergencies listed in the ERCP. This will prevent confusion and unofficial bystander roles during a response.	Recommend Quick Reaction Checklists to accompany the ERCP as supplements, and have specific focus on different types of incidents/mishaps. The ERCP will be fully evaluated and assessed during the summer 2015 Safety Drill Tabletop Exercise.
Observation Four The consistent practices of Risk Management are isolated to top management with a comprehensive understanding, but the tools are holistically left untrained at the worker level, to include the tenant lease operations.	As soon as practical, a Risk Management training program should be delivered to all employees and tenant lease operations, and established as a routine step in daily activities on the strategic and direct operations level. A portion of this effort will be accomplished with the iSMS delivery.

SME Observation/Finding	Recommendation
Observation Five An indirect observation of the identified risks (within RM) in place at KTRK and the related controls included the "Enhanced" UNICOM operation.	The best option for improvement in a new but established operation is standardization and training. With an approved assessment of the previous contract service to evaluate the UNICOM operation, Convergent Performance could potentially assist with this recommendation.
Observation Six Another indirect observation involves the hazards associated with pattern operations and related historical mishaps on runways 29 and 20. Airport management has previously identified these hazards and taken steps to mitigate the threat and educate pilots of the threat.	An even more robust educational effort through informative communication modes (web page, on-site reminders, AF/D, flight planning tools, etc.) will have an immediate impact short of altering the pattern operations. A future assessment of airspace operations is planned for KTRK under an RFP, and a focus on weather effects and current transitions from IFR to VFR flight should be accomplished.
Observation Seven The "open ramp" status at KTRK is commensurate with the flight operation frequency, employee oversight, and regulatory guidance. A security threat is not prevalent, but a hazard of unofficial (non-airport or tenant lease operator) vehicle interference or collision with an aircraft is prevalent.	More effective control measures of access and training/guidance for those who do access the AOA will mitigate this hazard.
Finding One Safety Coordinator is aligned under and reports to Director of Aviation. This chain of command dynamic poses barriers of communications to other airport functions, and dilutes implied delegation of authority and autonomy to the primary safety representative in the organization. This organizational alignment is not in accordance with industry and safety program standards or best practices.	Realign position of Safety Coordinator directly under position of General Manager. Rename position as Director of Safety. Re-establish roles and responsibilities of position with a focus on 1) implied delegation of authority from General Manager (i.e. acting directly on behalf of G.M.), 2) autonomy of position to corroborate and "evaluate" all aspects of safety and risk within any airport or related function, and 3) actively promote new concept and strategy to all involved through policy, and verbal and written communication.

SME Observation/Finding	Recommendation
Finding Two The online survey, interview, and observation results indicate a marginally effective and inefficient strategy and modes of communication pertaining to safety. This includes passive and active intentions to communicate safety policy, safety concerns, closed-loop hazard/mishap reporting procedures, and risk measures.	Utilizing the pending iSMS, implement an intentional safety communications strategy to address standard SMS pillars (i.e. policy, objectives, RM, promotion, etc.) and the organizational dynamics of operations at KTRK. In order to put safety and risk management at the forefront of all activities of operations and support functions at KTRK, the communicated emphasis of this strategy must 1) start with the G.M. and TTAD Board and flow down to all levels of supervision, 2) become a part of the operational and support function lexicon, and 3) ensure 100% contact with all employees and as many airport users as possible.
Finding Three The airport does not have a perimeter security fence preventing unhindered access to the airport property or specifically the AOA, and vehicle and pedestrian gates are intentionally left open, allowing relatively un-vetted and physically unhindered access to the AOA. The use of unofficial/POVs within the AOA is not prohibited, but managed through a training program backed up with an in-vehicle placard citing guidelines and expectations. See *discussion* section for comprehensive TSA information and guidelines as well as industry best practices.	1. Conduct a security and vulnerability assessment in accordance with the TSA A-001 publication. 2. Prevent physically unhindered vehicle (unofficial) access through the vehicle gates, specifically those providing direct access to the AOA. 3. Expand current airport driving program to 1) reassess/validate training program and related objectives, 2) evaluate driving program with bi-annual refresher training, assessment (written test via iSMS) and periodic review via self-inspection or self-assessment program. 4. Redesign current “Safety Guidelines for Ramp Driving.” 5. Rewrite “Safety Guidelines for Ramp Driving” content.

SME Observation/Finding	Recommendation
Finding Four Although informal Risk Management is practiced at KTRK, there is not a formalized Risk Management Program with standard tools and techniques, let alone comprehensive training for all employees. Comprehensive understand and training seems to be isolated to top level managers and the safety office/representative.	Implement a comprehensive Risk Management Program to include initial RM concept training for employees, routine application of tools and techniques, and policy-based standards requiring risk assessments in all functions of airport operations.
Finding Five Safety promotion is a primary component of a Safety Management System, and KTRK does successfully promote safety as evidenced by overwhelmingly positive survey and interview data, as well as SME observations. However, there are industry best practices not currently utilized at KTRK which will enhance this effort. Also, the objective and related strategy to *elevate the bar of excellence* and *amplify the safety culture* requires a more focused effort on safety promotion.	In order to meet the objectives stated above, the safety strategies and procedures at KTRK must become standardized with intended outcomes. 1. Market a fresh strategy of "safety" at KTRK utilizing the strategic message: "**See Something Unsafe? Act! Stop it. Report it. Prevent it.**" 2. Incorporate new "safety" marketing strategy into all communication opportunities. 3. Establish and standardize new "safety" strategy with formalized policy memorandum and subsequent administrative and/or safety meetings immediately following publication of memo. 4. Considering the hazard threat of uninformed pilots (i.e. high DA, mountainous terrain, adverse weather, etc.), an additional marketing phrase to catch in-transit pilots' attention is **"You Ain't At Sea Level Anymore."**

SME Observation/Finding	Recommendation
Finding Six Standardize all training efforts at KTRK with a single training strategy to ensure the intended purpose is met with supporting objectives and desired outcomes. A high percentage of survey and interview data indicates an informal and/or inconsistent training strategy, which has allowed for training gaps in operations and support functions. This capability void is a latent failure which may eventually be a contributing factor in a near-miss, or worse, a mishap.	Integrate recommended training strategy into all local/in-house training programs, and develop refresher training timelines commensurate with activity, new techniques and/or guidance, and operational requirements. All training must be documented as required by federal guidance and/or General Manager's policy. 1. Specific operational areas of concern noted at KTRK requiring standardized training and refresher training include: • Enhanced UNICOM • On-boarding of new employees and contractors • Incident response • Snow plow equipment • AOA driving for employees, contractors, and visitors 2. Assess all current training programs for, and incorporate into future training programs, the following training strategy. Describe in detail the purpose of the training itself and the desired outcome (i.e. fully trained snow plow driver capable of operating unsupervised). Produce set objectives in relation to the training which can be assessed post-training (i.e. were objectives met?). Evaluate any briefings, documentation, and assessment material (i.e. testing, qualification criteria) to ensure 1) the material is instructed/demonstrated in a standard way to all training recipients, and 2) the material supports the set objectives. 3. Produce training guides for all applicable training programs. Access to guides and administrative oversight will be via the pending iSMS. 4. Establish training schedule cycles for refresher training and document as needed to highlight upcoming requirements.

SME Observation/Finding	Recommendation
Finding Seven Safety Assessment efforts are not formalized in relation to Risk Management or evaluation of set standards or policies. Once Risk Management controls are identified and operational, the oversight authority (i.e. General Manager, Safety Representative, or delegated representatives) must ensure controls continue to be effective in a changing environment.	A Gap Analysis Strategy should be implemented to provide a strategic schedule of assessments/inspections of various areas of operations and support functions.

Appendix 02 – Gap Analysis Strategic Planning Schedule

This schedule will help you create a timetable to create and implement your Gap Analysis program.

Table 1 – Gap Analysis Strategic Planning Schedule (sample)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Focus Area	1		2		3		4		5		6	
S.A.	X		X		X		X		X		X	
S.I.		X		X		X		X		X		
Gap Analysis												X

S.A. – Self Assessment S.I. – Self Inspection

Focus Areas (sample)

1. UNICOM Procedures and Training
2. Leased Hangars
3. Aircraft Operating Area
4. Local Airspace and Procedures
5. SMS and Risk Management Program(s)
6. Snow Removal Training and Operations

Appendix 03 – Functional In-Depth Review

This is the document we used during our onsite visit and interviews to document potential improvement opportunities. Our observations are listed in the right-hand column. Where the right-hand column is blank, we did not witness any issues.

Ref #.	Requirement	Conform Y | N		Tier	References / Comments / Evidence of Non-Conformities
0.0	**Definition: MANAGEMENT**				
0.0.1.	For the purposes of the gap analysis, "management" includes managers and supervisors at all levels from the General Manager position to lower tiered administrative and operational departments			N/A	
0.0.2.	Safety programs and related strategies, training and resources are a primary responsibility of managers and supervisors at all levels.			N/A	
0.0.3.	Execution of safety programs and strategies is the responsibility of anyone involved with a specific mission, operation, or level of effort; in this case related to KTRK.			N/A	
1.0	**Guidance (overall objective)**				
1.0.1.	Management has established a strategy to ensure functional managers and supervisors (rather than only safety staff) take all available actions to mitigate hazards and reduce risk while incorporating all airport customers and shareholders in the effort to accept no unnecessary risk(s).			II	Note: This conformity evaluation should be completed ONLY after all subsections.
1.1	**Management**				
1.1.1.	Does the General Manager provide adequate funding and support for safety and occupational health programs?	X		III	

Ref #.	Requirement	Conform Y	N	Tier	References / Comments / Evidence of Non-Conformities
1.1.2.	Does the General Manager ensure hazard reporting channels are established and void of retribution, or the threat of retribution?		X	II	"Not Needed"
1.1.3.	Is there an Airport Emergency Response Plan?	X		III	
1.1.4.	Does the General Manager provide a safe and healthy workplace for airport employees?	X		III	
1.1.5.	Does the General Manager ensure supervision at all levels is held accountable for enforcing safety and occupational health standards (to include tenant organizations/activities)?	X		III	
1.1.6.	Does the General Manager promote safety and occupational health awareness (i.e. culture) and enforce personal accountability?	X		III	Yes, through Mike Barrett
1.1.7.	Does the General Manager provide incentives to employees for participation in employee led safety activities?		X	III	Request inputs Smart Idea Program Awards Program needed
1.1.8.	Does the General Manager delegate spot inspection authority (i.e. "see it…report it") to all trained airport staff? Are there formalized reporting procedures?		X	II	Not established
1.2	**Safety Office**				
1.2.1.	Does the designated safety office/representative manage a proactive on-duty safety program?	X		III	
1.2.2.	Does the designated safety office/representative work closely with FAA, NTSB, and FSDO to ensure "open" recommendations or mandates from previous mishaps (at KTRK) are managed to "closure?"	X		III	Addresses NTSB reports
1.2.3.	Does the designated safety office/representative ensure all on-site incidents/mishaps are investigated and reported accordingly with regulatory guidance?	X		III	But, not standard documentation for incidents on the job

Ref #.	Requirement	Conform Y	N	Tier	References / Comments / Evidence of Non-Conformities
1.2.4.	Does the designated safety representative have any formal background training in incident/mishap investigation practices/techniques?	X		III	Not for A/C mishap Need a QRC for mishaps in UNICOM
1.2.5.	Has the designated safety office/representative developed a Mishap Response Plan, addressing all disciplines of responders, and is the plan incorporated into an overall Airport Emergency Response Plan?	X		III	Only addresses standard daily operations, not night operations when usually 1 person is on duty. QRC must address 1-person concept.
1.2.6.	Who does the designated safety office/representative work for or report to?	X		III	Hardy. Should be Kevin; Gen Mgr
1.2.7.	Has the designated safety representative attended industry seminars or accomplished training specifically focused on airport and operations safety?	X		III	Post-accident and RM are recommended
1.2.8.	Does the designated safety office/representative have assigned counterparts in other airport operational areas (i.e. fuels, FBO, STI, etc.) to coordinate with on safety issues?		X	III	Phred is sit-in if Mike B. is absent. Recommend a safety rep from each function and organization.
1.2.9.	Is the designated safety office/representative involved daily with operations at the airport?	X	*	II	3 safety mtg's month for 15 mins *Isn't invited to ops/mx meetings on Wed
1.2.10.	Does the designated safety office/representative have available resources to monitor operations and respond to incidents/mishaps in a timely manner (i.e. 2-way radio, vehicle, etc.)?	X	*	III	No official safety vehicle Recommend magnet placard ID'ing KTRK Safety
1.2.11.	Does the designated safety office/representative maintain a mishap response kit sufficient to meet initial response for ground or flight mishaps? Example of kit would be items for preservation of evidence (i.e. camera, witness statements) and points of contact (i.e. NTSB).	X		III	Expected to be handled by UNICOM Recommend unique dangers should be discussed with FD such as the Cirrus parachute system

Ref #.	Requirement	Conform Y	N	Tier	References / Comments / Evidence of Non-Conformities
1.2.12.	Does the designated safety office/representative evaluate the safety programs of airport tenant operations on a periodic basis (i.e. annually)?		X	II	Recommend evaluate STI, Sierra Mx, and Life Flight
1.2.13.	Does the designated safety office/representative have a spot-inspection (unannounced) program to ensure all activities are evaluated periodically?		X	II	
1.2.14.	Has the designated safety office/representative coordinated with the General Manager and Director of Aviation to identify "high interest areas" relative to risk management concerns, and are the "areas" assessed/inspected periodically?	X		III	Not directed by mgt, initiated by S.E.
1.2.15.	Does the designated safety office/representative distribute safety information via safety meetings, emails, publications, web page?	X		III	
1.2.16.	Does the designated safety office/representative conduct periodic (quarterly) and culminating (annual) safety assessments/inspections of direct support and airport tenant operations?		X	III	
1.2.17.	Does the designated safety office/representative monitor routine airfield maintenance and major construction projects? Are they a part of the preconstruction planning process?		X	II	No job hazard analysis Productions vs Safety has issues
1.2.18.	Is the designated safety office/representative familiar with FAA and NTSB reporting criteria for incidents and mishaps?	X		III	It is in the EAP checklist

Ref #.	Requirement	Conform Y	N	Tier	References / Comments / Evidence of Non-Conformities
1.2.19.	Does the designated safety office/representative coordinate with the Director of Aviation to evaluate the safety programs/mishap prevention plans of all airport operations, tenant organizations, and contractors?		X	II	
1.2.20.	Are all on-the-job injuries reported to the designated safety office/representative through a formal process?	X		III	Yes and to H.R.
1.2.21.	Does the designated safety office/representative review the Airport Emergency Response Plan on an annual basis, and provide inputs to General Manager and Direction of Aviation?		X	III	Review annually and republish every two years at a minimum
1.2.22.	Does the designated safety office/representative manage an airfield driving program to include policy, training, and enforcement efforts?	X		II	Insufficient; recommendations to follow
1.2.23.	Does the designated safety office/representative attend ACAT meetings?		X	III	Dir of Aviation does attend
1.2.24.	Are all incidents involving wildlife or birds and aircraft reported to appropriate agencies and recorded for historical data?		X	III	No official bird strike reporting procedures (SMS)
1.2.25.	Is the designated safety office/representative familiar with all related FARs and regulator guidance related to KTRK operations?	X		III	Yes, lots of initiative to learn
1.2.25.	Does the designated safety office/representative manage a well-organized data base of safety files on hard drive or server?	X		III	
1.2.26.	Do safety representatives primary duties focus on ground and flight safety? Are there additional duties?	X		III	Ground and employee safety plus aviation safety.

Ref #.	Requirement	Conform Y	N	Tier	References / Comments / Evidence of Non-Conformities
1.2.27.	Does designated safety office/representative coordinate with first responders to ensure communications channels, rules of engagement, procedures are established and understood in relation to incidents or mishaps?		X	III	Primarily done by Director of Mx/Operations (Phred)
1.2.28.	Does the designated safety office/representative provide an autonomous reporting system for staff and non-staff personnel in order to identify and report hazards at KTRK?		X	II	
1.3	**Aviation Safety**				
1.3.1.	Does the Director of Aviation contribute to safety policies and guidance for airport operations? How?	X		III	Airport drafts them and sends to TTAD board which takes 3-6 months Recommend official efforts vs. operations efforts to not delay ops improvements
1.3.2.	Does the Director of Aviation assess wildlife hazards to airport operations, and actively manage hazards to aircraft?	X		III	No fence Few to no bird strikes Deer strikes are 1-2 per year
1.3.3.	Is KTRK subject to bird hazards, and does activity change during annual seasons?	X		III	Low, no migration period
1.3.4.	Is KTRK subject to specific wildlife activity, and are mitigation steps taken to minimize impact on aircraft operations?		X	III	No, but no fence and gates are left open so deer and bears get in; plus no signs on far perimeter of airport to keep people out
1.3.5.	Does the Director of Aviation manage a KTRK mid-air collision avoidance program, and is there coordination with local airports and FSDO?	X		III	FSDO led one meeting Mtg w/ OAK ARTCC FSDO mandated glider Mode C, S Local military invited KTRK to a mtg Recommend coop w/ local airports to develop MACA program
1.3.6.	Does the Director of Aviation review the Airport Emergency Response Plan on an annual basis, and provide inputs to General Manager?		X	III	Both Mx/Ops and Aviation/Ops should review on annual basis and get signature from GM and TTAD

Ref #.	Requirement	Conform Y	N	Tier	References / Comments / Evidence of Non-Conformities
1.3.7.	Are local VFR procedures established for approach/departure/pattern/noise abatement?	X		III	
1.3.8.	Are hazards in the local flying area communicated appropriately to all pilots/operators systematically and updated routinely, and are hazards routinely assessed for alternate options?		X	II	Need a MACA chart UNICOM is semi-ATC ASOS ROEs needed in terms of what info can be passed via freq
1.3.9.	Does Director of Aviation coordinate with appropriate agencies to evaluate flight procedures to minimize conflicts with runway traffic, nearby airfields, and local flying areas?	X		III	Meetings w/ other airports and FSDO
1.3.10.	Does the Director of Aviation assist designated safety office/representative and NTSB to assess/investigate aircraft incidents/mishaps?	X		III	Primary job is to secure the scene once FD is done
1.3.11.	Does the Director of Aviation attend industry conferences, and local airport meetings?	X		III	
1.3.12.	Does the Director of Aviation attend ACAT and TTAD Board meetings?	X		III	Hardy chairs the ACAT
1.3.13.	Does the Director of Aviation coordinate with safety representative to ensure all appropriate operations/personnel receive timely briefing/feedback on close calls/incidents and mishaps at KTRK (or similar airports)?	X		III	Example is circling restrictions
1.3.14.	Is the Director of Aviation familiar with all related FARs and regulatory guidance related to KTRK operations?		X	II	Airspace authority is unclear
1.3.15.	Is the vegetative cover on the airfield managed IAW best practices to mitigate wildlife and bird activity?	X		III	Ask Phred
1.3.16.	Are airfield hazards identified, communicated to pilots, and considered for elimination or mitigating threat to aircraft activity?	X		III	Via NOTAMs and Web Page

Ref #.	Requirement	Conform Y	N	Tier	References / Comments / Evidence of Non-Conformities
1.3.17.	Does the Director of Aviation have a good working relationship with local FSDO?		X	III	Relationship w/ FSDO is strained Why?
1.3.18.	Does the Director of Aviation have a good working relationship with local vicinity airport counterparts?		X	III	No contact to counterparts but Recommend establishing comm's
1.3.19.	~~Is the Director of Aviation familiar with all related FARs and regulator guidance related to KTRK operations?~~				
1.3.20.	Is aviation safety emphasized as a primary objective by the Director of Aviation?	X	*	II	Recommend list of objectives via SMS
1.3.21.	Does the Director of Aviation coordinate with first responders to ensure communications channels, rules of engagement, procedures are established and understood in relation to incidents or mishaps?		X	II	Dispatched through 911 Recommend allowing for hot-line or crash button
1.3.22.	Are aviation hazards (i.e. bird activity, adverse winds, construction, high density altitude, runway conditions) communicated to operators/pilots? If so, how?	X	*	III	NOTAMS ASOS PIREPs are rare; Recommend adding note to AF/D to request PIREPs to UNICOM
1.3.23.	Are all in-flight emergencies and unusual occurrences at KTRK tracked for historical data?	X		III	
1.3.24.	Are there formalized hazard reporting procedures for operators/pilots to inform KTRK personnel of close calls, incidents, or hazards? Is there an autonomous reporting option?		X	II	Call into UNICOM Locals call Hardy Recommend fix via SMS
1.3.25.	Are assessed trends and/or scenarios of high risk communicated as "special interest items" to all airport staff, operators, and pilots?		X	III	Recommend new concept via SMS
1.3.26.	Are documented incident reports of some kind available to capture incidents known as "close calls," and would normally go unreported?		X	II	No formalized reporting process, but issues are recommended in new concept via SMS
1.4	**Ground Safety**				

Ref #.	Requirement	Conform Y	N	Tier	References / Comments / Evidence of Non-Conformities
1.4.1.	Does the designated safety office/representative assess/inspect every workplace/facility at least annually?		X	III	Reconcile through 12-month audit cycle
1.4.2.	Is a written report of assessments/inspections prepared for General Manager?		X	III	Reconcile through 12-month audit cycle
1.4.3.	Does the designated safety office/representative consult with workplace personnel on matters affecting their safety and health and give them the opportunity to identify unsafe and unhealthy working conditions, equipment, or practices?	X		III	Yes, but no official reporting process Recommend new concept via SMS
1.4.4.	Are daily inspections of aircraft operations areas (tarmac, fuels, taxiways, runways, perimeter fencing) conducted prior to commencement of routine operations?	X		III	Yes, done by Ops Mx personnel at sunrise and sunset
1.4.5.	Are safety measures and techniques widely communicated through billboard postings, posters, website, etc.?	X	*	III	Add more
1.4.6.	Is ground safety emphasized as a primary objective by the designated safety office/representative?		X	III	No objectives; recommend via SMS
1.4.7.	Is the use of personal protection equipment (PPE) emphasized by the designated safety office/representative?	X	*	III	Yes, but not always used Recommend emphasis via SMS
1.4.8.	Is an airport driving program present, and are permits controlled by the designated safety office/representative?	X		III	
1.4.9.	Are spot inspections conducted at all airport facilities on an annual basis?		X	III	Recommend new concept via SMS
1.4.10.	Are inspections conducted during nighttime hours to evaluate lighting, shadows, hazards which pose risk to personnel and operations?	X	*	II	Done in the past but not routinely

Ref #.	Requirement	Conform Y	N	Tier	References / Comments / Evidence of Non-Conformities
1.4.11.	Are related OSHA directives followed, and are required resources (i.e. eye wash stations, placards) available?	X		III	
1.4.12.	Are "self-serve" areas (i.e. refueling) monitored and inspected at random times to ensure adherence to procedures and to assess current guidance/checklists used by operators/pilots?	X		III	However, Jay D. has concerns.
1.4.13.	Is staff training conducted on a routine basis to amplify safe procedures and mitigation of risk (i.e. CPR, lifting techniques, aircraft operating areas)?	X		III	
1.4.14.	Does KTRK have a Confined Space or Lock-Out/Tag-Out program?	X		III	Lock out tag out / no confined space req't
1.4.15.	Are all ground emergencies and unusual occurrences at KTRK tracked for historical data?	X		III	
1.5	**Safety Management System**				
1.5.1.	Is management committed to launch of SMS? (Policy and Objectives)	X		III	
1.5.2.	Is KTRK staff committed to launch of SMS?	X		III	
1.5.3.	Are defined safety goals and objectives of KTRK operations established and published?	X		III	
1.5.4.	Are previous years' safety goals and objectives analyzed for comparable performance, and development of future years' goals and objectives?		X	III	Implement via iSMS
1.5.5.	Are periodic (i.e. quarterly) KTRK internal safety assessments/inspections conducted and reported to management and TTAD?		X	III	Implement via iSMS
1.5.6.	Is an annual KTRK internal safety assessment/inspection conducted and reported to management and TTAD?		X	III	Implement via iSMS

Ref #.	Requirement	Conform Y	N	Tier	References / Comments / Evidence of Non-Conformities
1.5.7.	Has the General Manager assigned a designated a SMS operator accountable for the implementation and maintenance of SMS?	X		III	Mike Barrett is the planned SMS manager
1.5.8.	Has the General Manager written and published a KTRK safety policy? Does the policy include: - identify the accountable executive - identify and communicate the safety organizational structure - identify the lines of safety responsibility and accountability - establish and maintain a safety policy statement - ensure the safety policy statement is available to all employees, operators, pilots - establish and maintain safety objectives - establish methods and processes to meet the safety objectives		X	III	Yes on the policy but does not address all recommended topics
1.5.9.	Is the safety policy reviewed annually?	X		III	
1.5.10.	Has the General Manager hired and assigned designated safety personnel, and provided adequate training to conduct duties?	X		III	
1.5.11.	Is emergency response planning conducted at KTRK, and evaluated through active exercises?		X	II	Limited and not periodically scheduled
1.5.12.	Is there an SMS implementation plan that defines the airport's approach to the management of safety in a manner that meets the organization's safety objectives and maintains SMS documentation to describe the safety policy and objectives, the SMS requirements, process and procedures, the accountabilities, responsibilities and authorities for processes and procedures, and SMS outputs?	X		III	
1.5.13.	KTRK Risk Management… (see section 1.6)				n/a

