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# EMERGENCY PREPAREDNESS FOR CATASTROPHIC EVENTS AT SMALL AND MEDIUM SIZED AIRPORTS: LACKING OR NOT?

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## ABSTRACT

The implementation of security methods and processes in general has had a decisive impact on the aviation industry. However, efforts to effectively coordinate varied aspects of security protocols between agencies and general aviation components have not been adequately addressed. Whether or not overall security issues, especially with regard to planning for catastrophic terrorist events, have been neglected at the nation's smaller airports is the main topic of this paper. For perspective, the term general aviation is generally accepted to include all flying except for military and scheduled airline operations. General aviation makes up more than 1 percent of the U.S. Gross Domestic Product and supports almost 1.3 million high-skilled jobs in professional services and manufacturing and hence is an important component of the aviation industry (AOPA, n.d.). In both conceptual and practical terms, this paper argues for the proactive management of security planning and repeated security awareness training from both an individual and an organizational perspective within the general aviation venue. The results of a research project incorporating survey data from general aviation and small commercial airport managers as well as Transportation Security Administration (TSA) employees are reported. Survey findings suggest that miscommunication does take place on different organizational levels and that between TSA employees and airport management interaction can be contentious and cooperation diminished. The importance of organizational training for decreasing conflict and increasing security and preparedness is discussed as a primary implication.

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## METHODOLOGY

Eighteen graduate and undergraduate students from the disciplines of aviation technology, aviation flight, aviation administration, and aviation security were recruited for this study. The research team coordinated with different types of aviation organizations, including regional, general, and corporate aviation, to both develop and implement the survey. The specific goal of the research team was to work on the development of a survey to solicit the opinions of knowledgeable individuals within the general aviation system concerning the degree of emergency catastrophe planning currently in place, basic knowledge of forensic protocols and the successful interaction of individual responsible parties within the overall system. Names and addresses were randomly selected from the *Transportation Security Directory* (Sweet, 2005b). The questions themselves were comprised of elements from proposed questions obtained from industry representatives when asked what information would be of interest to them concerning emergency disaster planning and the effectiveness of interaction with the TSA.

More specifically, development of the industry survey of catastrophe planning policies and practices occurred in four phases. First, each research team developed potential survey questions and queried industry professionals across the United States as to their interest in the subject matter. Second, collaboration occurred across the graduate and undergraduate students to construct a preliminary survey that integrated the ideas of each research team and incorporated relevant questions obtained from the industry professionals contacted. Third, industry and government representatives from each type of aviation organization again were contacted to comment on the final survey and make any additional recommendations as to content. After these discussions, some questions were deleted or modified. Fourth, the entire research team met to integrate the findings from the organizational interviews and finalize the survey. In that so many of the queried industry professionals recommended the same questions, a reasonable amount of validity was acquired.

Two versions of the survey were developed; one for airport managers and one for TSA personnel. Virtually the same questions appeared on both surveys with only slight variations. The survey contained 40 questions, measured on a 7-point Likert scale, with a *not applicable/don't know* option. For example, one question posed the statement "current planning procedures need improvement" and asked respondents to indicate a response to this statement with *strongly disagree* (1), *somewhat agree* (4), and *strongly agree* (6). In addition, open-ended and closed-ended questions were asked to gather general demographics and information about security awareness

training and knowledge of forensic aspects of catastrophe protocols. For example, a close-ended, yes or no question asked whether “a training class, including both airport management and TSA personnel, based on forensic aspects of post-catastrophe planning, would be beneficial to the airports operational status.” Respondents were then asked in an open-ended fashion why or why not and blank lines were provided to write in personal rationales for their responses. A comprehensive list of airports was generated including regional/feeder airports, general aviation, and corporate operations. This sample of responses was considered representative because the individuals who completed this survey were randomly chosen and reflected similarity in response. A total of 505 surveys were distributed to a representative sample of airport professionals and TSA personnel from the list of organizations either by mail or personal delivery. Specifically, a survey was sent to 250 airport managers and 255 TSA employees across the United States. The sample size was small but it is believed a high degree of validity was obtained from interviewees. In addition, even though the respondent rate was also low, it is considered acceptable because no statistical analysis was conducted, only basic comparisons based on percentile statistics. Completion of the survey was purely voluntary. Out of the returned surveys, 64 contained usable data from airport managers and 28 from TSA employees. Several responses were not included in the analysis due to incompleteness. The response rate of usable surveys was therefore 27% for airport managers and 13% for TSA employees.

The survey concentrated on small to medium sized operations and not major airports. As background, the Federal Aviation Administration requires a full scale disaster drill every three years to test the emergency plan at airports certified for air carrier operations, but no such requirement exists for the type of airports included in this analysis. For example, at commercial airports, each certificate holder must coordinate an emergency plan with local law enforcement agencies, rescue and firefighting agencies, medical personnel and hospital organizations, principal airport tenants, and all other entities that have responsibility under the plan (Federal Aviation Regulations Part 139.325, n.d.). Again, by regulation, no such requirement exists for non-commercial airports. Therefore, the results of the survey reflect the lack of equivalent plans for the smaller aviation operations throughout the nation. After careful analysis of the collected surveys, it was determined there are six major areas of concern in regard to the knowledge, training, and planning of catastrophe response among the responding personnel. Those areas have been designated: intra-departmental communication, inter-departmental communication, planning, education/training, forensics, and attitude.

## INTRODUCTION/ LITERATURE SEARCH

The managers of the new Department of Homeland Security have been struggling to combine 22 constituent programs and agencies to provide proper planning on a national level (U.S. General Accounting Office, 2003). Planning for a catastrophic event can seem like an exercise in futility and can lead planners to believe that whatever is prepared might be inadequate or possibly ineffective. Managers consequently tend to rely too heavily on government response in the event of a disaster. Since 9/11, state and local governments have established offices of homeland security or attempted to enhance the functions of existing emergency management departments (U.S. General Accounting Office, 2003). At the local and municipal level, however, disaster planning has lagged behind efforts seen at the national level (Federal Emergency Management Agency, 2002). Additionally, opinion polls have generally found that managers believe terrorist attacks are definitely going to take place, but simultaneously downplay whether it is going to happen to their organizations (Mankin, & Perry, 2003). To ensure the viability of the aviation system in general, it is imperative that disbelief regarding terrorism not be translated into a lack of action on the part of aviation managers and planners. Not planning can lead to increased injury, or even death, to passengers and personnel, while also contributing to the destruction of evidence. This results in a decreased ability to respond to a disaster appropriately and to apprehend the culprits involved in any deliberately contrived terrorist attack.

Additionally, airport officials need to at least be aware of appropriate emergency management and forensic techniques in order to safely react to the inevitable human toll and not to hinder any follow-on investigation. Having a decision