Ref #.	Requirement	Conform Y	N	Tier	References / Comments / Evidence of Non-Conformities
1.5.14.	Has the General Manager established processes to verify and monitor the effectiveness of the SMS? (Safety Assurance)		X	III	Planned with iSMS
1.5.15.	Is there an established hazard reporting system at KTRK that provides a means for reporter confidentiality?		X	II	No formal process
1.5.16.	What are the current media types for reporting hazards (i.e. hazard reporting form, email, website link, etc.)?	X		III	All means of communication but no set forms…planned with iSMS
1.5.17.	Are trends and systemic problems at KTRK tracked and managed through the RM process?		X	II	Planned with iSMS
1.5.18.	Is there an established feedback process to ensure reporters witness resolution to the hazard report?		X	III	Planned with iSMS
1.5.19.	Has KTRK established baselines of operational safety related to its goals and objectives to measure its performance against?		X	III	Planned with iSMS
1.5.20.	Do the General Manager and Director of Safety communicate to safety personnel and other airport staff what data to collect in order to evaluate trends?		X	III	No set process…planned with iSMS
1.5.21.	Does the General Manager receive briefings on the following: - performance with safety objectives - critical safety information distributed under the airport's safety promotion efforts - status of ongoing mitigation efforts - status of airport's SMS schedule for process improvements - immediate feedback and details of incidents, mishaps, close-calls, or identified hazards	X		III	Planned with iSMS

Ref #.	Requirement	Conform Y	N	Tier	References / Comments / Evidence of Non-Conformities
1.5.22.	Are tenant organizations/operations required by the airport management to develop and manage a unique internal SMS; subsidiary to and in support of the airport primary SMS?		X	III	Planned with iSMS
1.5.23.	Do established processes and policies at KTRK foster a positive safety culture? (Safety Promotion)	X		III	
1.5.24.	Is there an established and intentional safety training program at KTRK for all staff and users, as appropriate?	X		III	Needs improvement via IBP
1.5.25.	Is training for airport staff validated and recorded for historical purposes?	X		III	Planned with iSMS
1.5.26.	Is there a formal means for communicating important safety information to: - airport staff - local operators/pilots - in-transit operators/pilots	X		III	Needs improvement… Planned with iSMS
1.5.27.	Is all official communication regarding safety recorded for historical purposes?		X	III	Planned with iSMS
1.5.28.	Are there visible indicators of safety promotion and a positive safety culture at KTRK (i.e. safety bulletin boards, posters, signs, website data, etc.)?	X		III	Exceptional grass roots effort considering limited regulating guidance/oversight
1.5.28	Are airport personnel aware of the purpose of a Safety Management System is and why this airport needs one?		X	III	Educational effort is planned with iSMS
1.6	**Risk Management (RM)**				
1.6.1.	Is there evidence that RM is integrated into operations, activities, and planning at all levels at KTRK?		X	II	Awareness, but not common practice
1.6.2.	Are adequate resources available to support integration of RM?	X		III	
1.6.3.	Are all airport staff members trained and have a basic understanding RM?	X		III	

Ref #.	Requirement	Conform Y	N	Tier	References / Comments / Evidence of Non-Conformities
1.6.4.	Is RM training documented?		X	III	
1.6.5.	Is RM incorporated into job descriptions and on-the-job training guidelines?	X		III	
1.6.6.	Do safety personnel and the Director of Aviation ensure that organizational and personal application of RM principles, processes, tools and techniques are evaluated following close calls, incidents, and mishaps?	X		III	Need to formalize via policy and educated entire employee force in practical techniques of RM
1.6.7.	Does KTRK have policies/processes in place for delegating risk decision-making authority based upon assessed risk level, and are delegated authorities trained on RM and aware of their responsibilities and accountability?		X	II	Currently Phred makes these decisions. This should be Kevin or designated reps in written policy to Phred and/or Hardy
1.6.8.	Is there a designated RM representative at KTRK responsible for program management and training?		X	II	Mike B. does the training but does not manage the program.
1.6.9.	Is there RM documentation available to conduct assessments (i.e. in-house RM tools worksheet, alternate RM techniques)?		X	III	Need a set policy outlining training of RM tools and expectations
1.6.10.	Is RM documentation filed for historical purposes?		X	III	Will be via SMS
1.6.11.	Are RM assessments at the "High Risk" level communicated as soon as possible to all personnel/activities involved?	X		III	Just not formally…needs to be via policy and/or SMS
1.6.12.	Is RM prevalent in all aspects of airport operations at KTRK?		X	II	Tenant organization need to adopt
1.6.13.	Is RM at KTRK emphasized through policy, visual depictions (i.e. bulletin boards, posters, website links, etc.), and published media?		X	III	Needs greater effort -posters -SMS -policy
1.6.14.	Are recent RM assessments discussed at periodic airport operational or safety meetings?	X		III	Yes, but not intentionally under topic of RM…RM assessments should become standard meeting topic.

Appendix 04 – Interview Questions

These are the questions that we asked KTRK management, workforce, and the visiting pilots, owners, and operators that we interviewed.

Management Questions

1. In one sentence, tell me what you believe to be the safety philosophy here. (CULTURE)
2. How much safety data do you get and through what channels? What is done with this data once collected? (RISK MGT)
3. How is pertinent technical and regulatory information accessible by personnel? How do you ensure that this documentation and information is in line with the most current regulations, standards, and exemptions? (COMPLIANCE)
4. What kind of emergency preparedness training is provided? (TRAINING)
5. Where are you constrained by resources in your safety program? What is the first thing you would do if you had more? (SAFETY)
6. How would you summarize your safety philosophy, and what are your expectations from your company's current SMS? (SMS)
7. Tell me of a time when safety margins were eroded. What caused it to happen? (OPERATIONS)
8. What safety related communication processes or methods are in place within your organization? How do you ensure safety objectives and goals are made aware to all employees? (COMMUNICATIONS)
9. If you were the "boss" for a day, what would you change in terms of safety?
10. Assuming you have an accident here this year, what will it be and what will cause it?

Workforce Questions

1. On a scale of 1-10—1 being not committed, and 10 being daily dedication—how committed is your management to safety? Why? (CULTURE)
2. Has there even been a safety related or quality matter that you felt should be brought to the attention of management? What is your role in the RM process? What response did you receive from management? (RISK MGT)
3. On a scale of 1-10—1 being never, and 10 being quite frequently—how often do people violate policies and procedures around here? Why? (COMPLIANCE)
4. How often is safety training available to you and other employees? What types of safety training have you received while working here? What about training for new employees, and how soon after employment is it delivered? (TRAINING)
5. What are your roles and responsibilities with respect to safety? How are/were you informed of this? (SAFETY)

6. Describe your training with regards the airport's current SMS. (SMS)
7. Under what circumstances have you seen margins of safety eroded in order to meet operational requirements? (OPERATIONS)
8. On a scale of 1-10—1 being intimidated to inaction, and 10 being very comfortable—how comfortable do you feel communicating potential hazards or reporting incidents regardless of fault? Why? How have you/would you report such information? (COMMUNICATION)
9. If you were the "boss" for a day, what would you change in terms of safety?
10. Assuming you have an accident here this year, what will it be and what will cause it?

Pilot / Owner / Operator

1. As a pilot, owner, operator, do you have confidence in the safety program at KTRK? If not, what are some areas of concern?
2. Are adequate information resources available to operate safely in and around KTRK? If not, what are some areas of concern?
3. How do you communicate safety concerns regarding KTRK operations to airport workers and/or management?
4. Do you employ Risk Management decision making in your planning phase of operations?
5. Are adequate facility and airport architecture assets available to operate safely (i.e. AOA environment, UNICOM, procedures, airspace).
6. Has there ever been a ground or flight safety related matter that you felt should be brought to the attention of airport management? What mode of communication did you use? How did management respond to this?
7. What is your role in the safety program of KTRK? Do you have a role in the SMS program?
8. Are there operational concerns which have been communicated to management, but have yet to be resolved? What is the timeframe?
9. If you were the "boss" for a day, what you change in terms of safety at KTRK?
10. In respect to the airport operation, where do you see the next incident/accident occurring?

Appendix 05 – Recommendation Management Tool

This is a suggested template to use for following up on hazard reports. May be superseded by the forthcoming iSMS, once it is fully deployed.

Table 2 – Recommendation Tracking Table

Finding No.	Tier Level	Description	Guidance Reference (if req'd)	Open Date *	Recommended Action	OPR	Closed Date **
99 (example)	**III**	**Smoking while refueling aircraft and/or vehicles and/or equipment**	**OSHA x.y.z. FAA AC x.x**	**5/29/15**	**Set policy forbidding smoking while refueling. Produce warning signs.**	**Safety Office**	**x/xx/xx**

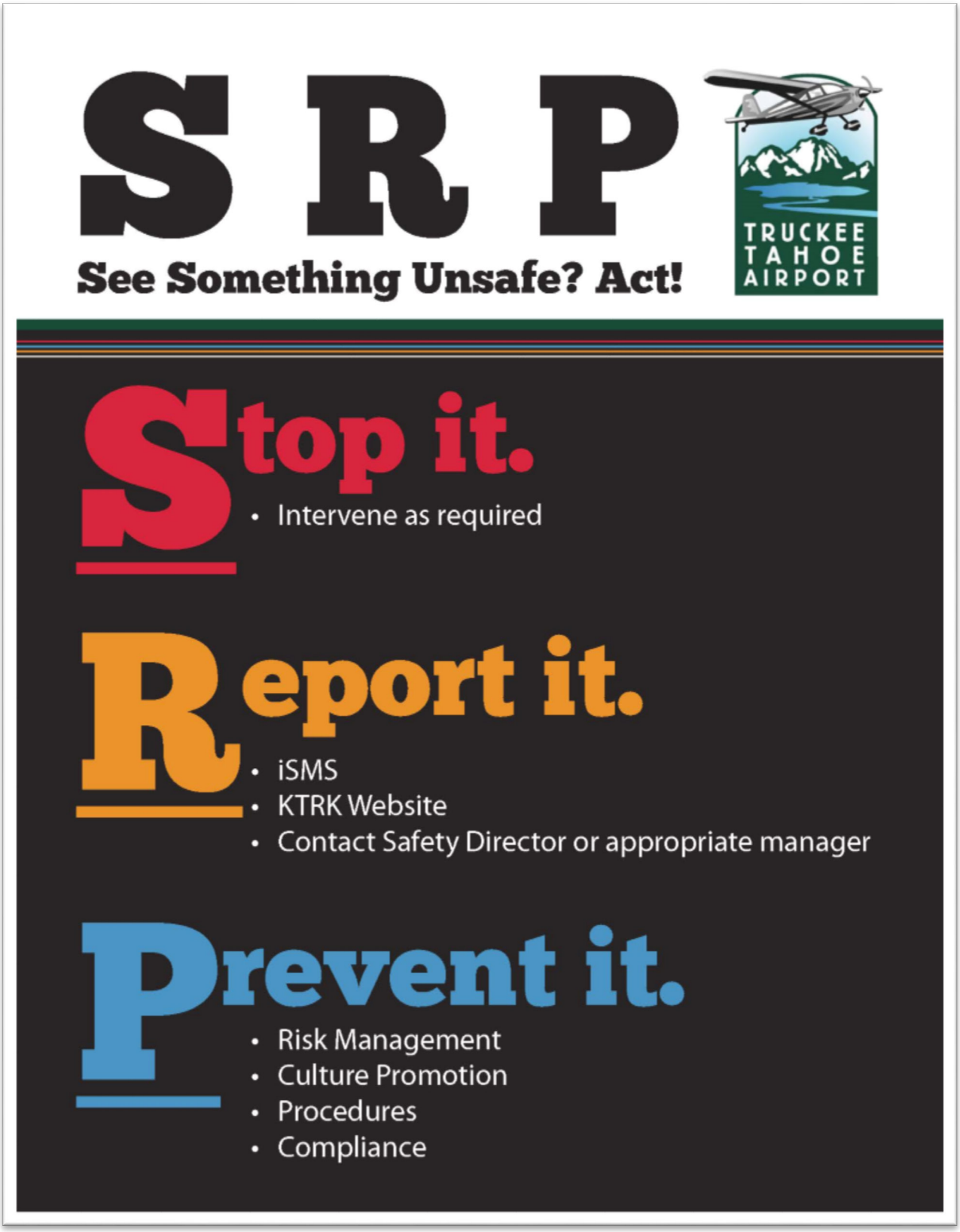
* Date official report is received by KTRK management

** Date the recommended action is complete, or finding is satisfied or deemed non-applicable by KTRK management

OPR – Office of primary responsibility

Appendix 06 – New Safety Culture Promotional Posters

The following posters were developed for KTRK by Convergent Performance, to be used to promote the new safety strategy and message.

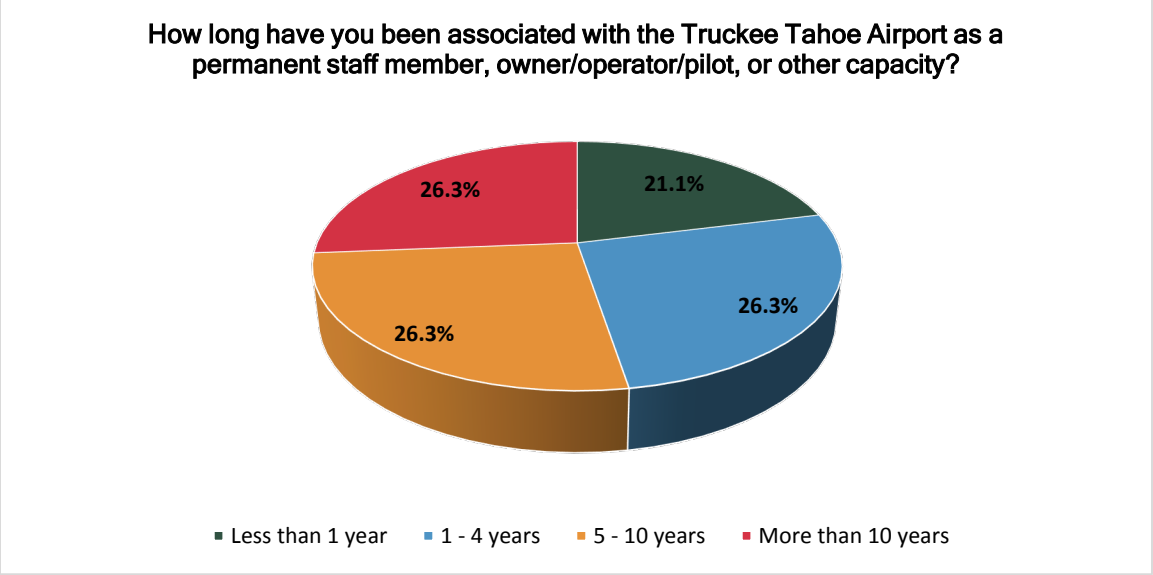


Appendix 07 – Employee Survey Data

The following questions were used on the employee survey we deployed before our site visit. The data collected from this survey was used as part of our comprehensive analysis and assessment.

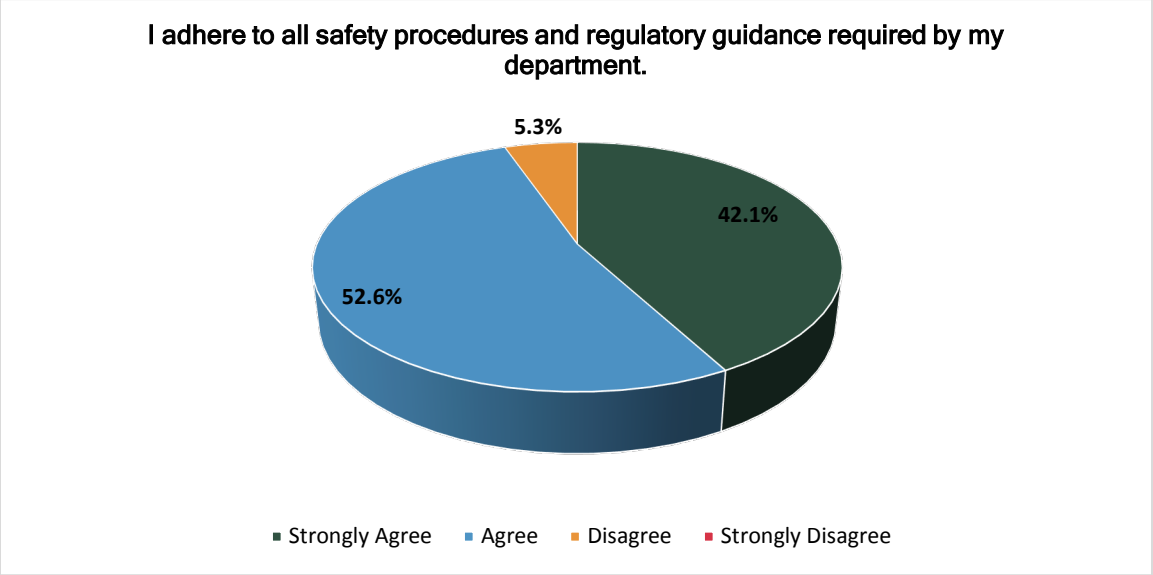
Question 1

How long have you been associated with the Truckee Tahoe Airport as a permanent staff member, owner/operator/pilot, or other capacity?		
Answer Options	**Response Percent**	**Response Count**
Less than 1 year	21.1%	4
1 - 4 years	26.3%	5
5 - 10 years	26.3%	5
More than 10 years	26.3%	5
	answered question	19
	skipped question	0



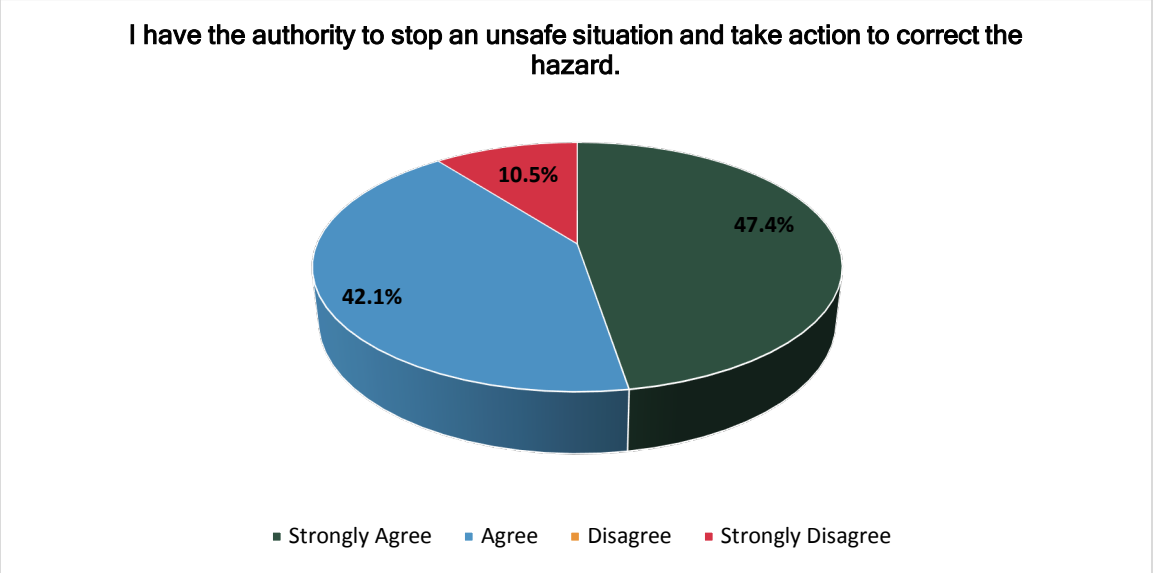
Question 2

I adhere to all safety procedures and regulatory guidance required by my department.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	42.1%	8
Agree	52.6%	10
Disagree	5.3%	1
Strongly Disagree	0.0%	0
	answered question	19
	skipped question	0



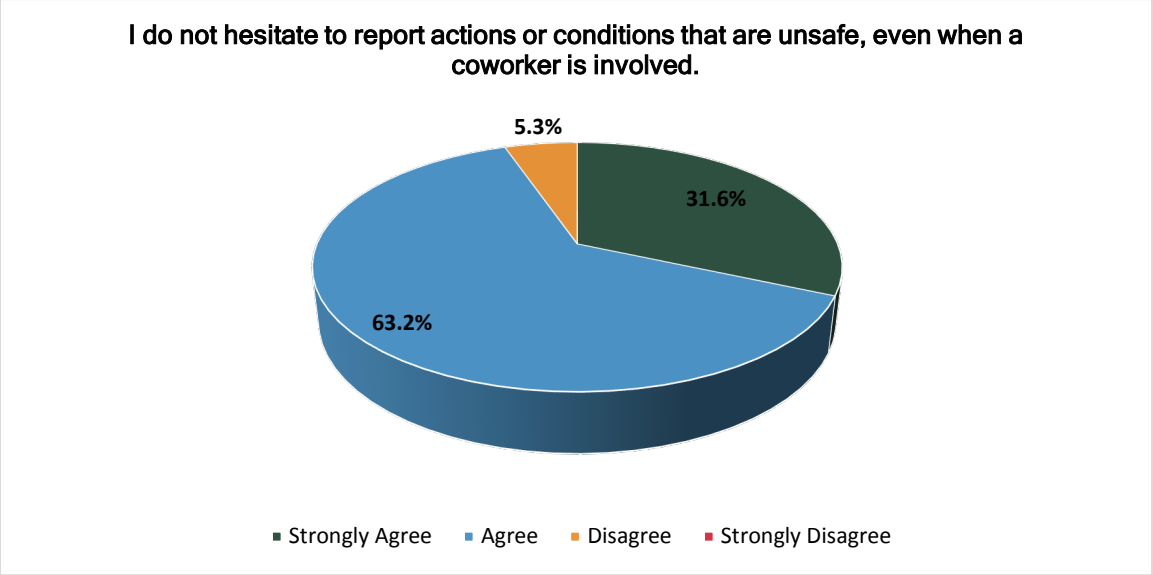
Question 3

I have the authority to stop an unsafe situation and take action to correct the hazard.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	47.4%	9
Agree	42.1%	8
Disagree	0.0%	0
Strongly Disagree	10.5%	2
	answered question	19
	skipped question	0



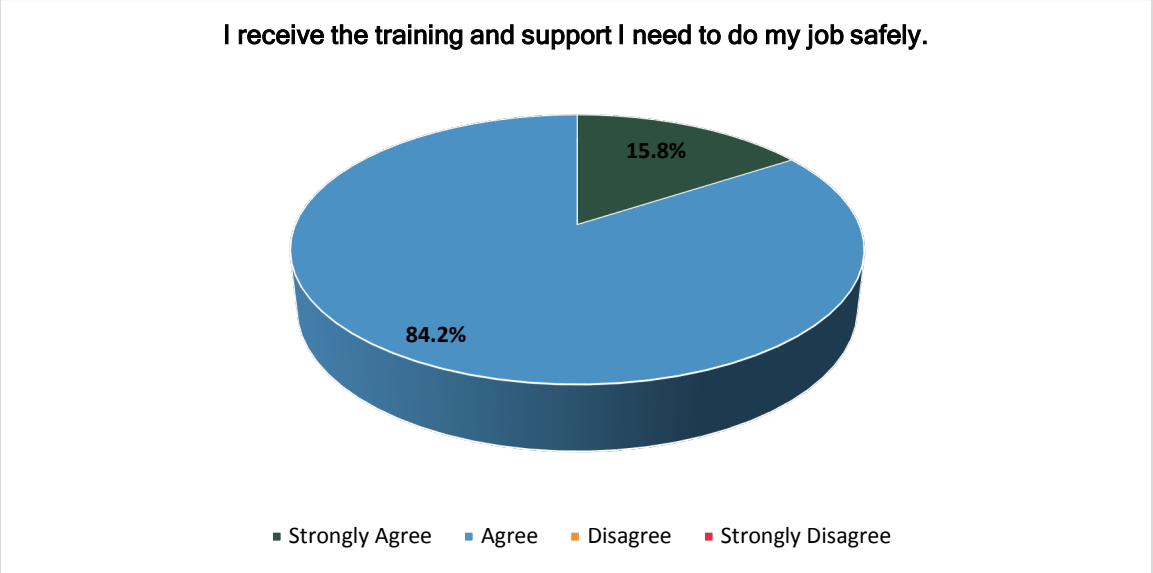
Question 4

I do not hesitate to report actions or conditions that are unsafe, even when a coworker is involved.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	31.6%	6
Agree	63.2%	12
Disagree	5.3%	1
Strongly Disagree	0.0%	0
	answered question	19
	skipped question	0



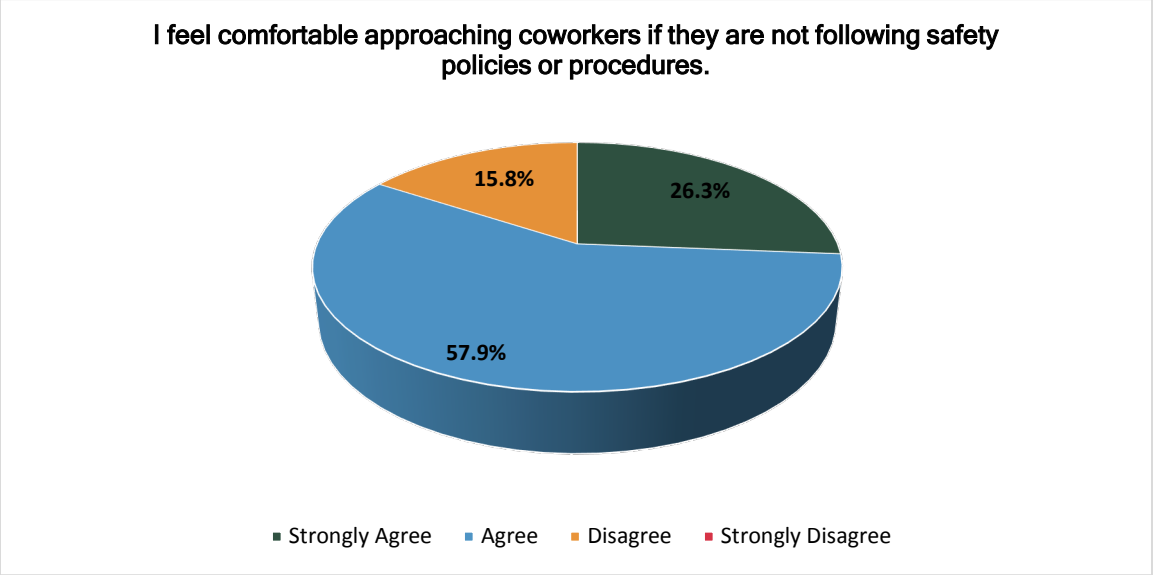
Question 5

I receive the training and support I need to do my job safely.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	15.8%	3
Agree	84.2%	16
Disagree	0.0%	0
Strongly Disagree	0.0%	0
	answered question	19
	skipped question	0



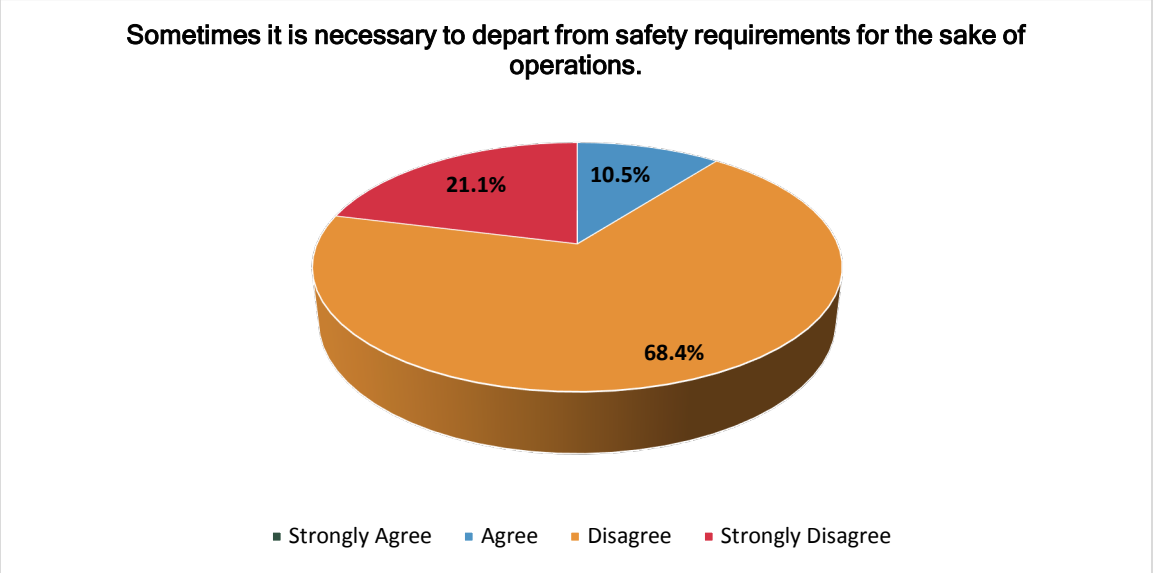
Question 6

I feel comfortable approaching coworkers if they are not following safety policies or procedures.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	26.3%	5
Agree	57.9%	11
Disagree	15.8%	3
Strongly Disagree	0.0%	0
	answered question	19
	skipped question	0



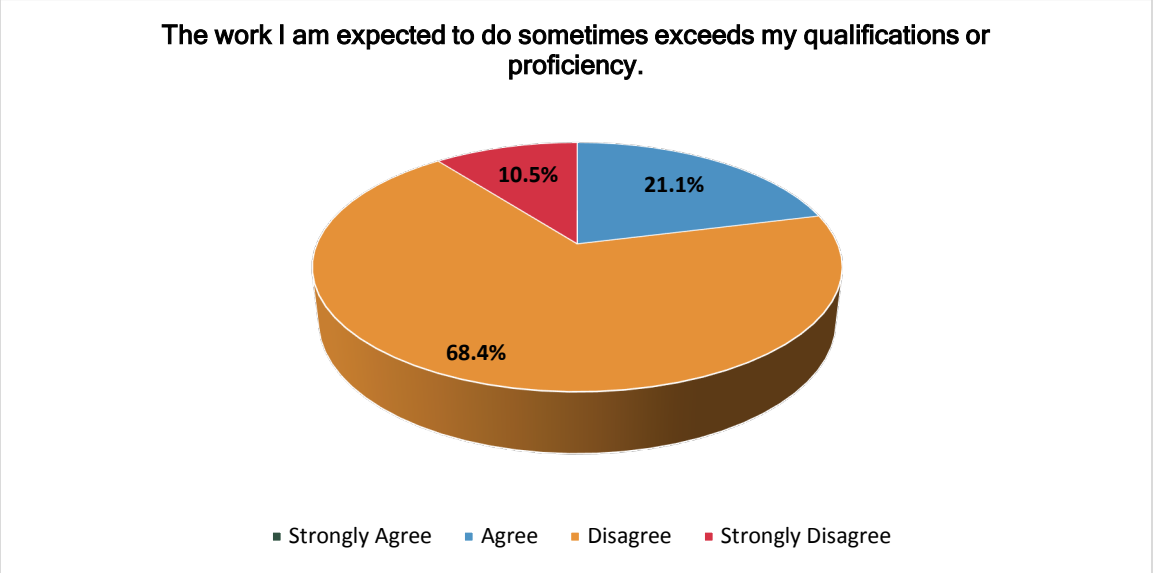
Question 7

Sometimes it is necessary to depart from safety requirements for the sake of operations.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	0.0%	0
Agree	10.5%	2
Disagree	68.4%	13
Strongly Disagree	21.1%	4
	answered question	19
	skipped question	0



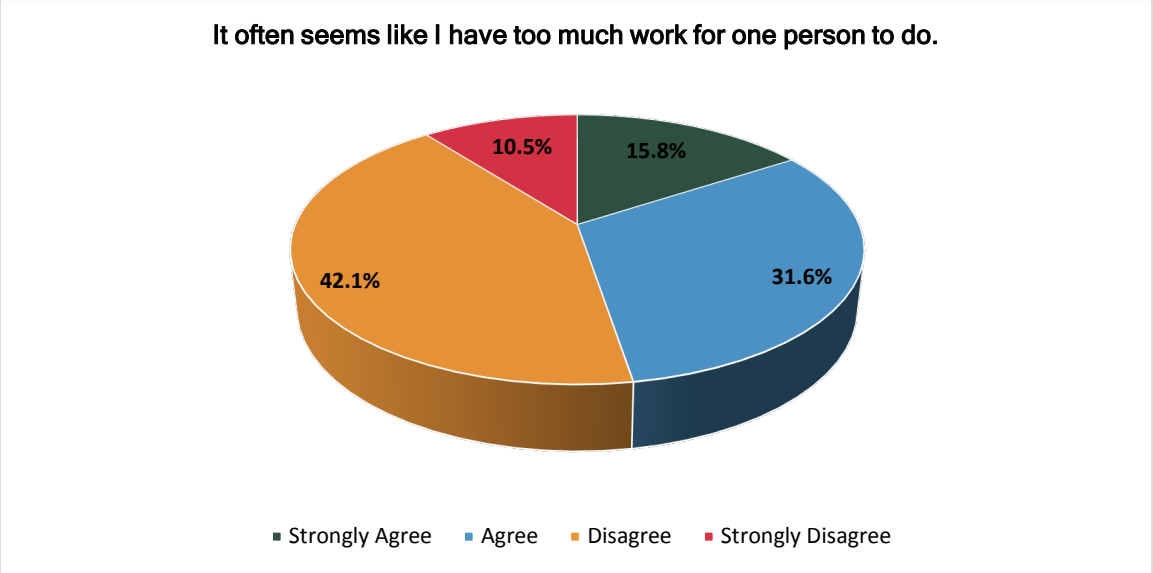
Question 8

The work I am expected to do sometimes exceeds my qualifications or proficiency.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	0.0%	0
Agree	21.1%	4
Disagree	68.4%	13
Strongly Disagree	10.5%	2
	answered question	19
	skipped question	0



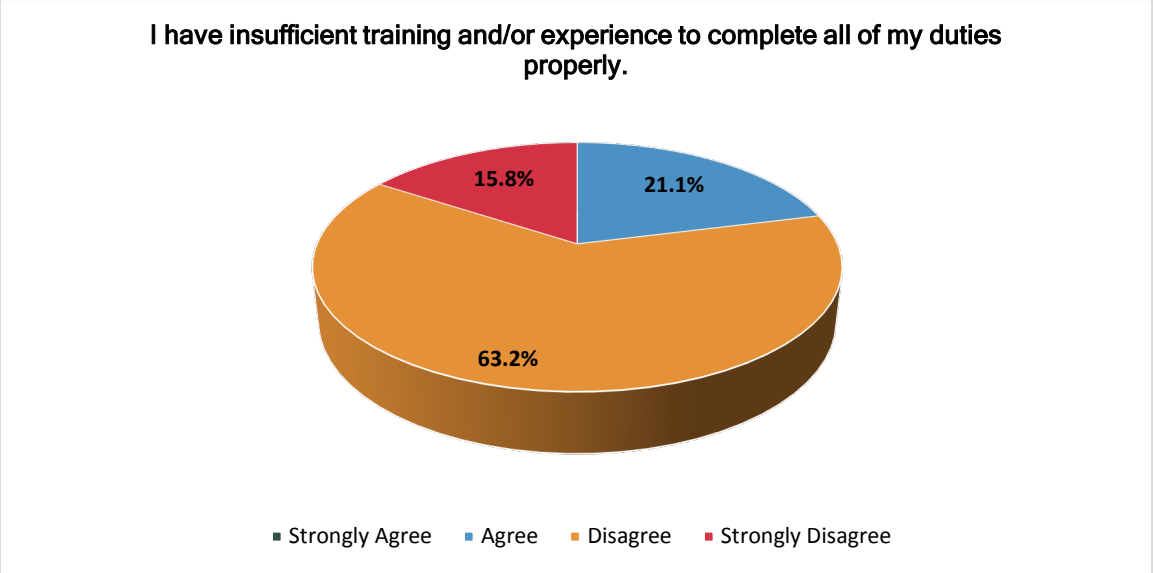
Question 9

It often seems like I have too much work for one person to do.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	15.8%	3
Agree	31.6%	6
Disagree	42.1%	8
Strongly Disagree	10.5%	2
	answered question	19
	skipped question	0



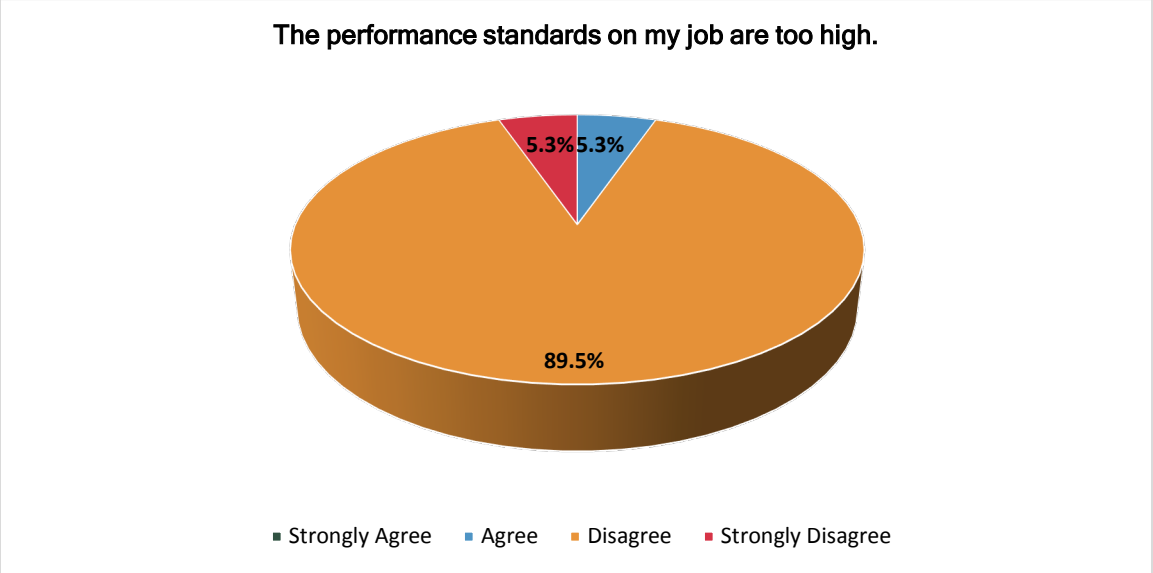
Question 10

I have insufficient training and/or experience to complete all of my duties properly.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	0.0%	0
Agree	21.1%	4
Disagree	63.2%	12
Strongly Disagree	15.8%	3
	answered question	19
	skipped question	0



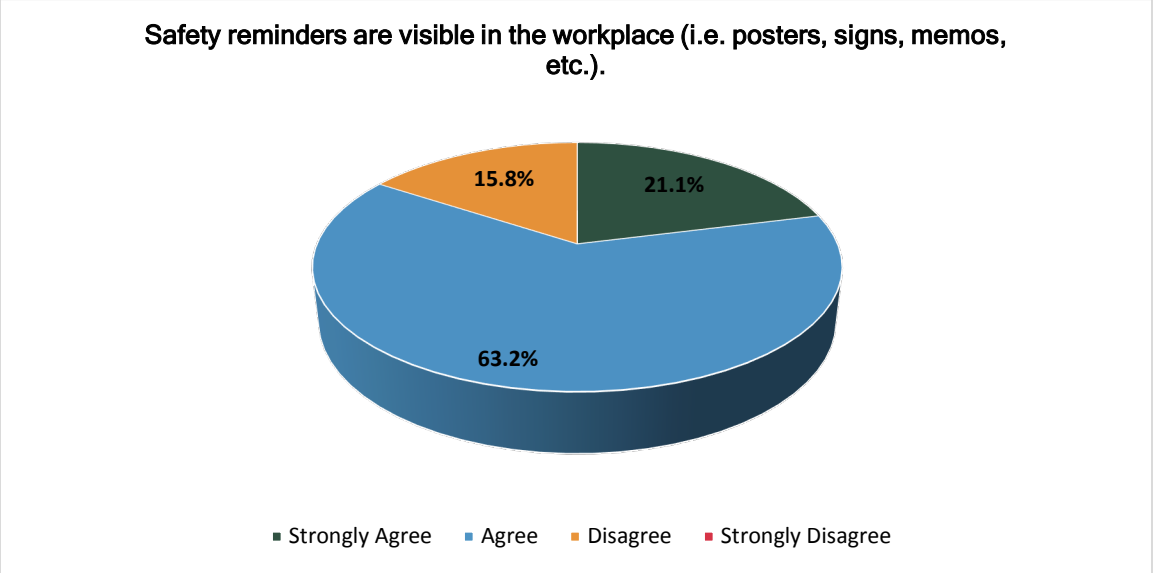
Question 11

The performance standards on my job are too high.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	0.0%	0
Agree	5.3%	1
Disagree	89.5%	17
Strongly Disagree	5.3%	1
	answered question	19
	skipped question	0



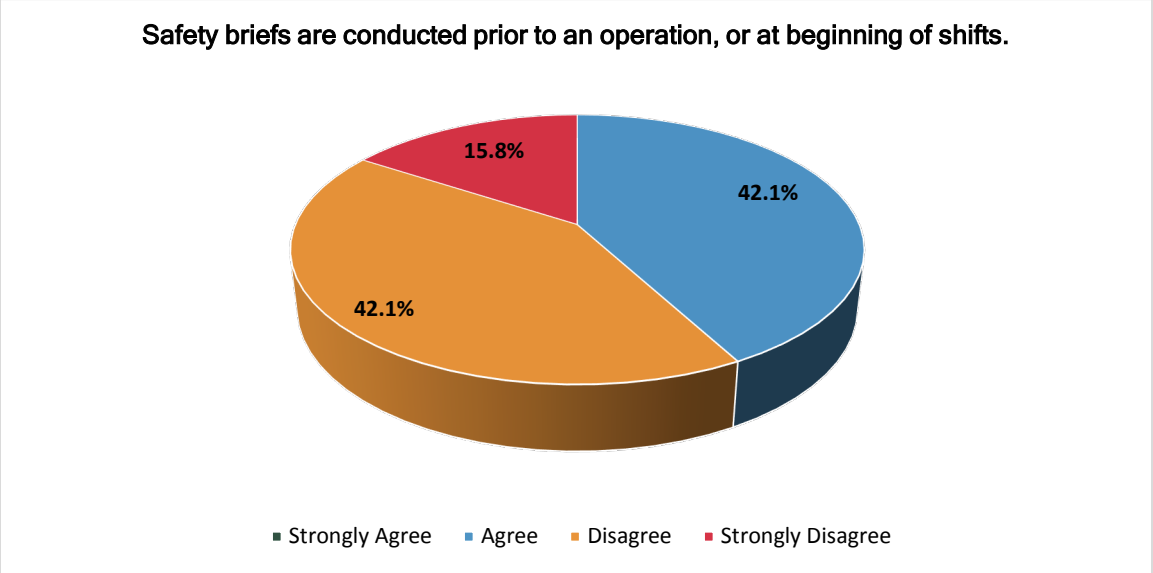
Question 12

Safety reminders are visible in the workplace (i.e. posters, signs, memos, etc.).		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	21.1%	4
Agree	63.2%	12
Disagree	15.8%	3
Strongly Disagree	0.0%	0
	answered question	19
	skipped question	0



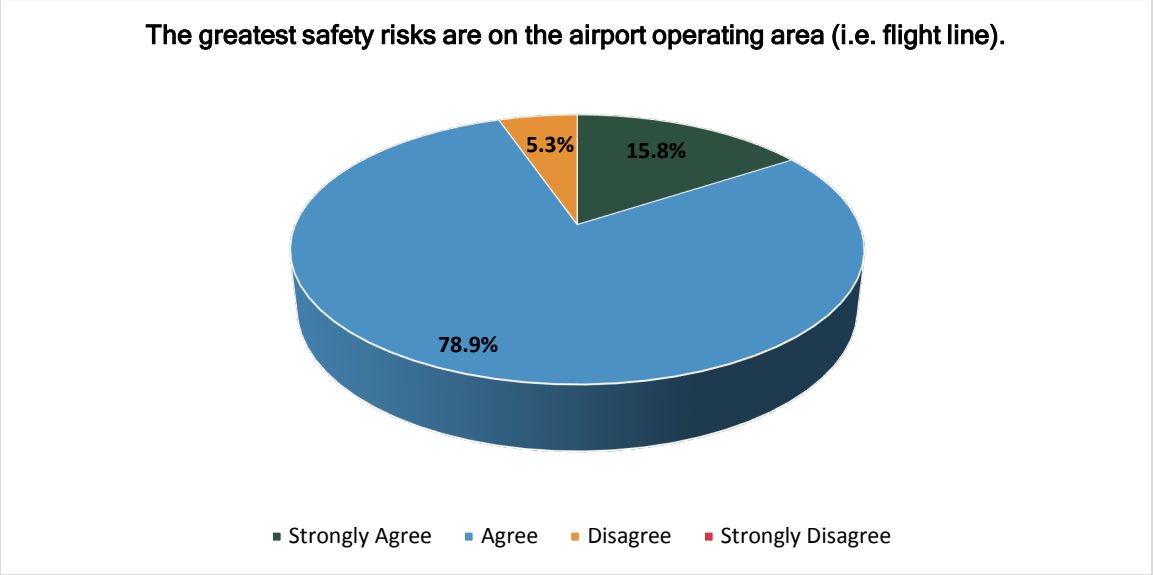
Question 13

Safety briefs are conducted prior to an operation, or at beginning of shifts.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	0.0%	0
Agree	42.1%	8
Disagree	42.1%	8
Strongly Disagree	15.8%	3
	answered question	19
	skipped question	0



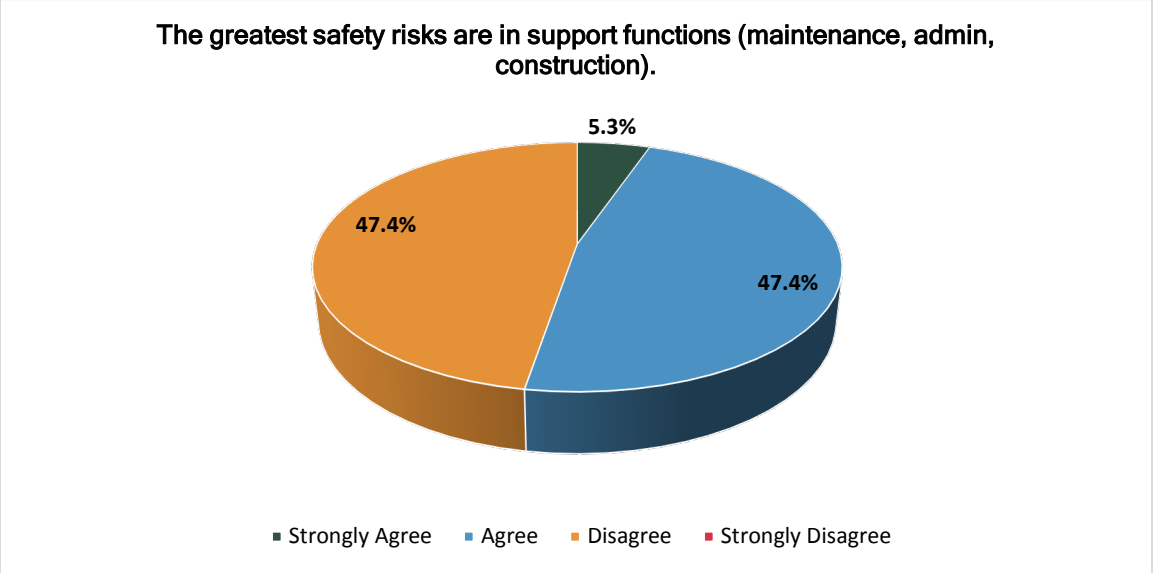
Question 14

The greatest safety risks are on the airport operating area (i.e. flight line).		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	15.8%	3
Agree	78.9%	15
Disagree	5.3%	1
Strongly Disagree	0.0%	0
	answered question	19
	skipped question	0



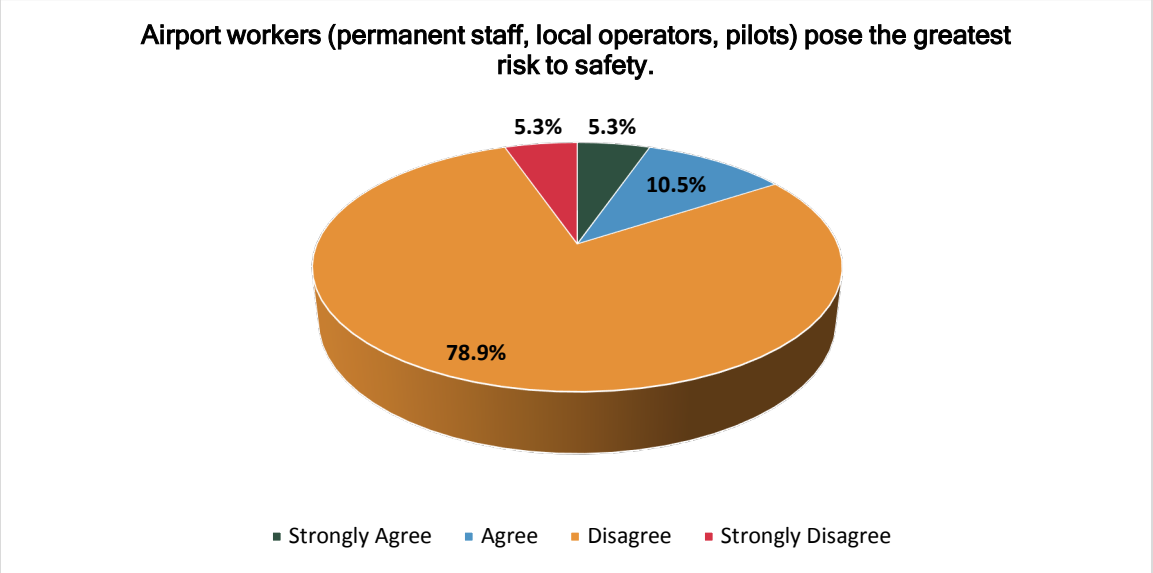
Question 15

The greatest safety risks are in support functions (maintenance, admin, construction).		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	5.3%	1
Agree	47.4%	9
Disagree	47.4%	9
Strongly Disagree	0.0%	0
	answered question	19
	skipped question	0



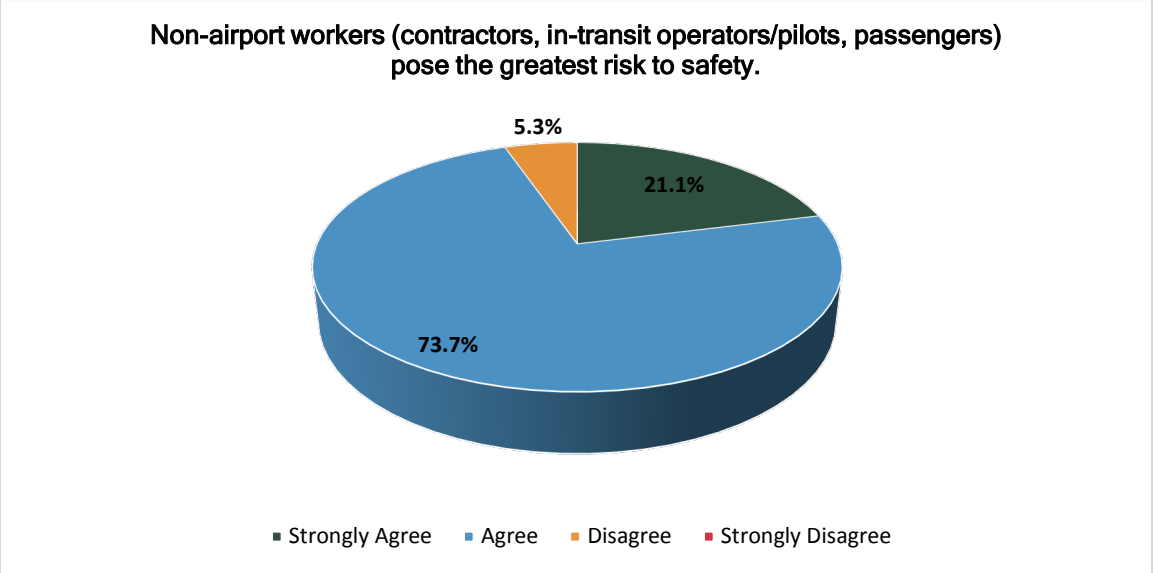
Question 16

Airport workers (permanent staff, local operators, pilots) pose the greatest risk to safety.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	5.3%	1
Agree	10.5%	2
Disagree	78.9%	15
Strongly Disagree	5.3%	1
	answered question	19
	skipped question	0



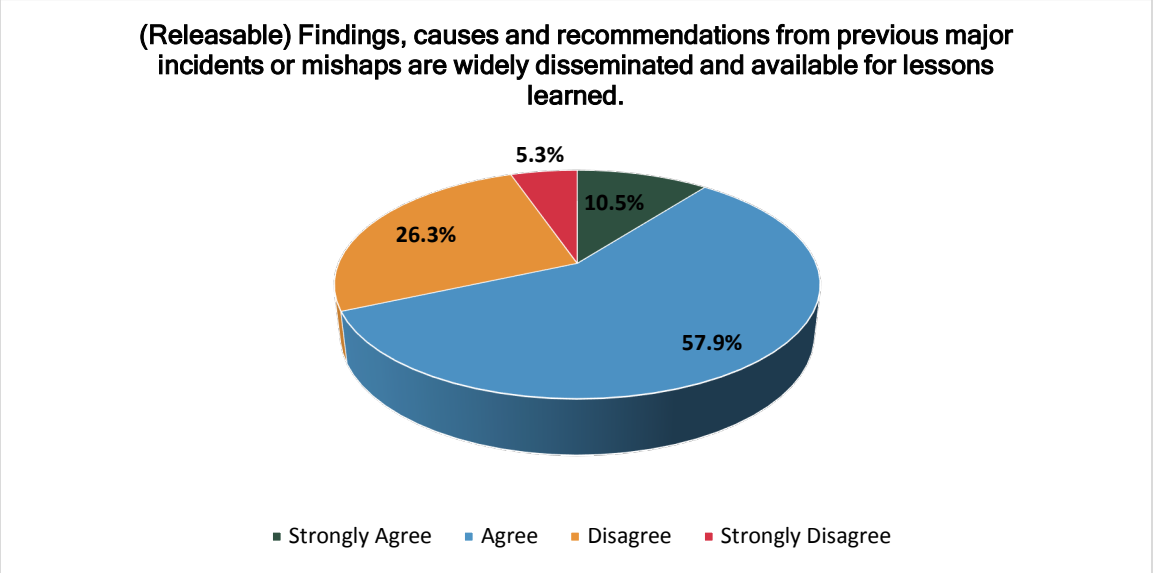
Question 17

Non-airport workers (contractors, in-transit operators/pilots, passengers) pose the greatest risk to safety.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	21.1%	4
Agree	73.7%	14
Disagree	5.3%	1
Strongly Disagree	0.0%	0
	answered question	19
	skipped question	0



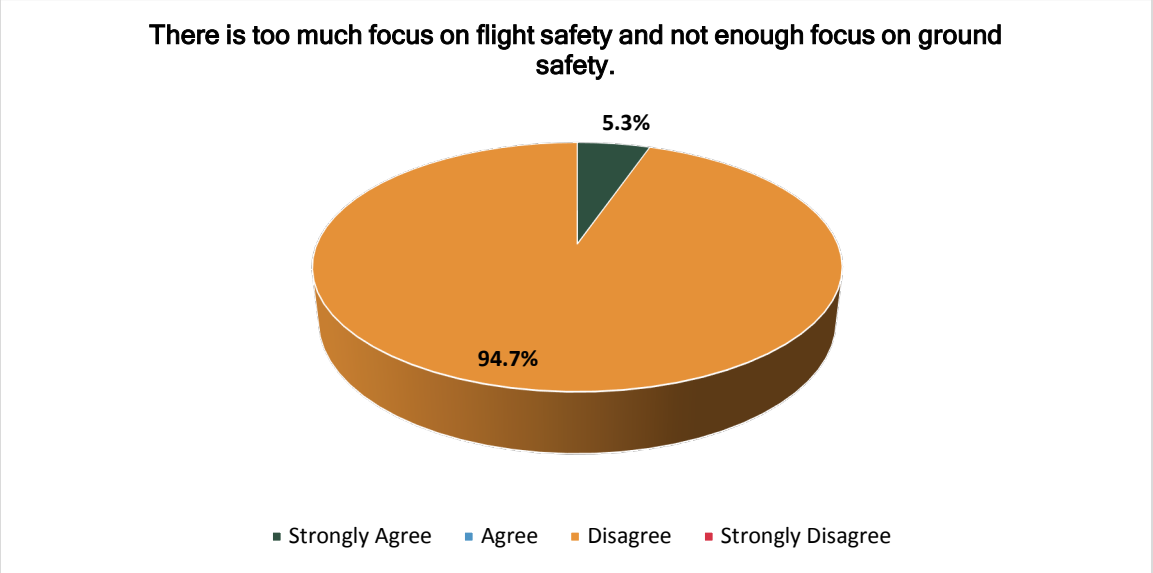
Question 18

(Releasable) Findings, causes and recommendations from previous major incidents or mishaps are widely disseminated and available for lessons learned.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	10.5%	2
Agree	57.9%	11
Disagree	26.3%	5
Strongly Disagree	5.3%	1
	answered question	19
	skipped question	0



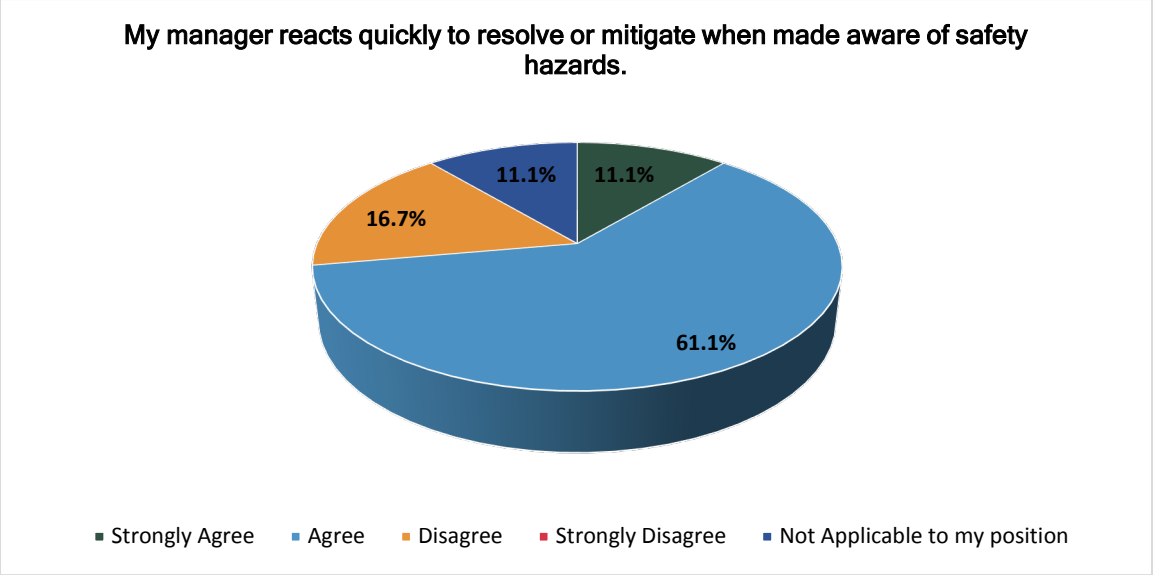
Question 19

There is too much focus on flight safety and not enough focus on ground safety.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	5.3%	1
Agree	0.0%	0
Disagree	94.7%	18
Strongly Disagree	0.0%	0
	answered question	19
	skipped question	0



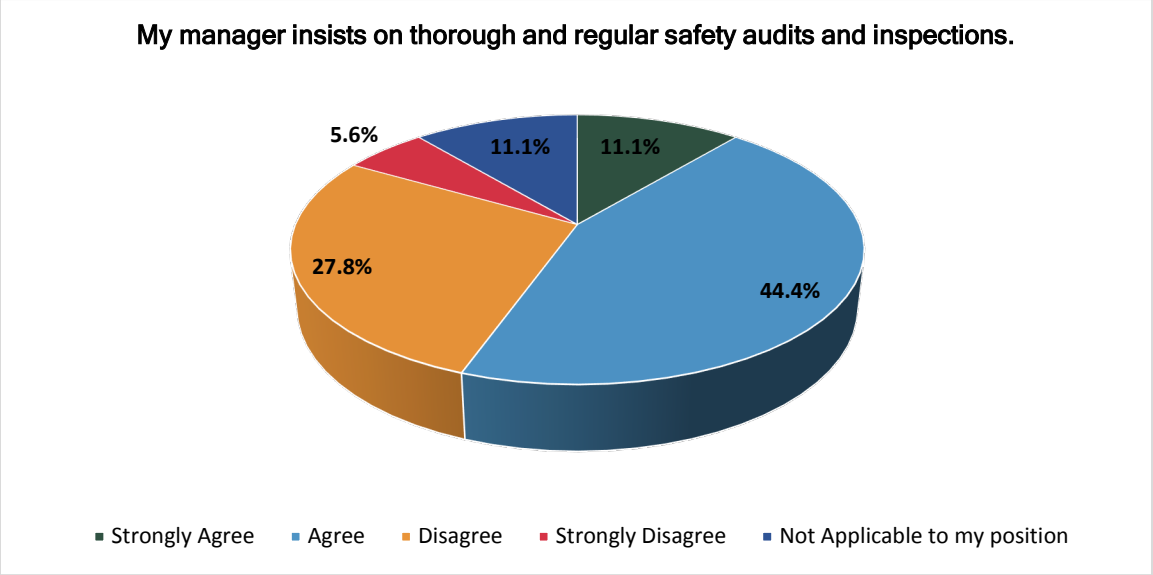
Question 20

My manager reacts quickly to resolve or mitigate when made aware of safety hazards.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	11.1%	2
Agree	61.1%	11
Disagree	16.7%	3
Strongly Disagree	0.0%	0
Not Applicable to my position	11.1%	2
	answered question	18
	skipped question	1



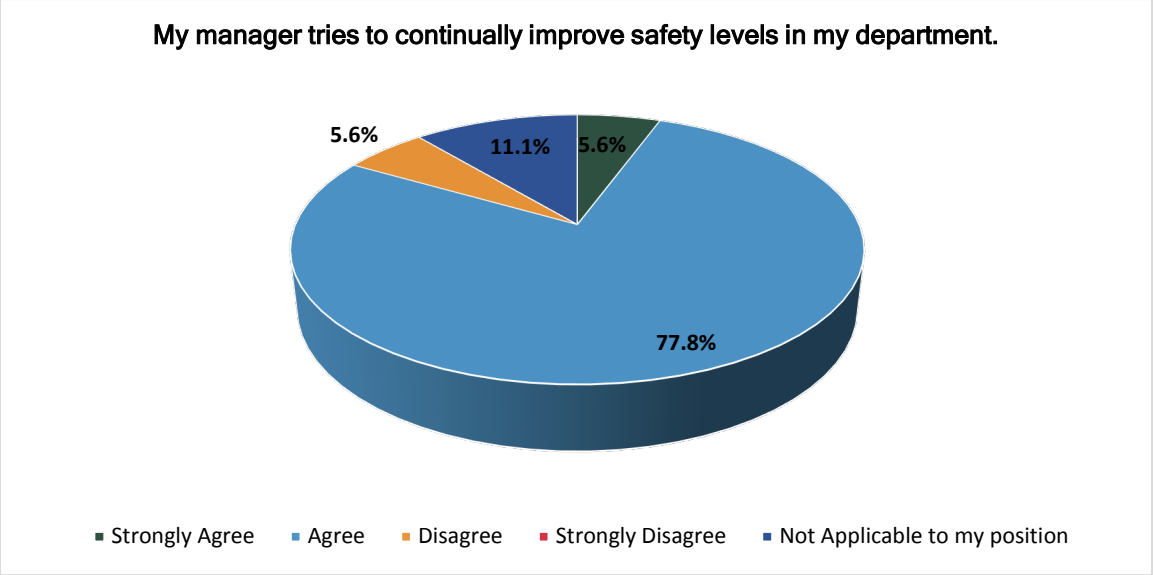
Question 21

My manager insists on thorough and regular safety audits and inspections.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	11.1%	2
Agree	44.4%	8
Disagree	27.8%	5
Strongly Disagree	5.6%	1
Not Applicable to my position	11.1%	2
	answered question	18
	skipped question	1



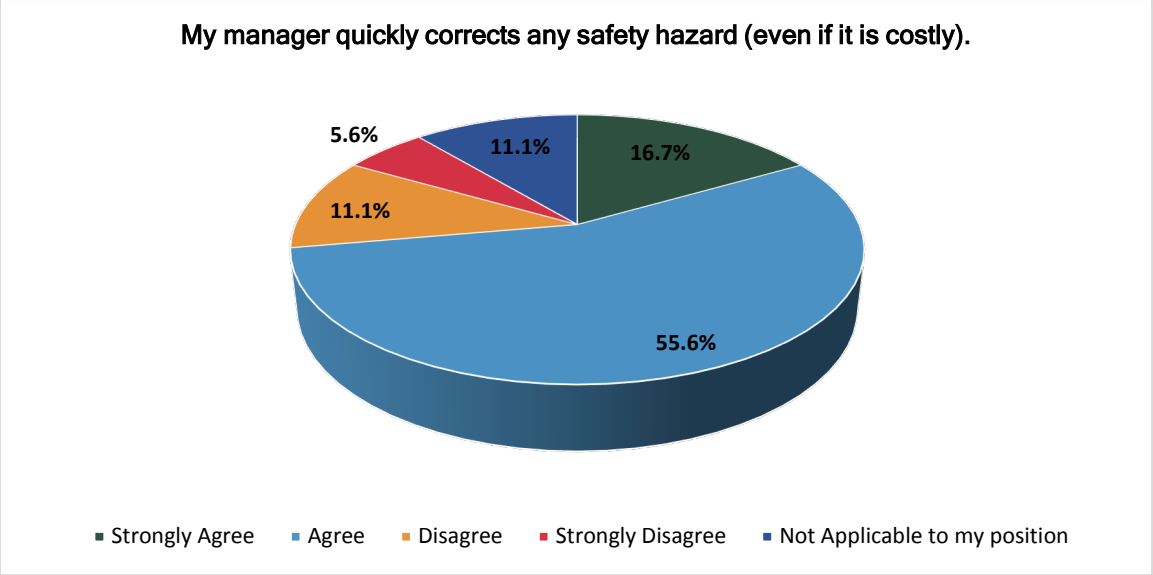
Question 22

My manager tries to continually improve safety levels in my department.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	5.6%	1
Agree	77.8%	14
Disagree	5.6%	1
Strongly Disagree	0.0%	0
Not Applicable to my position	11.1%	2
answered question		18
skipped question		1



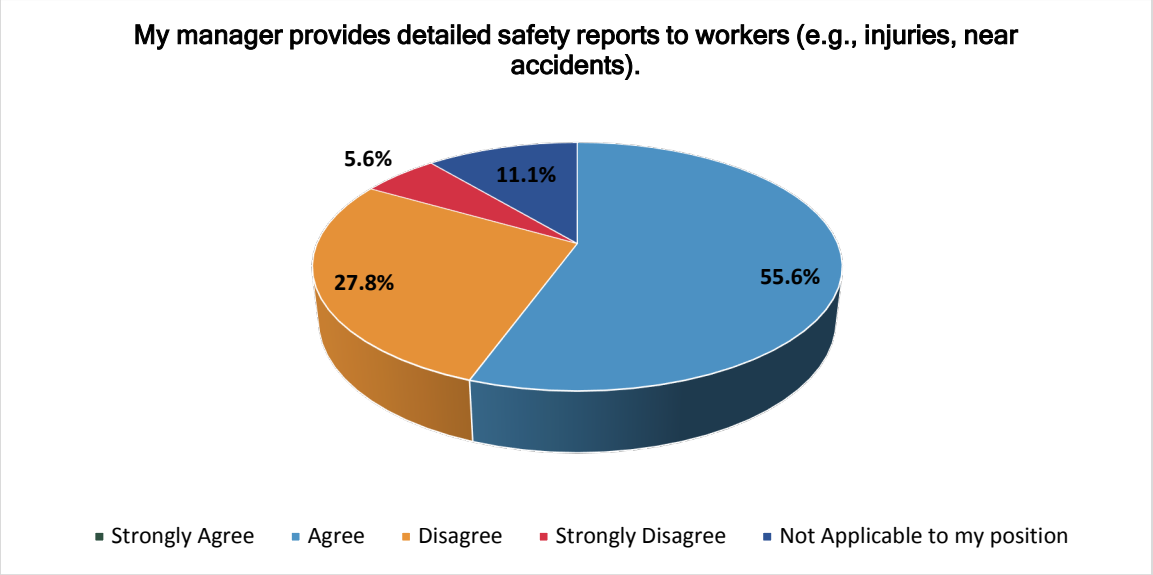
Question 23

My manager quickly corrects any safety hazard (even if it is costly).		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	16.7%	3
Agree	55.6%	10
Disagree	11.1%	2
Strongly Disagree	5.6%	1
Not Applicable to my position	11.1%	2
	answered question	18
	skipped question	1



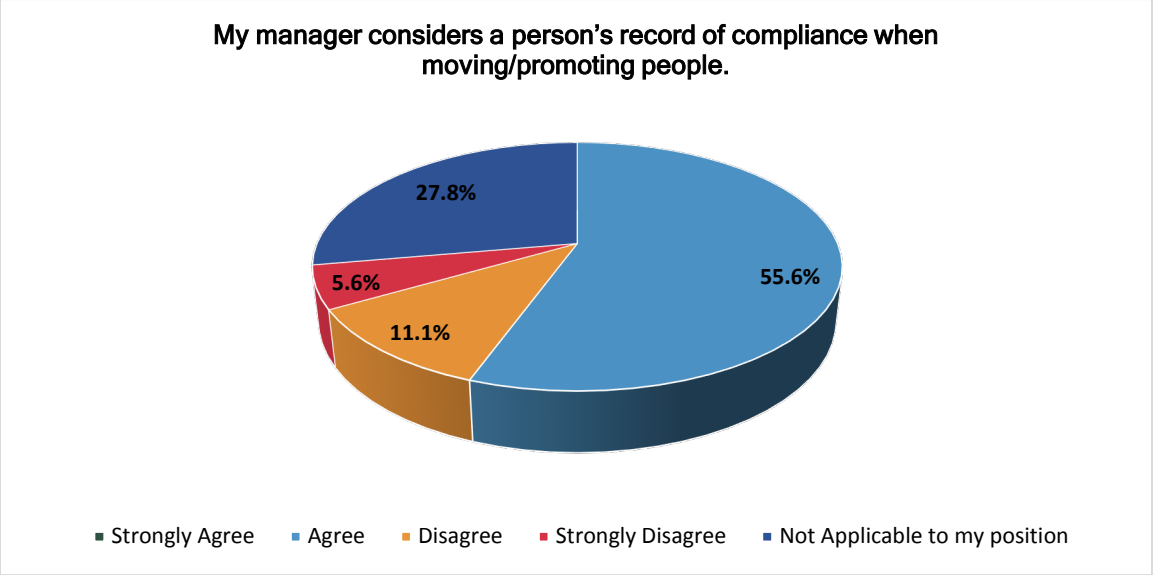
Question 24

My manager provides detailed safety reports to workers (e.g., injuries, near accidents).		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	0.0%	0
Agree	55.6%	10
Disagree	27.8%	5
Strongly Disagree	5.6%	1
Not Applicable to my position	11.1%	2
	answered question	18
	skipped question	1



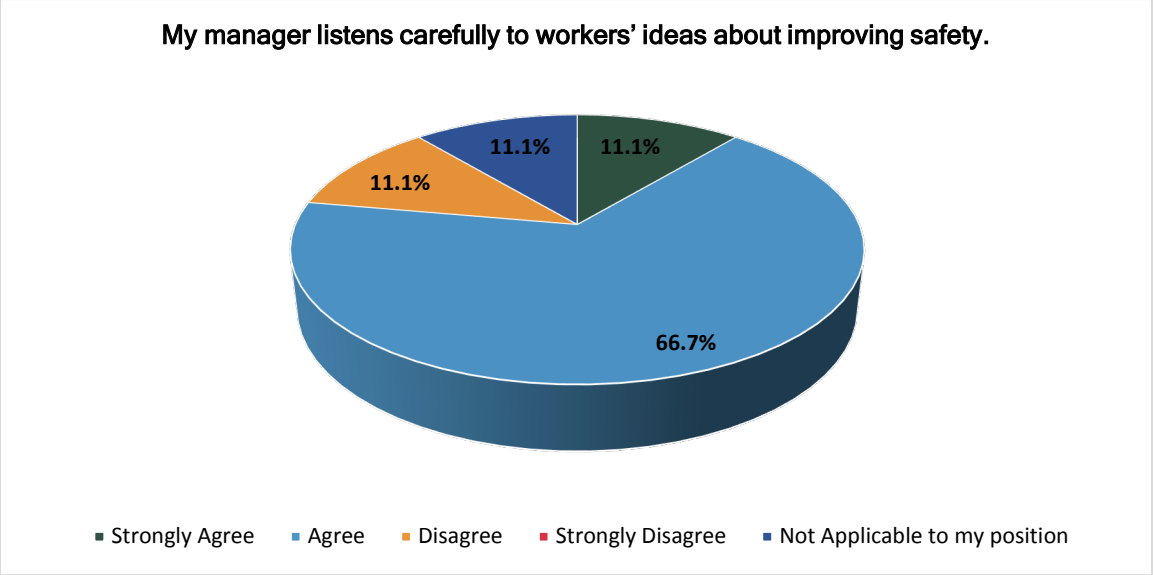
Question 25

My manager considers a person's record of compliance when moving/promoting people.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	0.0%	0
Agree	55.6%	10
Disagree	11.1%	2
Strongly Disagree	5.6%	1
Not Applicable to my position	27.8%	5
	answered question	18
	skipped question	1



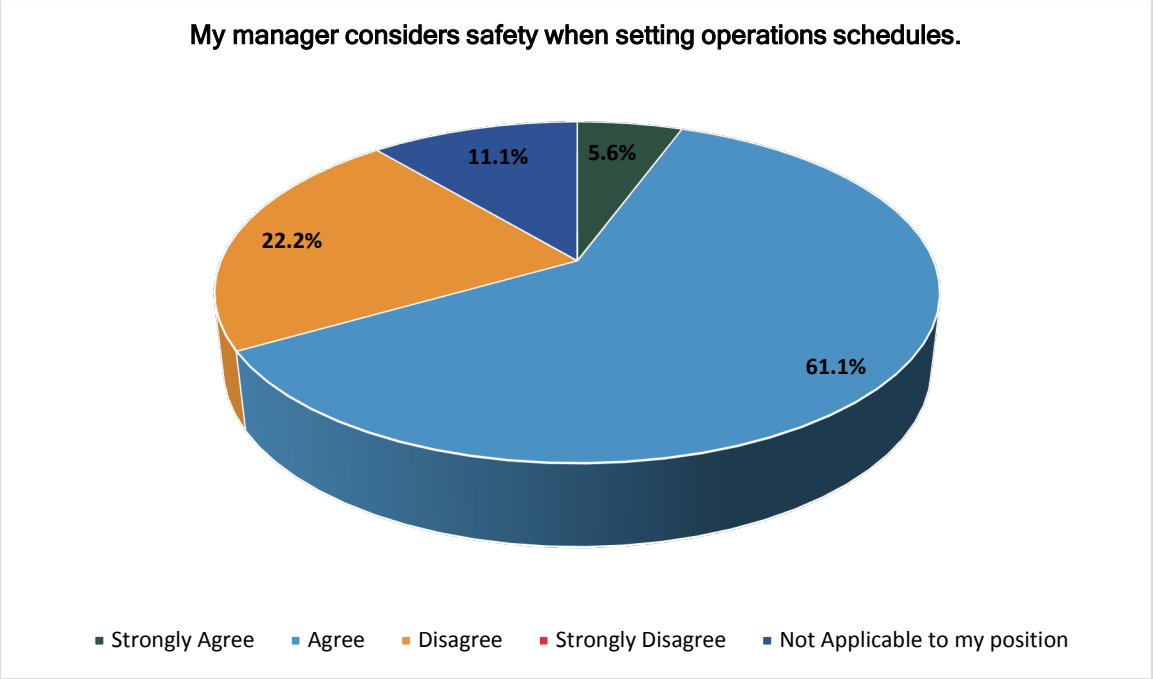
Question 26

My manager listens carefully to workers' ideas about improving safety.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	11.1%	2
Agree	66.7%	12
Disagree	11.1%	2
Strongly Disagree	0.0%	0
Not Applicable to my position	11.1%	2
	answered question	18
	skipped question	1



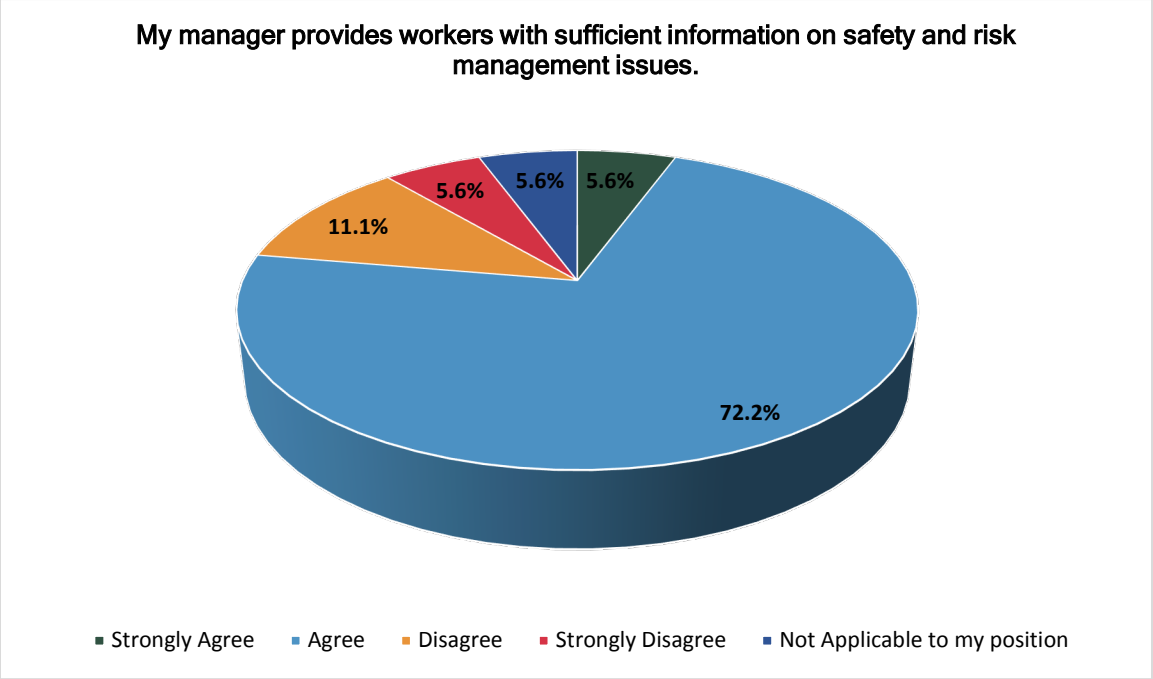
Question 27

My manager considers safety when setting operations schedules.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	5.6%	1
Agree	61.1%	11
Disagree	22.2%	4
Strongly Disagree	0.0%	0
Not Applicable to my position	11.1%	2
	answered question	18
	skipped question	1



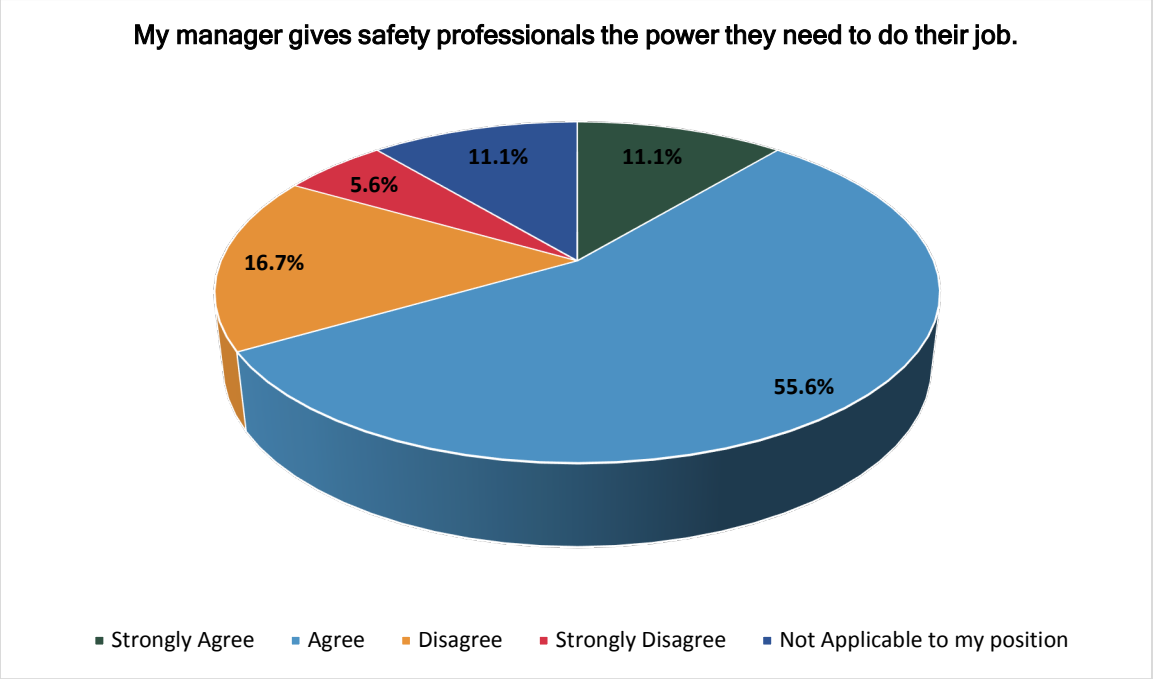
Question 28

My manager provides workers with sufficient information on safety and risk management issues.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	5.6%	1
Agree	72.2%	13
Disagree	11.1%	2
Strongly Disagree	5.6%	1
Not Applicable to my position	5.6%	1
	answered question	18
	skipped question	1



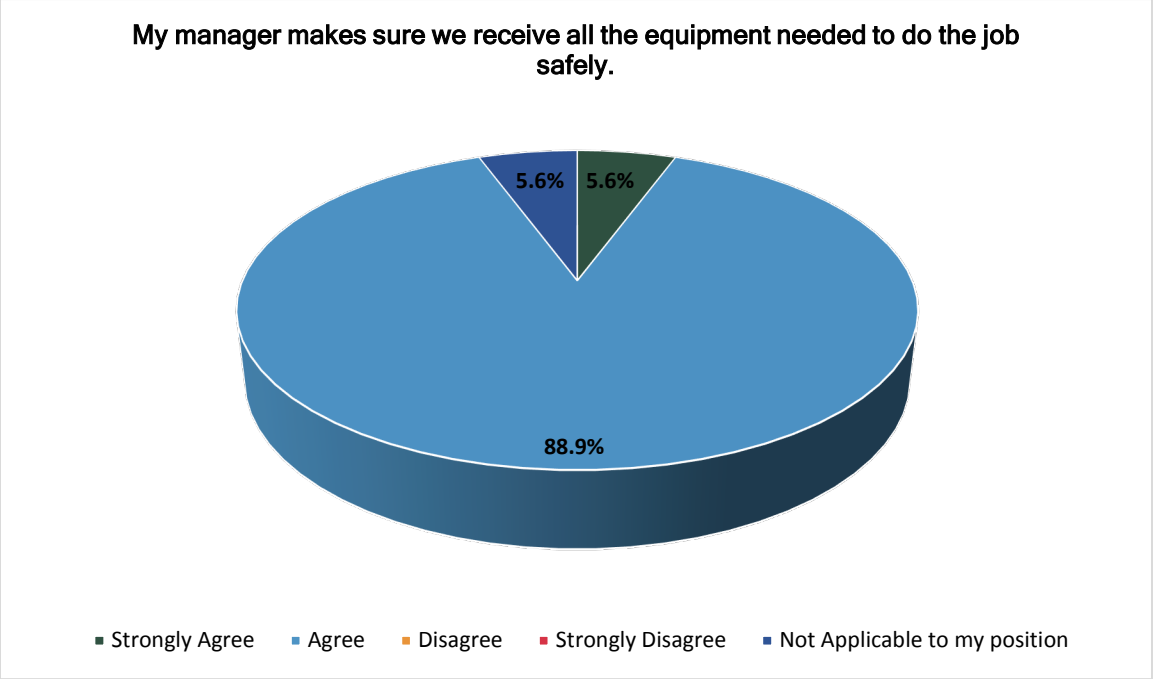
Question 29

My manager gives safety professionals the power they need to do their job.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	11.1%	2
Agree	55.6%	10
Disagree	16.7%	3
Strongly Disagree	5.6%	1
Not Applicable to my position	11.1%	2
	answered question	18
	skipped question	1



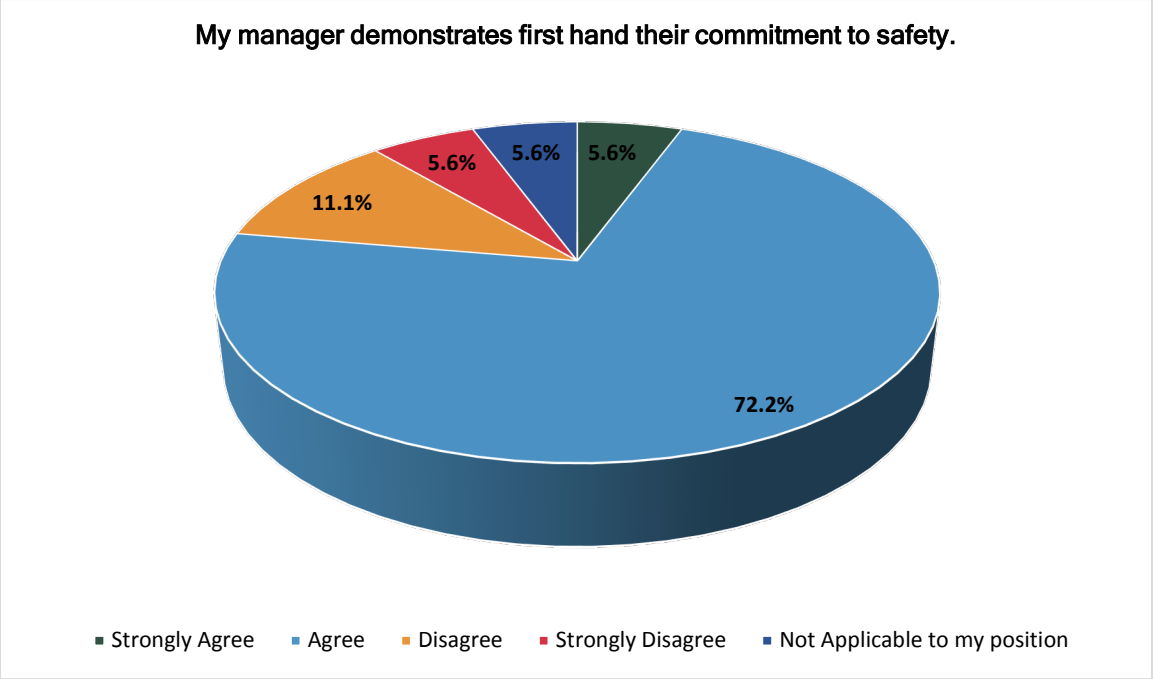
Question 30

My manager makes sure we receive all the equipment needed to do the job safely.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	5.6%	1
Agree	88.9%	16
Disagree	0.0%	0
Strongly Disagree	0.0%	0
Not Applicable to my position	5.6%	1
	answered question	18
	skipped question	1



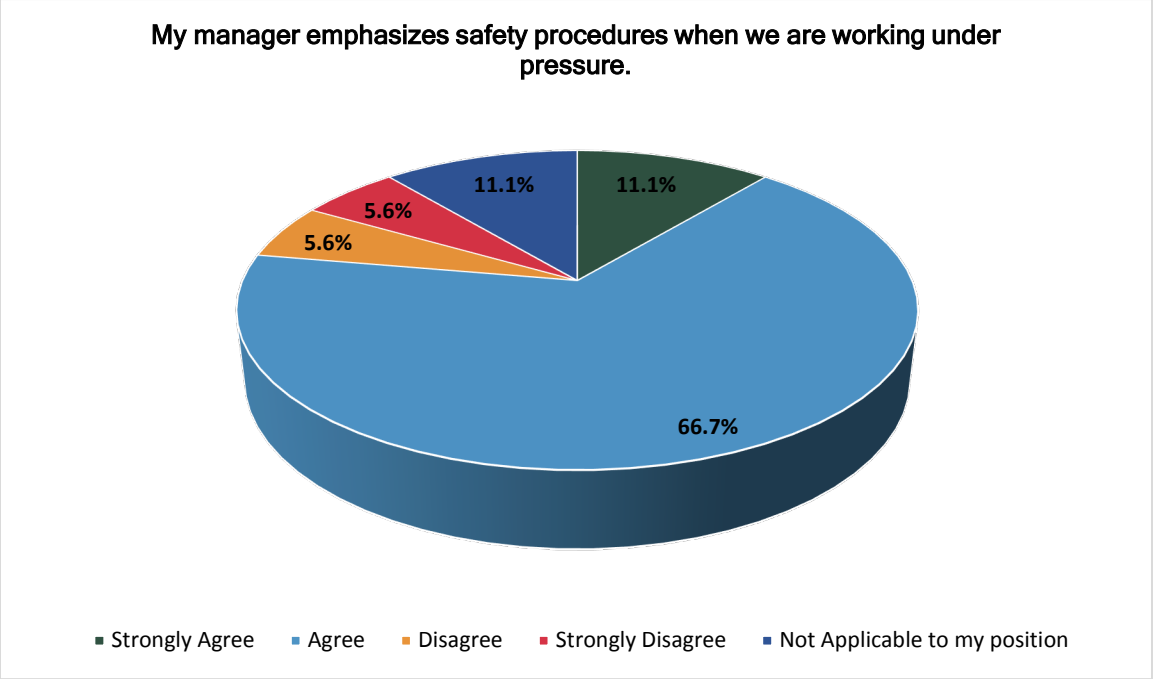
Question 31

My manager demonstrates first hand their commitment to safety.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	5.6%	1
Agree	72.2%	13
Disagree	11.1%	2
Strongly Disagree	5.6%	1
Not Applicable to my position	5.6%	1
	answered question	18
	skipped question	1



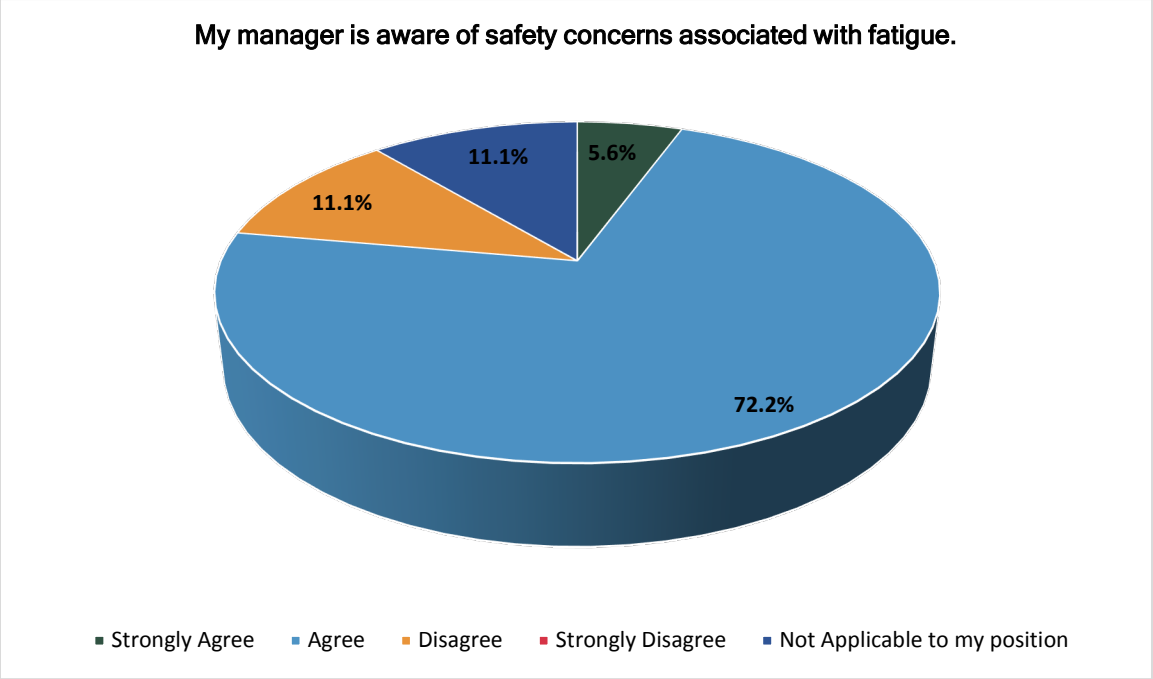
Question 32

My manager emphasizes safety procedures when we are working under pressure.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	11.1%	2
Agree	66.7%	12
Disagree	5.6%	1
Strongly Disagree	5.6%	1
Not Applicable to my position	11.1%	2
	answered question	18
	skipped question	1



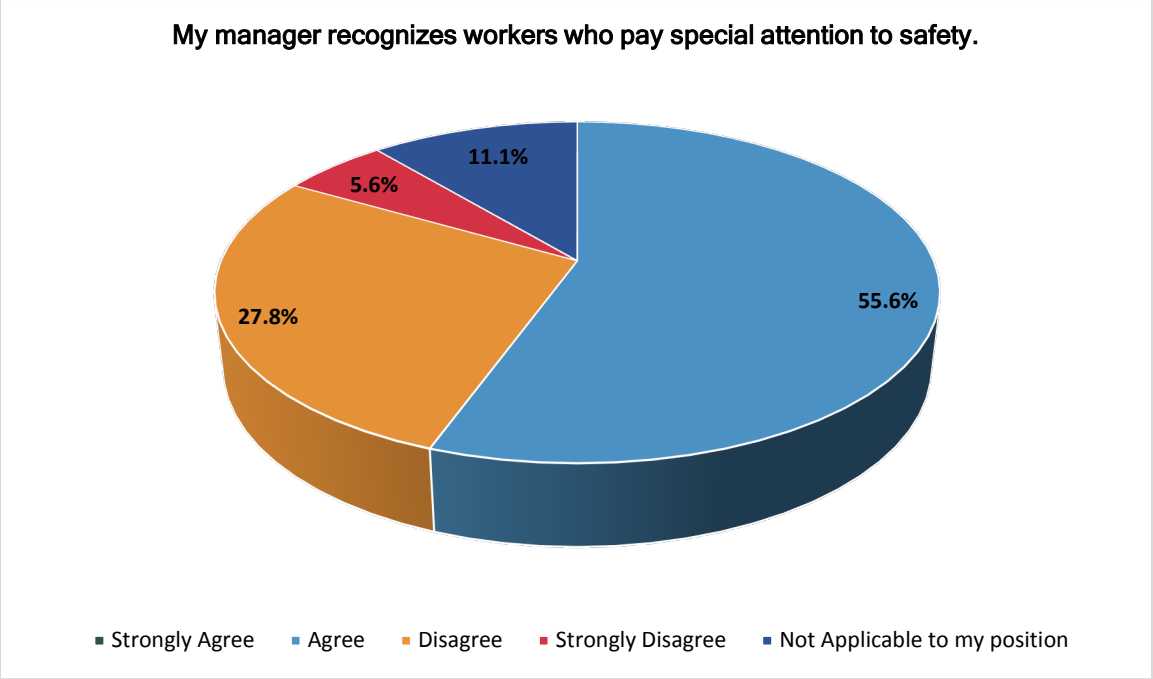
Question 33

My manager is aware of safety concerns associated with fatigue.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	5.6%	1
Agree	72.2%	13
Disagree	11.1%	2
Strongly Disagree	0.0%	0
Not Applicable to my position	11.1%	2
	answered question	18
	skipped question	1



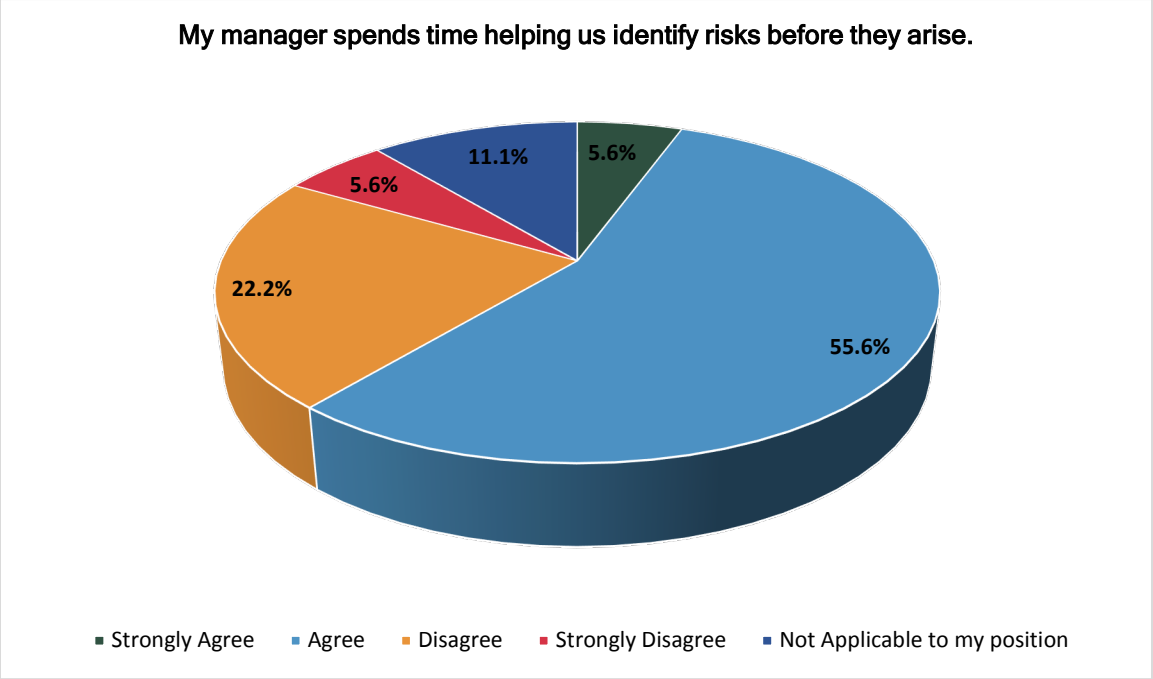
Question 34

My manager recognizes workers who pay special attention to safety.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	0.0%	0
Agree	55.6%	10
Disagree	27.8%	5
Strongly Disagree	5.6%	1
Not Applicable to my position	11.1%	2
	answered question	18
	skipped question	1



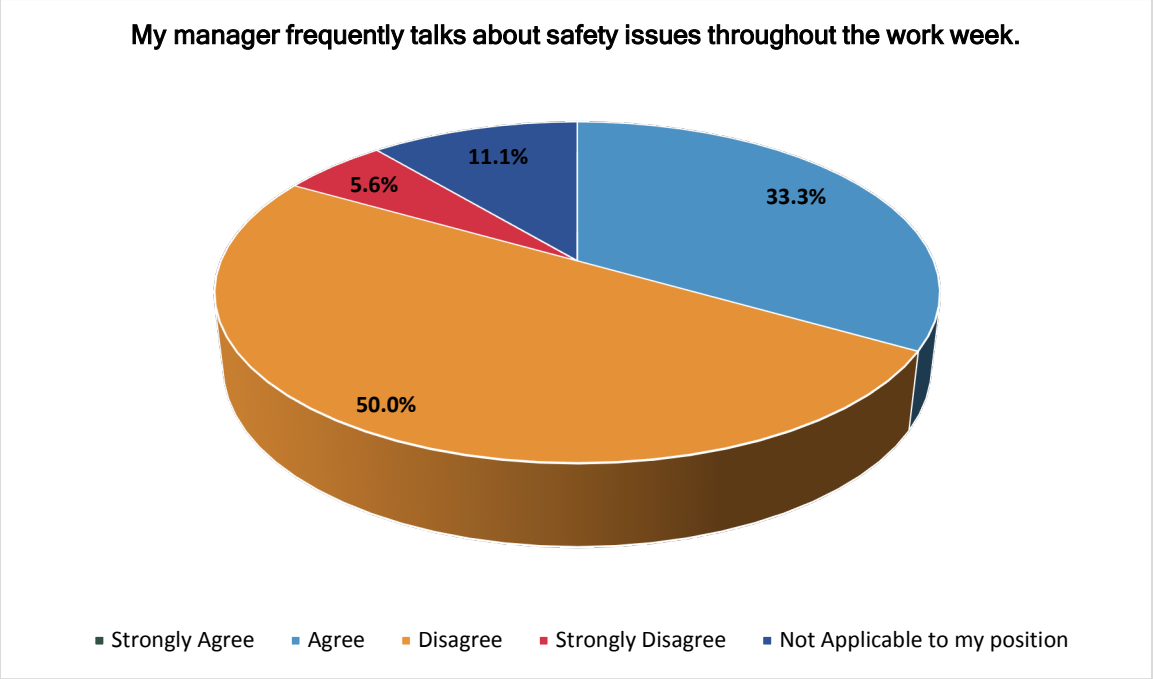
Question 35

My manager spends time helping us identify risks before they arise.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	5.6%	1
Agree	55.6%	10
Disagree	22.2%	4
Strongly Disagree	5.6%	1
Not Applicable to my position	11.1%	2
	answered question	18
	skipped question	1



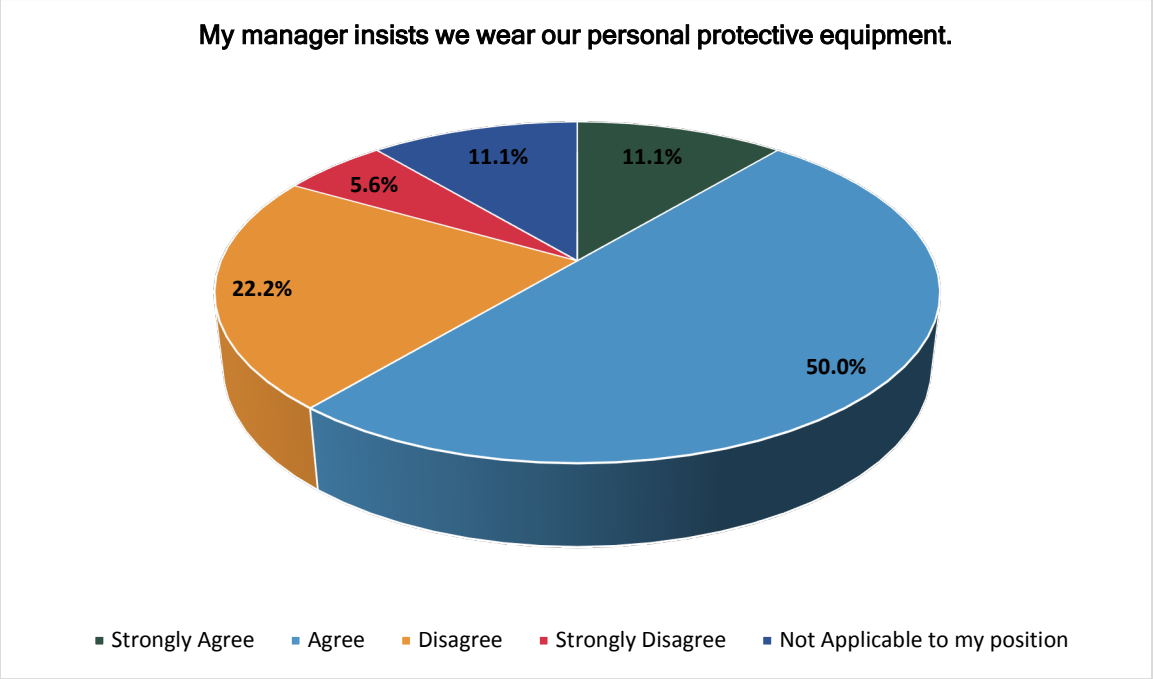
Question 36

My manager frequently talks about safety issues throughout the work week.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	0.0%	0
Agree	33.3%	6
Disagree	50.0%	9
Strongly Disagree	5.6%	1
Not Applicable to my position	11.1%	2
	answered question	18
	skipped question	1



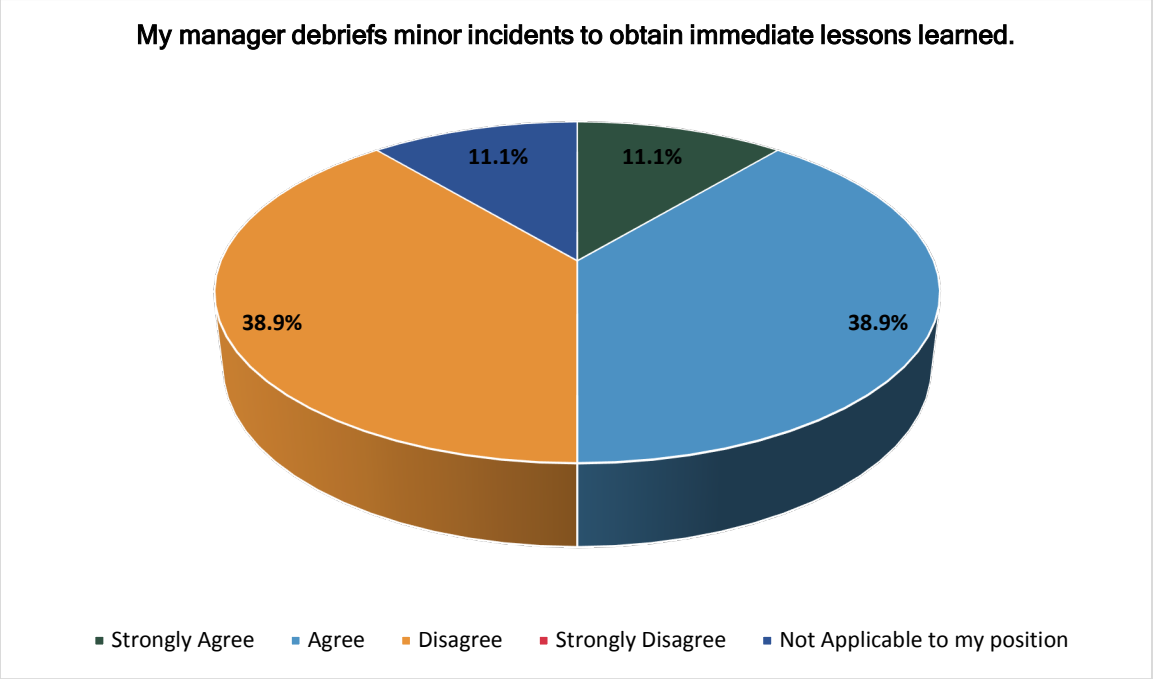
Question 37

My manager insists we wear our personal protective equipment.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	11.1%	2
Agree	50.0%	9
Disagree	22.2%	4
Strongly Disagree	5.6%	1
Not Applicable to my position	11.1%	2
	answered question	18
	skipped question	1



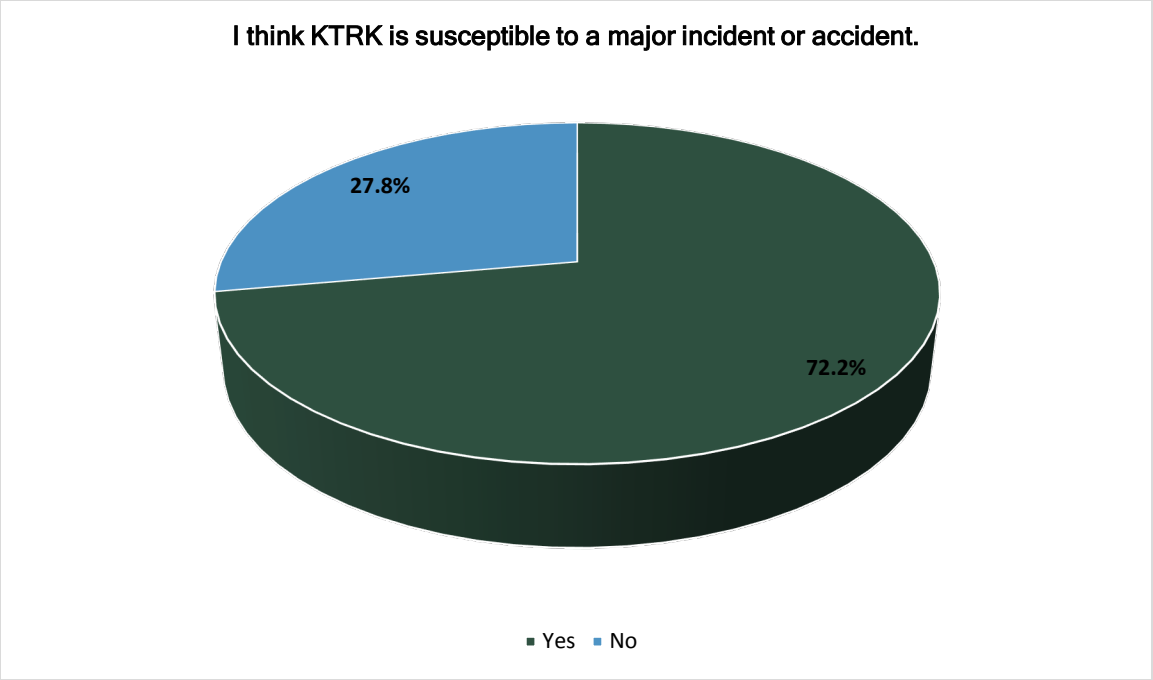
Question 38

My manager debriefs minor incidents to obtain immediate lessons learned.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	11.1%	2
Agree	38.9%	7
Disagree	38.9%	7
Strongly Disagree	0.0%	0
Not Applicable to my position	11.1%	2
	answered question	18
	skipped question	1



Question 39

I think KTRK is susceptible to a major incident or accident.		
Answer Options	**Response Percent**	**Response Count**
Yes	72.2%	13
No	27.8%	5
	answered question	18
	skipped question	1



Question 40

If you answered 'Yes' to the previous question, please describe your concerns:	
Answer Options	Response Count
	13
answered question	13
skipped question	6

Number	Response Date	Response Text	Categories
1	Apr 6, 2015 4:11 PM	we work around aircraft	
2	Apr 6, 2015 3:35 PM	Aircraft crashes or incidents are a common occurrence at KTRK	
3	Apr 3, 2015 2:41 PM	Major incidents at this airport that I have witnessed in the past 9 years have involved aircraft in flight. These incidents have all been associated with pilot error. Most times, accidents have been weather related.	
4	Apr 1, 2015 10:06 PM	Density altitude, mountainous terrain. Airports in general are dangerous.	
5	Apr 1, 2015 10:05 PM	VISITING PILOTS, DENSITY ALTITUDE, GLIDER AND JET MIX OF AIRCRAFT, MOUNTAINOUS TERRAIN, WIND SHEAR ETC....	
6	Mar 27, 2015 7:54 PM	Mountain flying is inherently dangerous. During very busy times with multiple planes in the pattern and vicinity including jets, prop planes, helicopters, gliders and maybe skydivers at some point (It gets busier every year) I think it is more and more likely we may have a major accident. (I consider an collision in the air or on the ground major)	
7	Mar 26, 2015 10:44 PM	Runway incursions from poorly planned construction activity, non-certified personnel driving a vehicle on the movement surface, snow removal while runway is open or active.	
8	Mar 25, 2015 3:42 PM	Aircraft vs people vs vehicles vs other aircraft. Lots of things could happen at an uncontrolled field.	
9	Mar 25, 2015 2:03 AM	My concern is for a major aircraft incident. When we are extremely busy there is too much air traffic. I've seen two aircraft unknowingly on final approach side by side at the same time. The radio is so busy you can't even warn them. We also have a problem with pilots talking over each other during busy times.	
10	Mar 24, 2015 10:36 PM	Susceptible doesn't mean I believe we're likely to have a problem, but we average about 2 aviation accidents per year and the fact is, we are in a high-risk environment. Icy, cold winters, fire dangers in the summer, fuel storage, etc.	
11	Mar 24, 2015 3:00 AM	Staff safety is improving but public is able to roam around the ramp at will. Kids and animals sometimes run loose.	
12	Mar 23, 2015 9:29 PM	High altitude airport with close in surrounding mountains with erratic winds and changeable weather.	
13	Mar 18, 2015 11:12 PM	NOT A LOT OF SUPPORT IN REGARDS TO EMPLOYEE SAFETY FROM SOME OF THE OPERATIONS/ MAINTENANCE MANAGEMENT AND STAFF	

Question 41

Please provide any additional comments you may have related to safety at the Truckee Tahoe Airport (KTRK).

Answer Options	Response Count
	10
answered question	10
skipped question	9

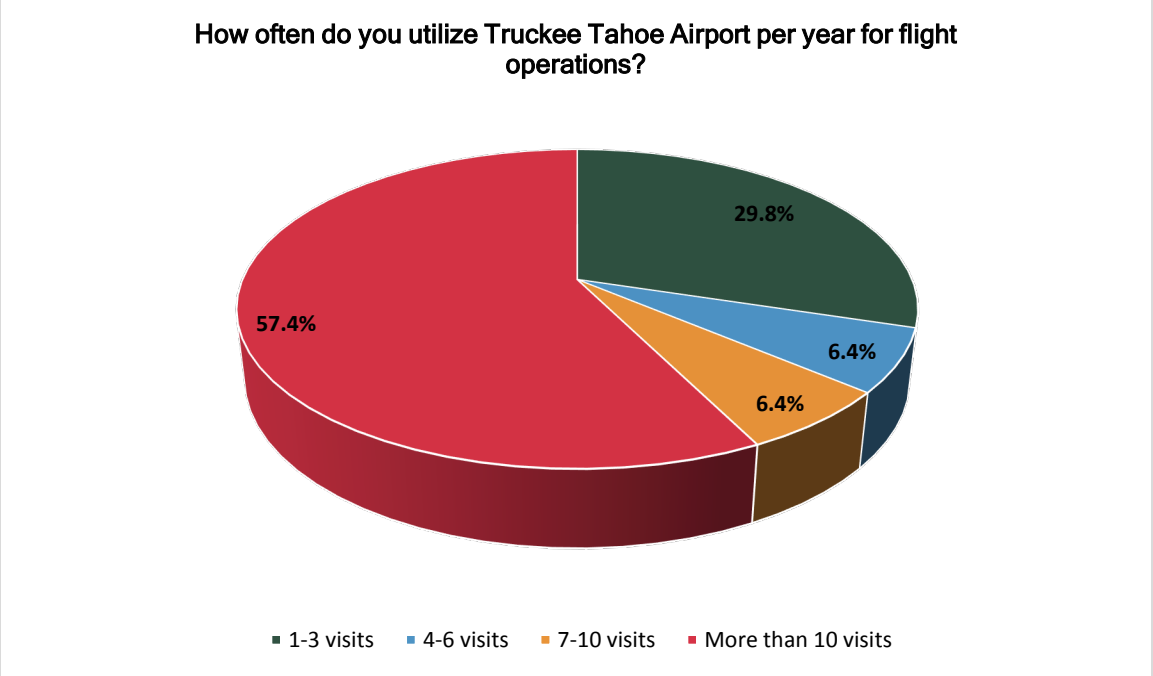
Number	Response Date	Response Text	Categories
1	Apr 3, 2015 2:41 PM	I think our safety record as a business / employer, is exceptional.	
2	Apr 1, 2015 10:06 PM	Policy seems to be implemented only after a complaint or incident occurs. Even then its is only followed or enforced for a brief period and then not supported by management. Lack of communication also creates a confusing and sometimes hostel work environment, that I believe can create a dangerous work environment. Being fearful to bring up a concern because of how you will be viewed/treated in the eyes of you coworkers/managers, then if it is brought up given an unclear answer or being told "I'll check on that and get back to you" with no actual follow up.	
3	Apr 1, 2015 10:05 PM	GOOD, BUT COULD BE BETTER	
4	Mar 26, 2015 10:44 PM	A higher level of safety communication and open discussion needs to take place. When operations and maintenance activity is taking place we need an organization wide way of talking about this activity and doing a pre-work safety assessment.	
5	Mar 25, 2015 3:42 PM	Workers here are concerned, for the most part, for their and others safety. When unsafe situations occur, there is no problem discussing it and correcting it (in my opinion). I have noticed that designated safety officer is not given autonomy and authority unlike other firm where I have worked where the safety officer answered only to the president of the firm. Our safety budget is OK but could be enlarged given the risks of even a single accident.	
6	Mar 25, 2015 2:03 AM	I believe we make a conscious effort to be safe. Do to the nature of my job it may happen that I have not performed a procedure in a long time and so I am sometimes not as confident in what I am doing as I would like to be. I am also sometimes working on things with which I don't have much experience.	
7	Mar 24, 2015 10:36 PM	I believe we do a very good job overall and provide staff with opportunity and equipment to better negotiate the safety hazards inherent in this occupation.	
8	Mar 24, 2015 3:00 AM	I span over two different supervisors shifts and sometimes get two different sets of directions.	
9	Mar 24, 2015 12:16 AM	Safety has been a big priority since I joined the team. Shortcuts & circumventing safety procedures is discouraged by all staff. I feel people have my back, safety -wise at KTRK.	
10	Mar 18, 2015 11:12 PM	EMPLOYEES ARE OPEN TO A CULTURE OF SAFETY NOT TOTALLY SUPPORTED BY MANAGEMENT. MANAGEMENT MUCH MORE CONCERNED OVER AVIATION SAFETY COMPARED TO EMPLOYEE SAFETY.	

Appendix 08 – Visiting Owner/Operator/Pilot Survey

The following questions were used on the visiting owner/operator/pilot survey we deployed before our site visit. The data collected from this survey was used as part of our comprehensive analysis and assessment.

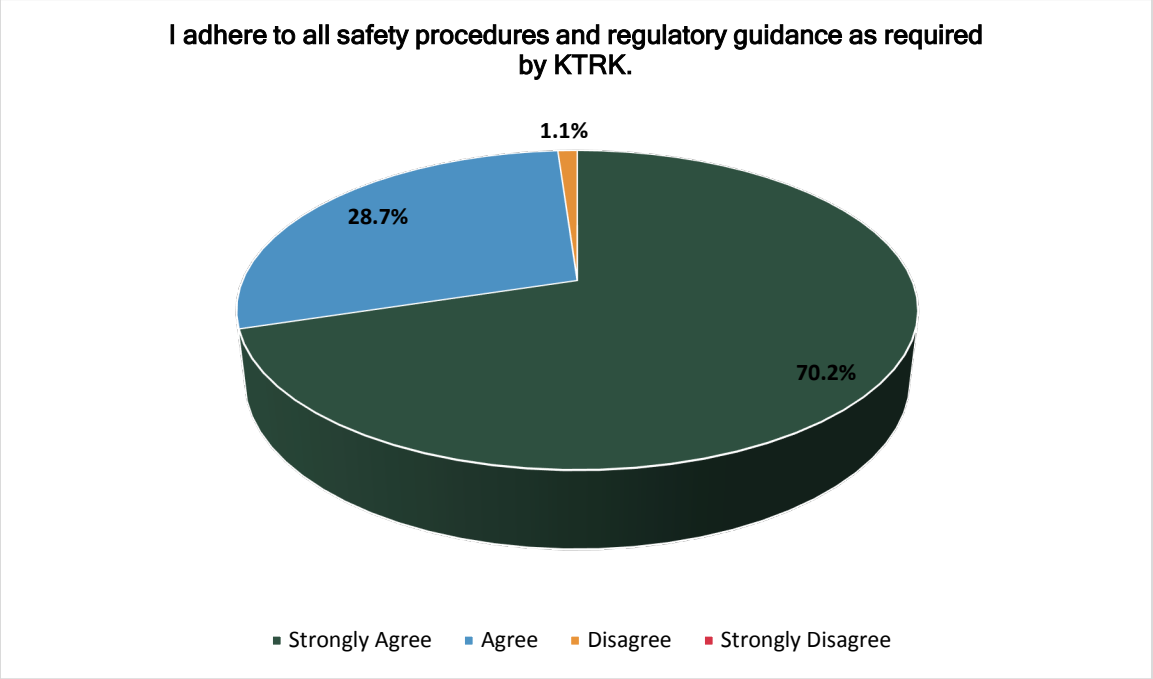
Question 1

How often do you utilize Truckee Tahoe Airport per year for flight operations?		
Answer Options	**Response Percent**	**Response Count**
1-3 visits	29.8%	28
4-6 visits	6.4%	6
7-10 visits	6.4%	6
More than 10 visits	57.4%	54
	answered question	94
	skipped question	0



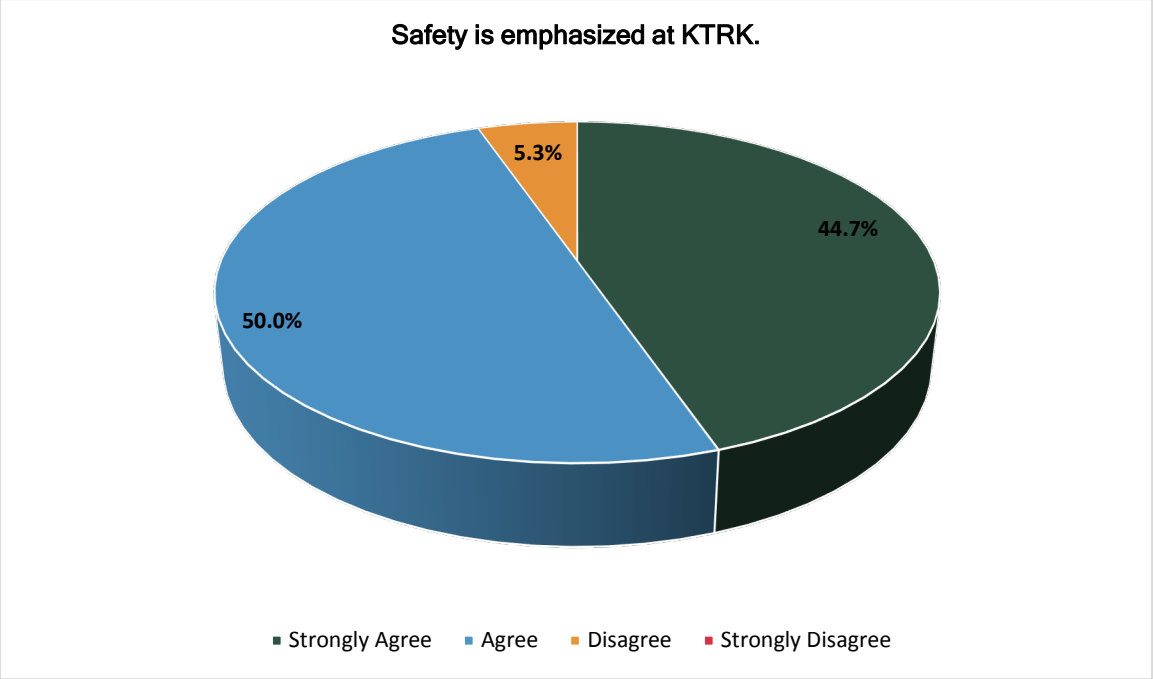
Question 2

I adhere to all safety procedures and regulatory guidance as required by KTRK.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	70.2%	66
Agree	28.7%	27
Disagree	1.1%	1
Strongly Disagree	0.0%	0
	answered question	94
	skipped question	0



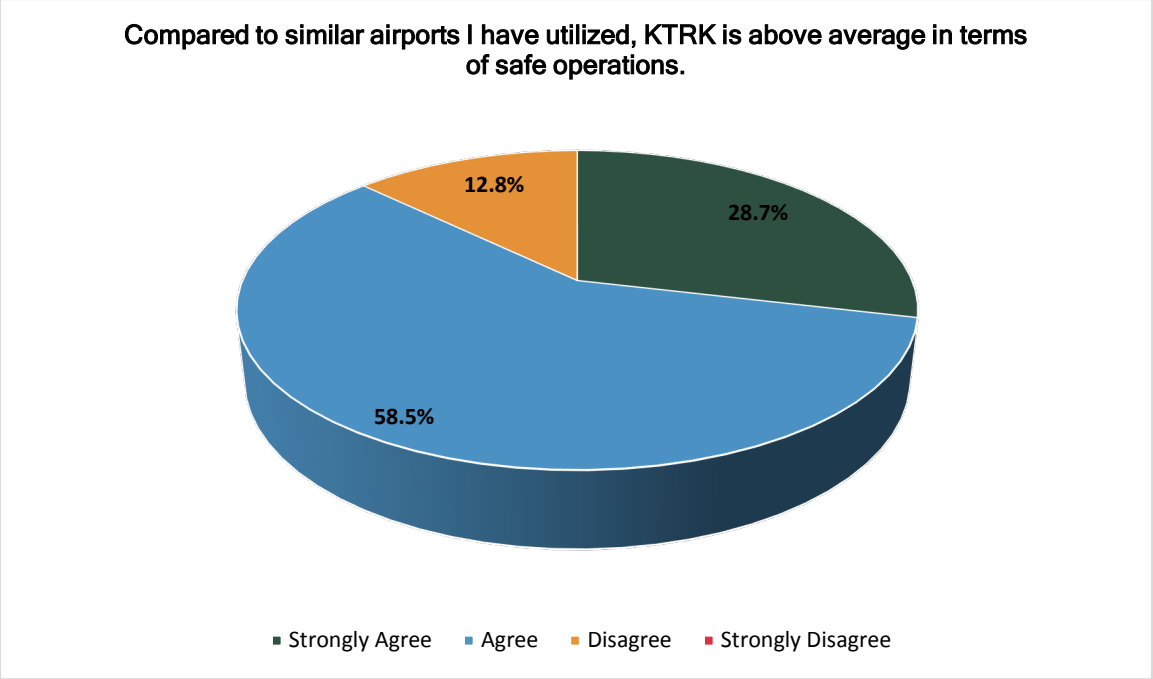
Question 3

Safety is emphasized at KTRK.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	44.7%	42
Agree	50.0%	47
Disagree	5.3%	5
Strongly Disagree	0.0%	0
	answered question	94
	skipped question	0



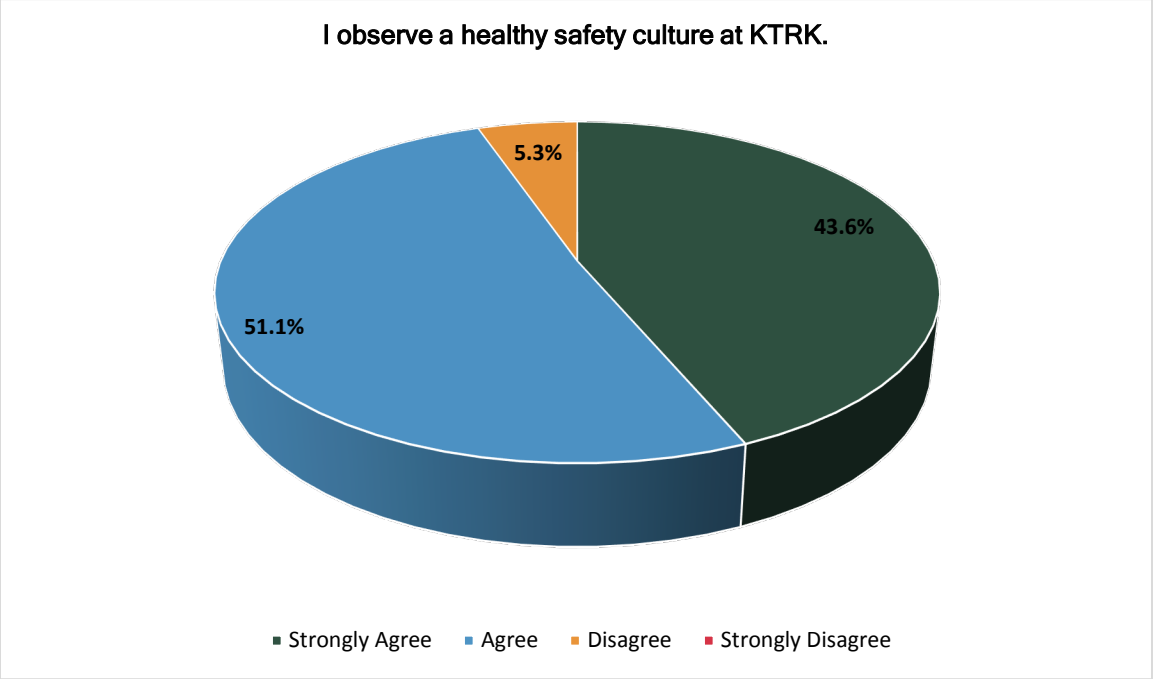
Question 4

Compared to similar airports I have utilized, KTRK is above average in terms of safe operations.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	28.7%	27
Agree	58.5%	55
Disagree	12.8%	12
Strongly Disagree	0.0%	0
	answered question	94
	skipped question	0



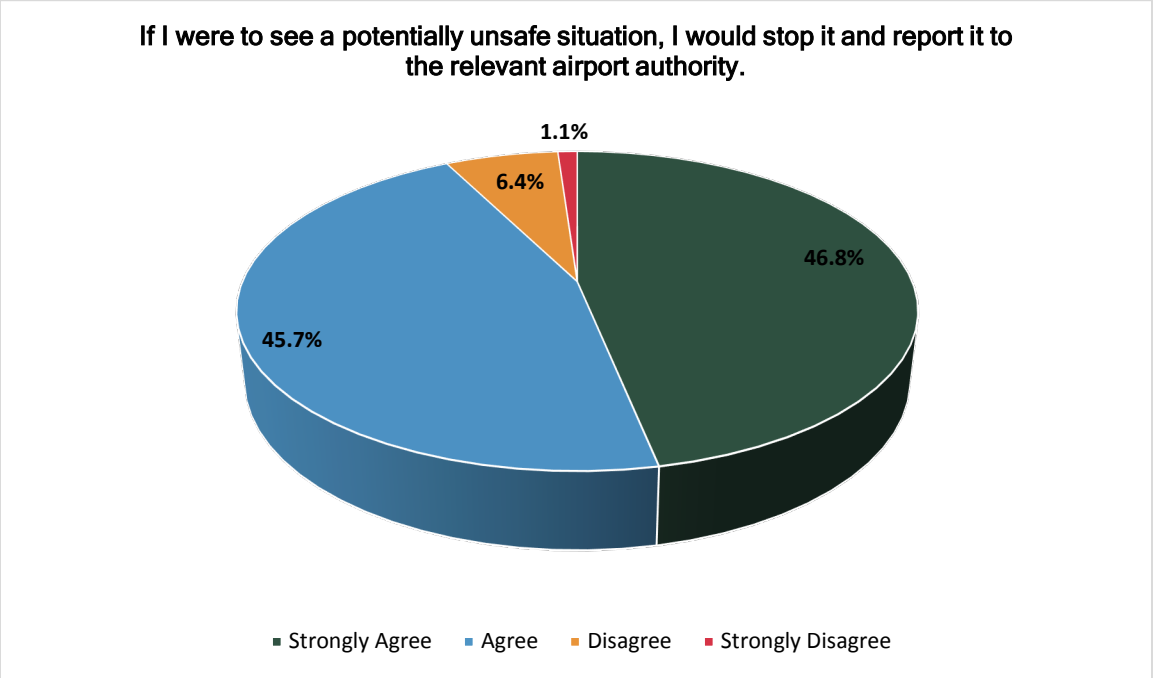
Question 5

I observe a healthy safety culture at KTRK.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	43.6%	41
Agree	51.1%	48
Disagree	5.3%	5
Strongly Disagree	0.0%	0
	answered question	94
	skipped question	0



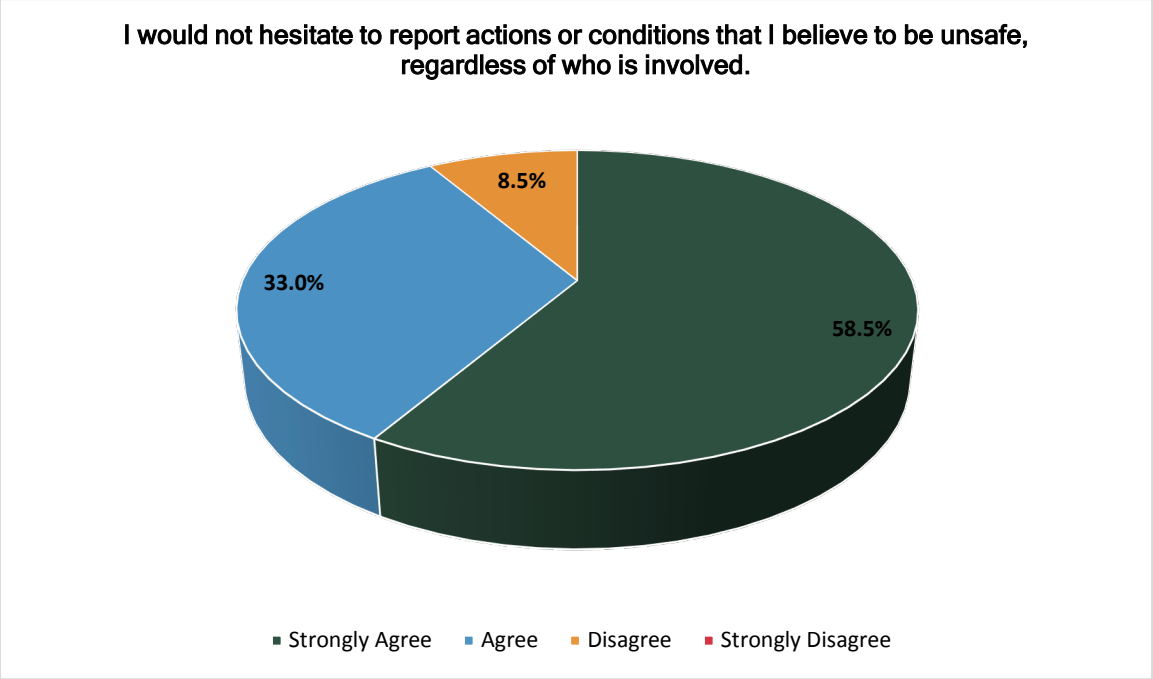
Question 6

If I were to see a potentially unsafe situation, I would stop it and report it to the relevant airport authority.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	46.8%	44
Agree	45.7%	43
Disagree	6.4%	6
Strongly Disagree	1.1%	1
	answered question	94
	skipped question	0



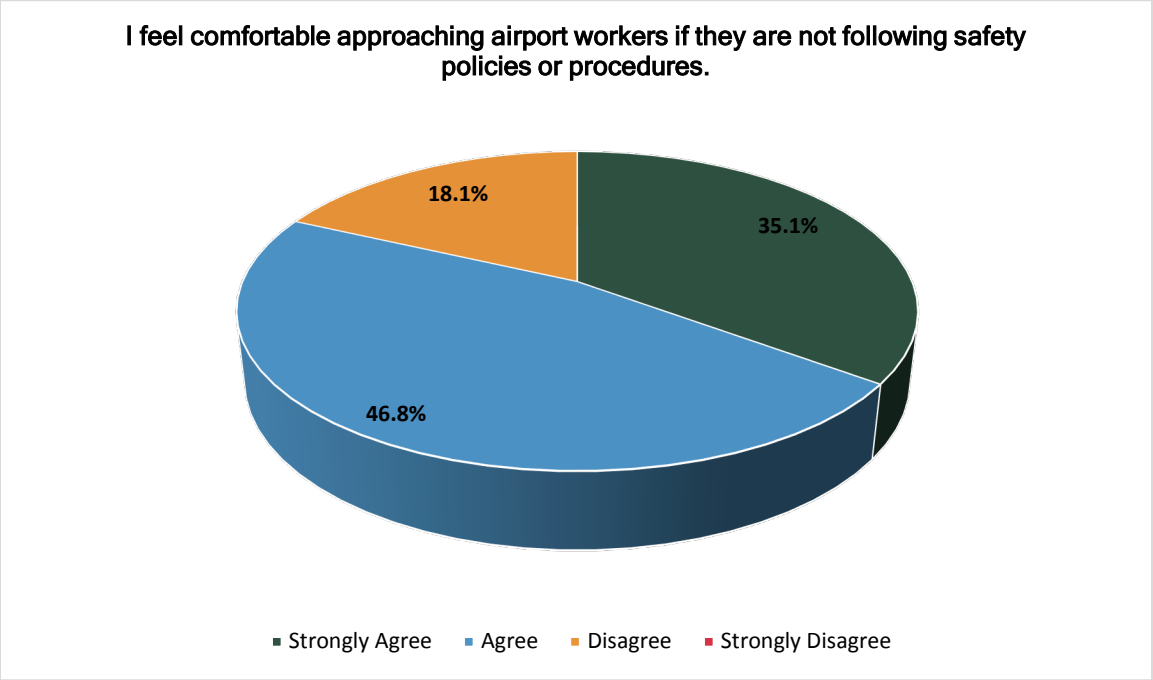
Question 7

I would not hesitate to report actions or conditions that I believe to be unsafe, regardless of who is involved.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	58.5%	55
Agree	33.0%	31
Disagree	8.5%	8
Strongly Disagree	0.0%	0
	answered question	94
	skipped question	0



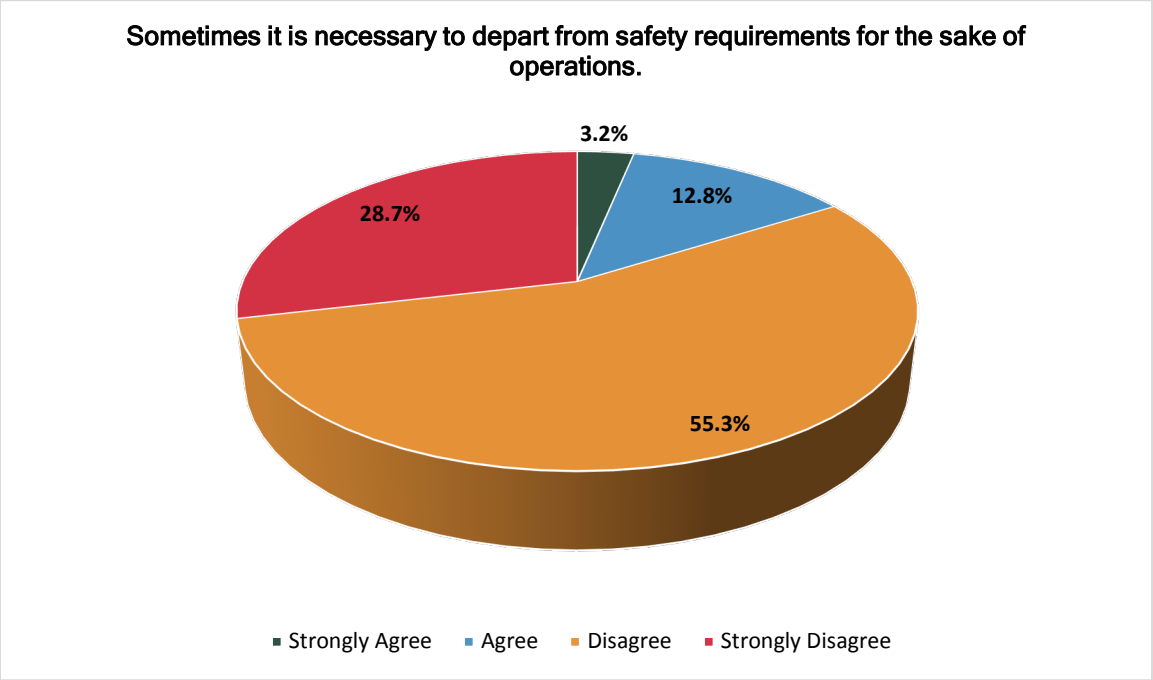
Question 8

I feel comfortable approaching airport workers if they are not following safety policies or procedures.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	35.1%	33
Agree	46.8%	44
Disagree	18.1%	17
Strongly Disagree	0.0%	0
	answered question	94
	skipped question	0



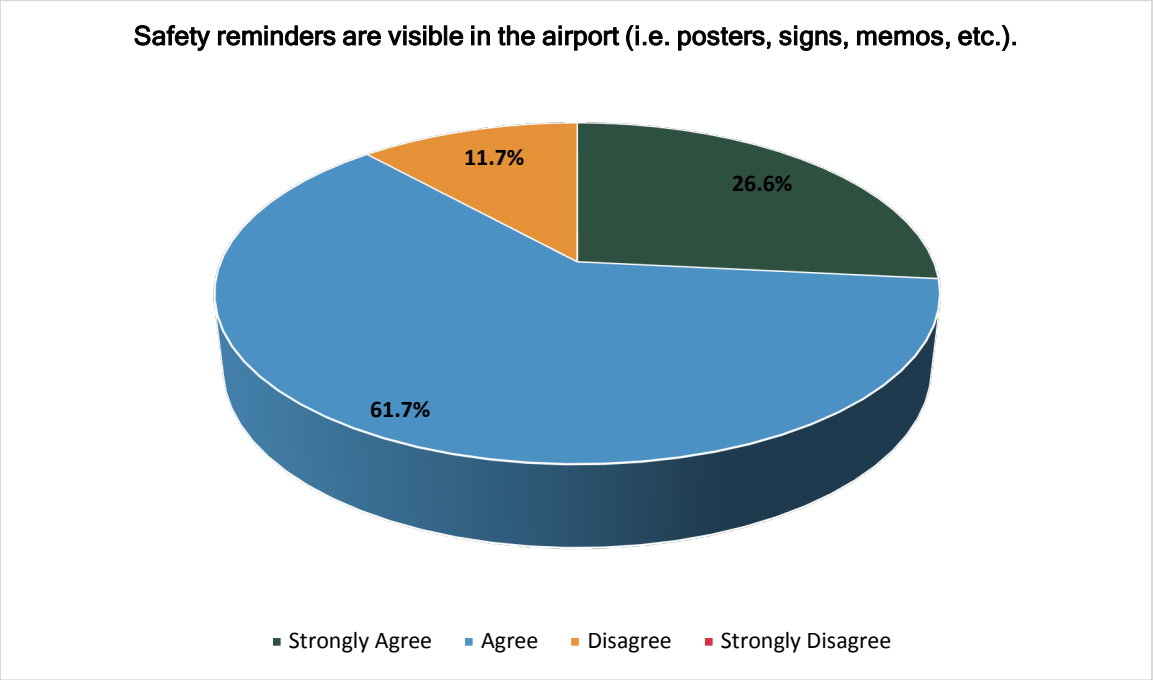
Question 9

Sometimes it is necessary to depart from safety requirements for the sake of operations.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	3.2%	3
Agree	12.8%	12
Disagree	55.3%	52
Strongly Disagree	28.7%	27
	answered question	94
	skipped question	0



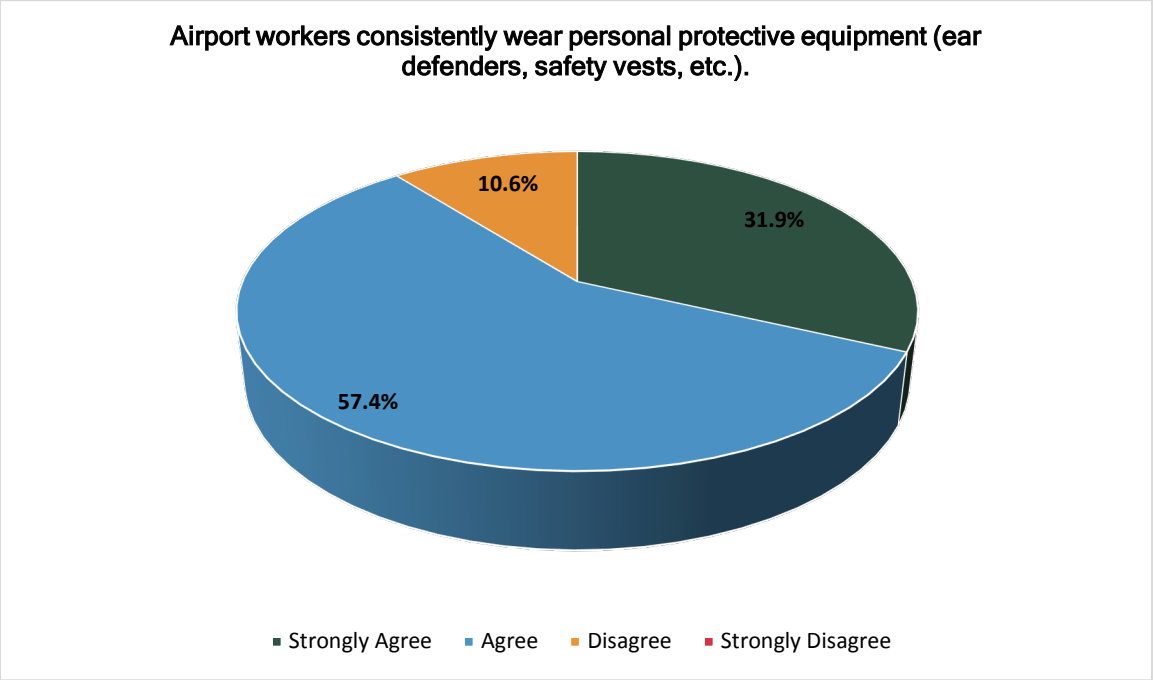
Question 10

Safety reminders are visible in the airport (i.e. posters, signs, memos, etc.).		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	26.6%	25
Agree	61.7%	58
Disagree	11.7%	11
Strongly Disagree	0.0%	0
	answered question	94
	skipped question	0



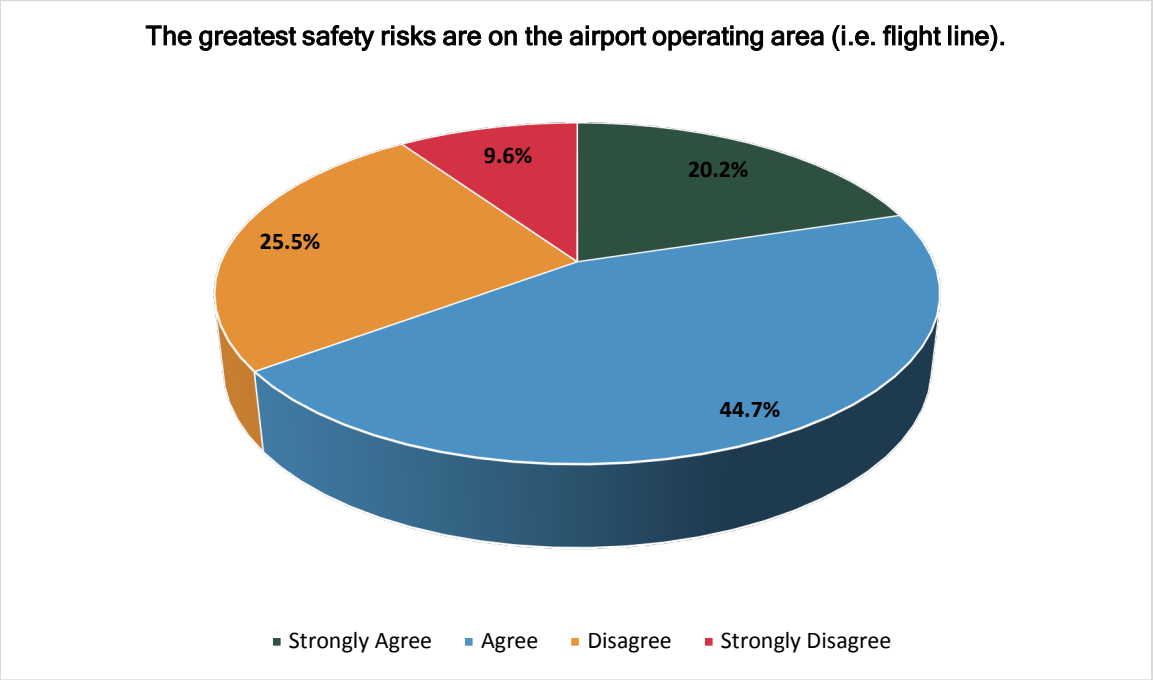
Question 11

Airport workers consistently wear personal protective equipment (ear defenders, safety vests, etc.).		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	31.9%	30
Agree	57.4%	54
Disagree	10.6%	10
Strongly Disagree	0.0%	0
	answered question	94
	skipped question	0



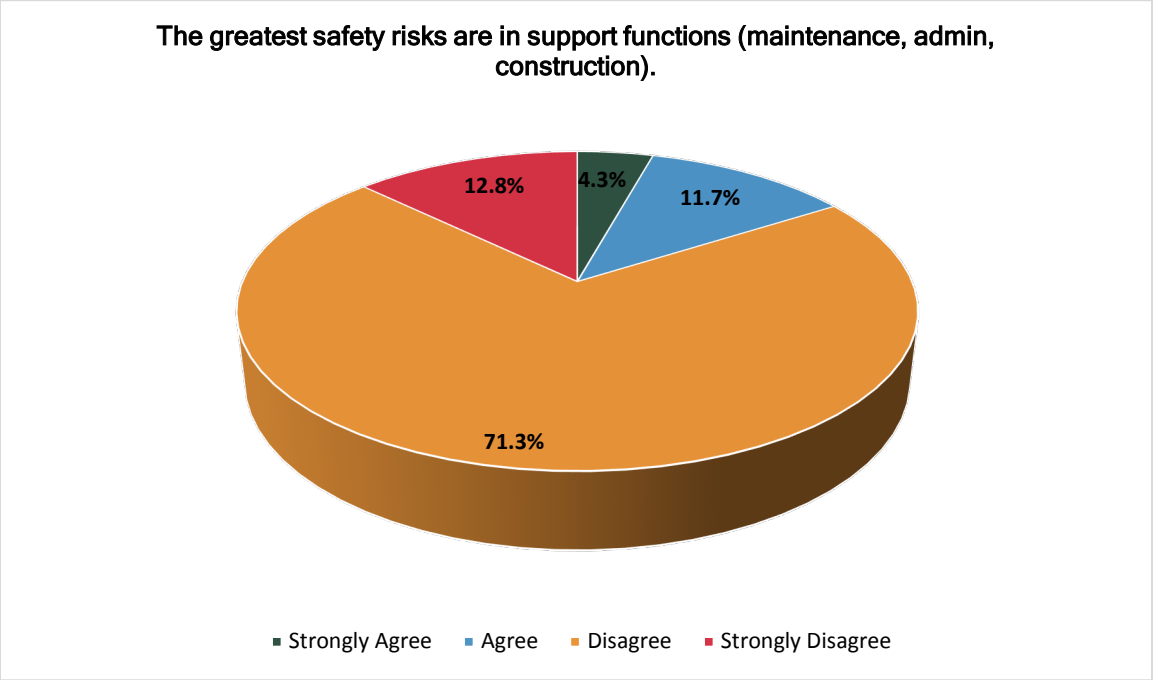
Question 12

The greatest safety risks are on the airport operating area (i.e. flight line).		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	20.2%	19
Agree	44.7%	42
Disagree	25.5%	24
Strongly Disagree	9.6%	9
	answered question	94
	skipped question	0



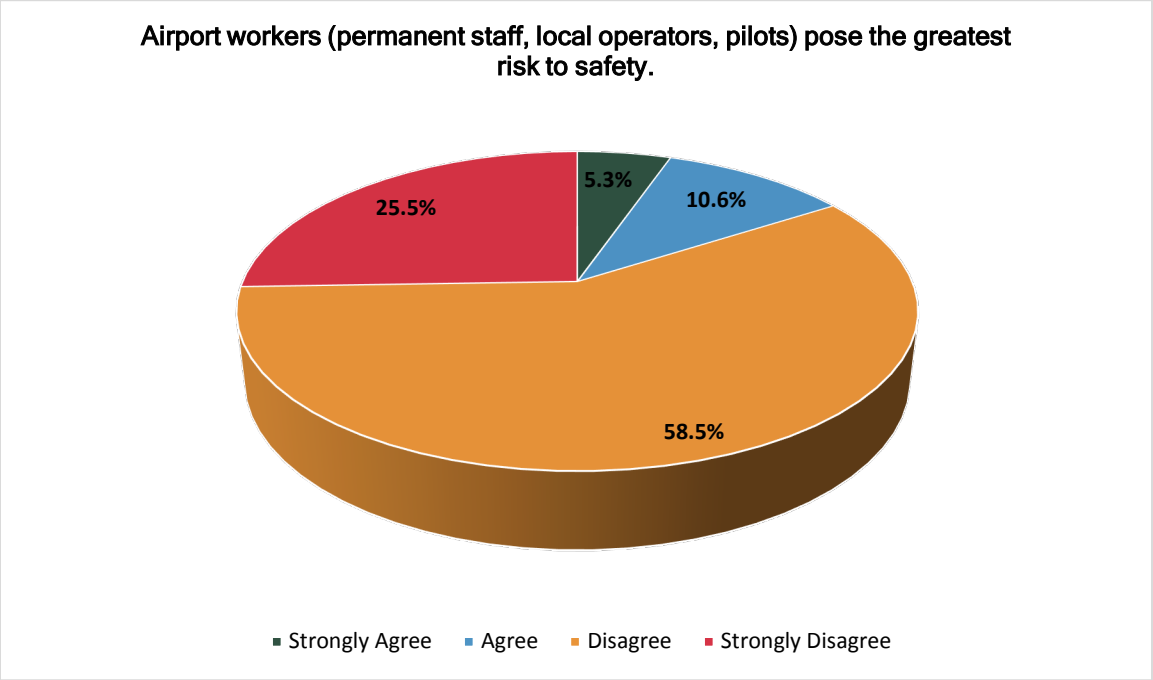
Question 13

The greatest safety risks are in support functions (maintenance, admin, construction).		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	4.3%	4
Agree	11.7%	11
Disagree	71.3%	67
Strongly Disagree	12.8%	12
	answered question	94
	skipped question	0



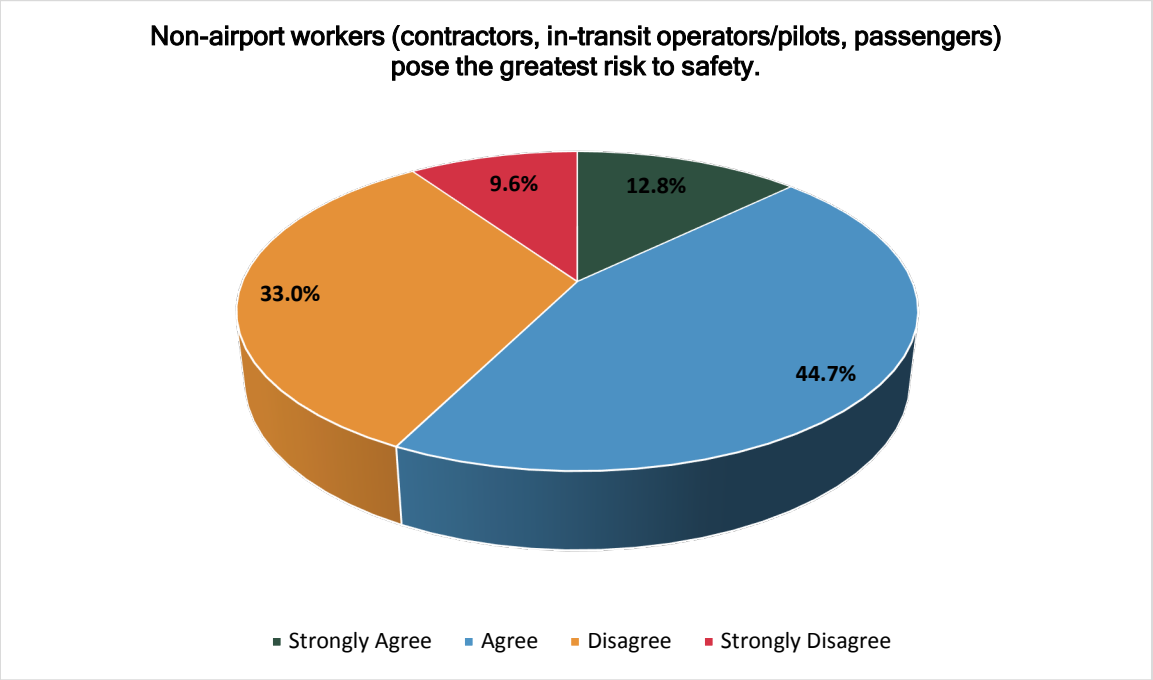
Question 14

Airport workers (permanent staff, local operators, pilots) pose the greatest risk to safety.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	5.3%	5
Agree	10.6%	10
Disagree	58.5%	55
Strongly Disagree	25.5%	24
	answered question	94
	skipped question	0



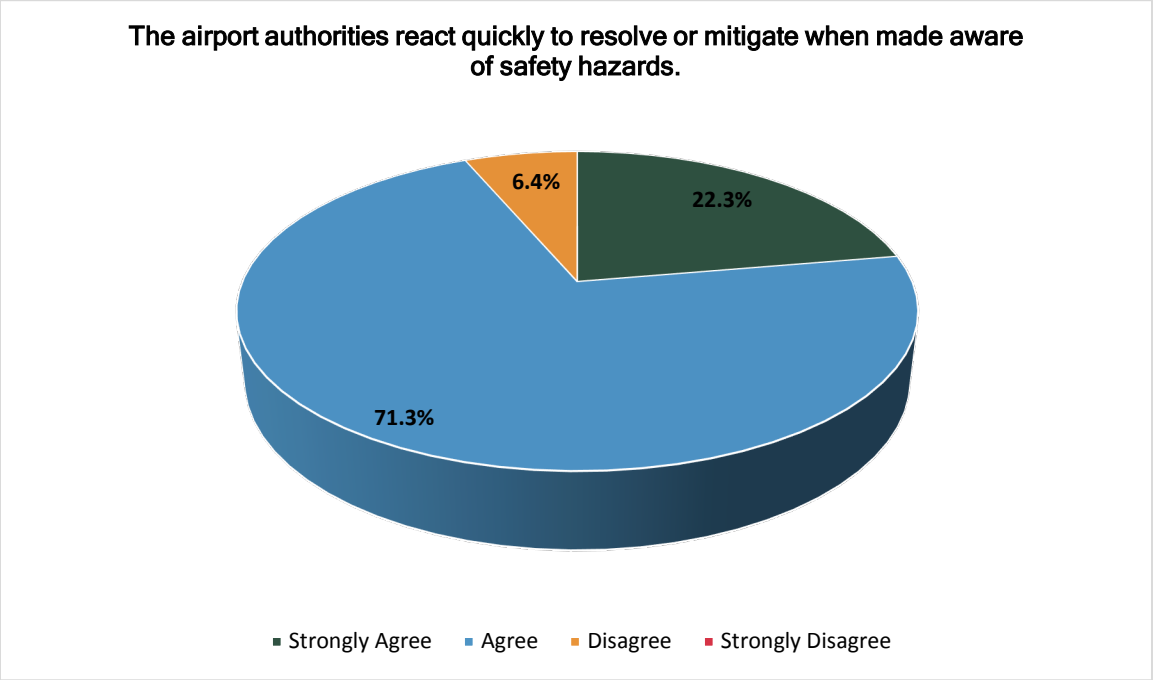
Question 15

Non-airport workers (contractors, in-transit operators/pilots, passengers) pose the greatest risk to safety.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	12.8%	12
Agree	44.7%	42
Disagree	33.0%	31
Strongly Disagree	9.6%	9
	answered question	94
	skipped question	0



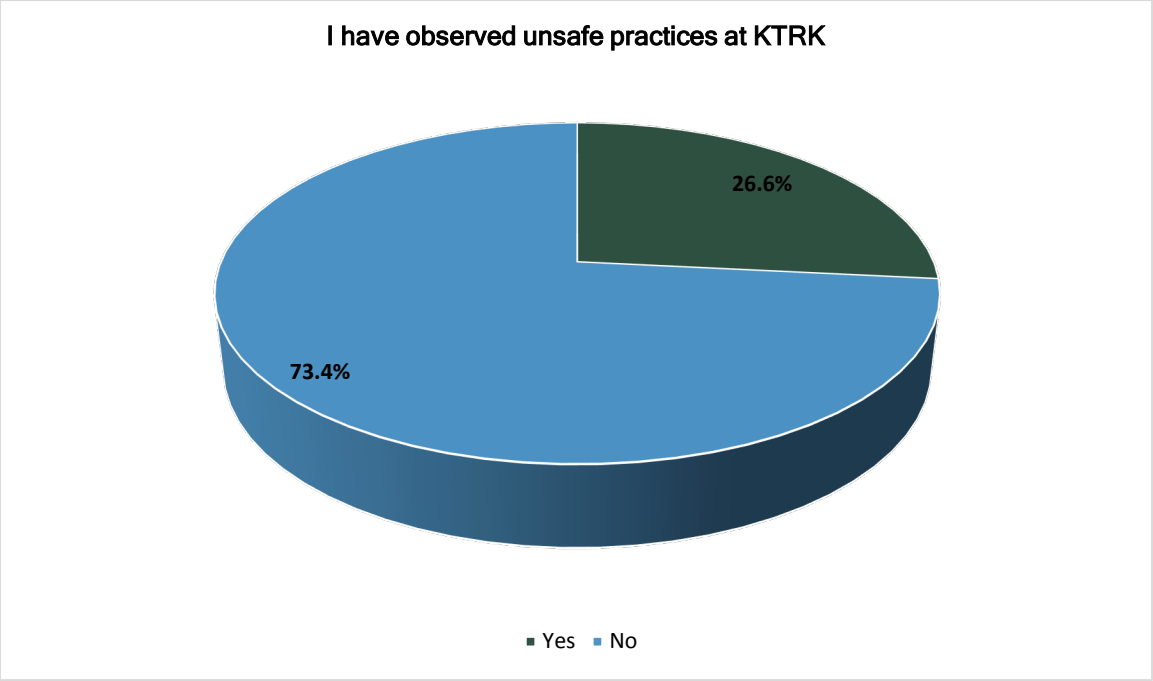
Question 16

The airport authorities react quickly to resolve or mitigate when made aware of safety hazards.		
Answer Options	**Response Percent**	**Response Count**
Strongly Agree	22.3%	21
Agree	71.3%	67
Disagree	6.4%	6
Strongly Disagree	0.0%	0
	answered question	94
	skipped question	0



Question 17

I have observed unsafe practices at KTRK		
Answer Options	**Response Percent**	**Response Count**
Yes	26.6%	25
No	73.4%	69
	answered question	94
	skipped question	0



Question 18

If you answered 'Yes' to the previous question, please explain:

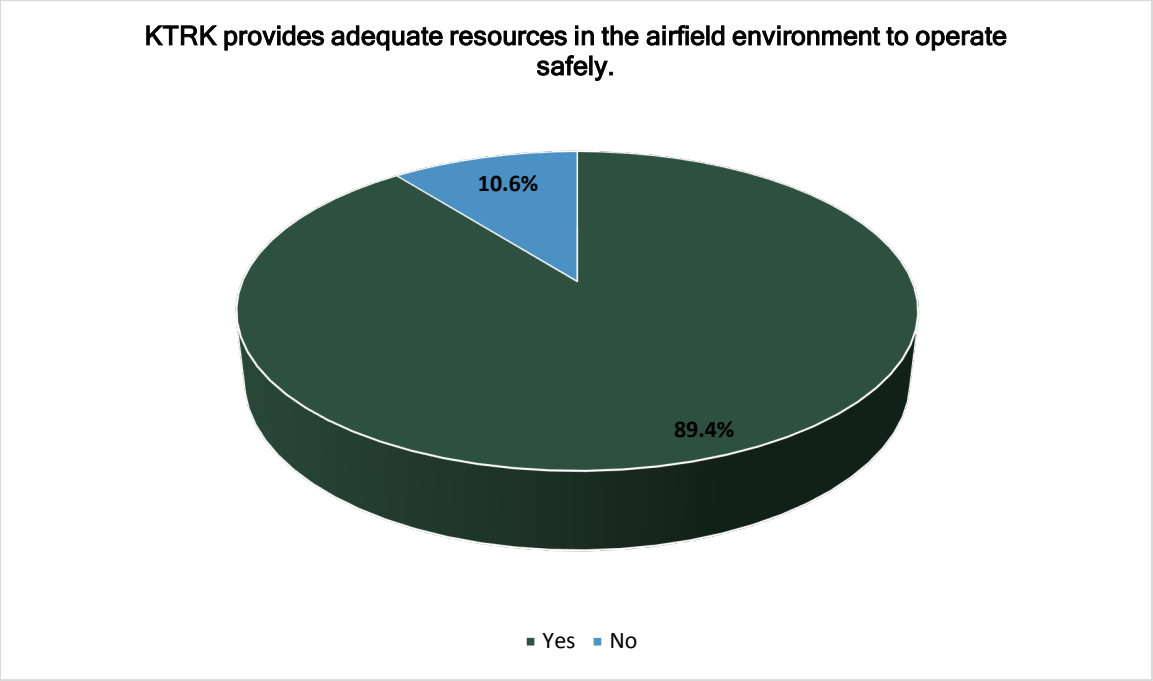
Answer Options	Response Count
	26
answered question	26
skipped question	68

Number	Response Date	Response Text	Categories
1	Apr 4, 2015 3:52 AM	No Duty Run way, Just a free for all. No direction by Unicom	
2	Apr 1, 2015 3:22 PM	Plane Crashes, off runway mishaps, poor judgment on approach procedures.	
3	Mar 31, 2015 4:20 PM	Visitors performing unsafe operations	
4	Mar 31, 2015 10:40 AM	Ice on the taxi way making it hard to push your airplane back into the hanger without help. Trip and fall	
5	Mar 30, 2015 7:40 PM	I have commented twice on Unicom that the personnel from the airport operating Unicom ask how long you will be staying in Truckee, while you are flying the pattern. This is an extremely unsafe practice as it requires the pilots take their eye off their flying and answer a foolish question for the convenience of the operations people. This question should be asked once we are on the ground and parked	
6	Mar 30, 2015 1:45 PM	Every once in a while and unsafe practice will happen at any large district or business. It is a good idea to to have training programs available to correct any mistakes that might help improve safety	
7	Mar 27, 2015 5:04 PM	Mostly pilots doing unsafe things	
8	Mar 27, 2015 3:16 AM	Approaches below mins, overloaded aircraft, bad attitude pilots, simultaneous runway use	
9	Mar 26, 2015 6:36 PM	left crosswind dep. direct donner summit SEL Piston A.C	
10	Mar 26, 2015 5:23 PM	[Left blank.]	
11	Mar 26, 2015 4:40 PM	Non response from Unicom on radio request	
12	Mar 26, 2015 1:35 AM	Poor and incorrect radio communications transmitted by transient pilots	
13	Mar 26, 2015 12:46 AM	MANY MANY years ago, I have seen pilots try to fly with ice/snow on wings.	
14	Mar 25, 2015 10:37 PM	I have witnessed private aircraft taking off when the conditions are less than favorable.	

Number	Response Date	Response Text	Categories
15	Mar 25, 2015 10:37 PM	We are dangerously close to needing a tower,, busy weekends are becoming very dangerous during approach and lading phase	
16	Mar 25, 2015 9:54 PM	Many density altitude near misses, departure into rising terrain, improper approach to the airport, glider traffic that does not adhere to safe operations.	
17	Mar 25, 2015 9:54 PM	KTRK suggested departure flight path for south flights is up the Truckee River Canyon requiring a turn in front of descending traffic at Donner lake then head-on to descending traffic from the VOR at Squaw and head-on to arriving traffic from the south all in a narrow canyon!! This also puts pilots in a dangerous position during takeoff and climb should there be an engine failure with no where to land! Southern departure procedures should incorporate a Rnwy 29 Downwind climbing departure for safety which would not pose an opposing traffic conflict and allow for a return to the airport if an engine failure.	
18	Mar 25, 2015 9:26 PM	I was with a pilot who did not lean the mixture for takeoff on a hot August day.	
19	Mar 25, 2015 9:06 PM	Large helicopter landing right outside public cafe and its outdoor eating area. Just today, in fact. The safety hazard was indirect - blowing debris at the public. No people or the aircraft were at risk. Large helis should land and shut down farther from the public.	
20	Mar 25, 2015 9:02 PM	Confused pilots. Making wrong calls.	
21	Mar 25, 2015 9:01 PM	Not NOTAMing taxi way's closed when having events near by with people walking around.	
22	Mar 25, 2015 8:16 PM	Pilots not on CTAF, and not using appropriate runway.	
23	Mar 25, 2015 8:11 PM	Lack of adequate radio calls from inbound pilots	
24	Mar 25, 2015 8:10 PM	I witnessed the Aztec crash	
25	Mar 25, 2015 8:08 PM	1. people unfamiliar with high elevation airport operations. 2. increased hanger fees for locals with small quiet airplanes who may need to fly outside of 'voluntary' curfew hours....even when they do it VERY quietly, and sometimes for safety reasons. They are then encouraged to forgo certain safety measures to be stealthy. Late arrival is a big one... a small single at idle descending in is quiet, and can be done nearly silently....but one may not take certain precautions they would otherwise... ie: make radio calls, use all available lighting, etc.	
26	Mar 25, 2015 8:03 PM	Multiple take-offs and landings on intersecting runways.	

Question 19

KTRK provides adequate resources in the airfield environment to operate safely.		
Answer Options	**Response Percent**	**Response Count**
Yes	89.4%	84
No	10.6%	10
	answered question	94
	skipped question	0



Question 20

If you answered 'No' to the previous question, what would you like offered or changed?

Answer Options	Response Count
	10
answered question	10
skipped question	84

Number	Response Date	Response Text	Categories
1	Apr 4, 2015 3:52 AM	Dedicated Duty run way. departure & approach corridors adhered to & maintained your lack of deicing and/or hangers available for short stays in order to melt snow off the plane is horrible. It is downright dangerous and very shortsighted.	
2	Mar 30, 2015 7:40 PM	The city should have one or 2 hangers that people can reserve that are available to place your plane in the night before that are heated so that pilots can melt the snow and/or ice off the planes.	
3	Mar 27, 2015 3:16 AM	Needs a seasonal tower	
4	Mar 26, 2015 5:23 PM	[left blank]	
5	Mar 26, 2015 12:46 AM	n/a	
6	Mar 25, 2015 10:37 PM	We May need a tower	
7	Mar 25, 2015 9:41 PM	More prompt radio interaction from Unicom.	
8	Mar 25, 2015 9:26 PM	A VASI for runway 29.	
9	Mar 25, 2015 8:16 PM	I think all non controlled airports should have multiple reminders to communicate on CTAF including on the ASOS and at runway entrances.	
10	Mar 25, 2015 8:03 PM	KTRK needs a control tower.	

Question 21

Please provide any additional comments you may have related to safety at the Truckee Tahoe Airport (KTRK).

Answer Options	Response Count
	24
answered question	24
skipped question	70

Number	Response Date	Response Text	Categories
1	Mar 31, 2015 10:40 AM	The trend of renting or using hangers for none aircraft uses. People not used to airplanes don't mix well with my propellers.if you want to fill the empty hangers with airplanes then lower the hanger rates.	
2	Mar 30, 2015 7:40 PM	your fueling practices are the most Byzantine I've seen at any airport in the US. The fact that I cannot call up in place of fuel order is insane. It results in people waiting to place their fuel order the moment they arrive at the airport and are therefore rush to leave.	
3	Mar 30, 2015 1:45 PM	Truckee is a beautiful will run airport	
4	Mar 27, 2015 5:04 PM	Airport personnel should be allowed to speak with pilots when those pilots act in an unsafe manner in the TRK environment. The airport should also have the discretion to refuse to sell aviation fuel to pilots that fly unsafely around TRK, or to pilots that frequently break the noise abatement rules.	
5	Mar 27, 2015 3:17 PM	Truckee needs to have reception of ADS B in data for current in cockpit weather information	
6	Mar 27, 2015 3:16 AM	High vis (yellow) fleet vehcles with reflective markings would enhance surface safety,	
7	Mar 26, 2015 7:22 PM	I think KTRK is an extremely well managed airport. The staff takes pride in all their responsibilities.	
8	Mar 26, 2015 6:36 PM	Pilots need to due their homework, prior to flight to KTRK.	
9	Mar 26, 2015 5:23 PM	Most of the safety issues I have come across in my experiences have stemmed from miscommunications and/or lack of communication altogether.	
10	Mar 26, 2015 7:53 AM	KTRK is a professionally managed airport.	
11	Mar 26, 2015 1:35 AM	1. AWOS phone number is constantly busy. 2. Pilots should be reminded that flying extremely wide traffic patterns may preclude gliding to a runway in the event of an engine failure. 3. Local pilots should make position reports predicated on distance and azimuth from the airport along with appropriate legs of the traffic pattern. Transient pilots may not know local landmarks. This can cause confusion. 4. Density Altitude repeaters at the departure end of each runway would provide last minute performance evaluation and perhaps a useful element of go/no-go decision making.	
12	Mar 26, 2015 12:46 AM	people still drive faster than 20 MPH on the ramps	
13	Mar 25, 2015 11:43 PM	In regards to #14 & 15: Wildlife sometimes gets in the way. That's just a way of life there.	
14	Mar 25, 2015 11:35 PM	Aircraft approaching from many different directions for landing is one of the greatest safety hazards. Improved communications would help.	

Number	Response Date	Response Text	Categories
15	Mar 25, 2015 9:54 PM	Would like to see the WebCam pointed more toward the surrounding skies to observe weather, than pointed toward the ground operations.	
16	Mar 25, 2015 9:54 PM	Please see #18. Noise abatement, although important, is unsafely applied to the recommended departure procedure when heading to the South! KTRK requires that hangar tenants adhere to this noise abatement procedure to qualify for discounts on hangar rent!	
17	Mar 25, 2015 9:38 PM	N/A	
18	Mar 25, 2015 9:06 PM	Although this survey seems to be oriented toward ground ops, the main institutional impediment to safety at TRK is the use of wildly non-standard traffic pattern recommendations. The airport tries too hard to prove to the non-flying public that it is "Doing Something" while creating significant risk of in-air collision and pilot confusion with non-measurable reduction in public annoyance.	
19	Mar 25, 2015 8:44 PM	Some pilots could have better radio communications.	
20	Mar 25, 2015 8:33 PM	The Aztec you showed on this email I understand it and fuel contamination fro KTRK? Was told by 3ed party KTRK had to pay for damages on this plane and pilot.	
21	Mar 25, 2015 8:13 PM	As mentioned above, KTRK is amongst the safest non-towered airports I have ever used. It is well maintained, staff are very helpful, and noise abatement procedures are well thought out. I think the major risk at KTRK is it's 5900' altitude on a hot day. KTRK does an excellent job of pointing out density altitude, but new visitors just don't comprehend how much density altitude affects aircraft performance. The only other possible issue is gliders/tow planes using Rwy 20 while at the same time most aircraft land/depart on 29. 90% of pilots are good about announcing their position, but it's the 10% who are silent and thus potentially deadly. I don't know what KTRK can do about that - it's a pilot thing.	
22	Mar 25, 2015 8:11 PM	Great airport and Staff	
23	Mar 25, 2015 8:08 PM	Don't blanket penalize local hanger tenants when they have need to operate outside 'voluntary' curfew hours. This would discourage someone from taking off early and cool when their plane is loaded and they need the performance for a high altitude takeoff in the summer!! Also, arrivals late can be done silently in a little single at idle all the way in. USE DISCRETION AT LEAST or eliminate the penalties! Encourage fly quiet! but don't discourage safety! Flying quietly can be done outside of curfew hours! Early morning take off on runway 2 for example would be flying quietly but maybe before curfew, and with increased safety. late idle arrival with any circling needed done over the north side mine---quiet and safely. Increased hanger fees for locals with small quiet airplanes who may need to fly outside of 'voluntary' curfew hours....even when they do it VERY quietly, and sometimes for safety reasons. They are then encouraged to forgo certain safety measures to be stealthy. Late arrival is a big one... a small single at idle descending in is quiet, and can be done nearly silently....but one may not take certain precautions they would otherwise... ie: make radio calls, use all available lighting, etc.	
24	Mar 25, 2015 8:00 PM	Poor questionnaire. Yes, I have visited KTRK several times in the past year. I believe you mean "I have flown into KTRK" or "Used KTRK for flight operations", etc. My visits have been to the restaurant, meeting rooms, etc. Should have a NA response. As written and administered, the results are leading and are not valid.	

Appendix 09 – KTRK Reference Documents

This table lists the KTRK documents that were provided to Convergent Performance for review by our SMEs.

Table 3 – List of KTRK Documents Reviewed by Convergent Performance SMEs

DOCUMENT	Comment	DOCUMENT	Comment
2014 Safety Meetings.pdf	Add to iSMS	Final End of Night Checklist.doc	Add to iSMS
FAA Guide to Ground Vehicle Operations: A Comprehensive Guide to Safe Driving on the Airport Surface	Ref. for AOA vehicle operations	Initial Response Emergency Checklist	Add to iSMS; update annually
AM Routine.doc	Add to iSMS	Night Shift Duties	Add to iSMS; see compliance checklist with regulatory guidance and IBP
AM Self-Serve Procedures.doc	Add to iSMS	Refueling Aircraft.doc	Add to iSMS
AOA Checklists	Add to iSMS	Unicom Operations Guide.doc	Add to iSMS; finding ref. training
Clarification of Handheld Radio Polic.doc	Add to iSMS; replace with HHR use policy—standard comm's	Vehicle Access Gates Quick Reference guide.doc	Add to iSMS; see finding
Example of UNICOM Traffic Advisory for Jake.doc	Add to iSMS; build a library of example comm's for training purposes	Airport Security-Info Posting.pdf	Add to iSMS
Pages from Suspicious Incident Report Standard.pdf	Add to iSMS	Safety Folder (7 Files)	Add to iSMS; update
Agsg.pdf	Add to iSMS	Safety Training (5 Files)	Add to iSMS; see finding
Emergency Response Contingency Plan-9.pdf	Add to iSMS; update annually	Truckee ALP 2009.pdf	Add to iSMS
Truckee Tahoe Unicom Review RFP Response NACP.pdf	Add to iSMS; historical doc's	Fuel Operations Folder (6 Files)	Add to iSMS; review within review of all fueling operations
Forms Folder (13 Files)	Add to iSMS	Airport Operations Folder (12 Files)	Add to iSMS
TTAD Master Plan	Add to iSMS	TTAD Strategic Plan	Add to iSMS
Airport Land Use Compatibility Plan 2004	Add to iSMS	Godbe Survey 2013	Add to iSMS
Governing Policy Instructions	Add to iSMS	Waddle Ranch Long Term Forest Management Plan 2013	Add to iSMS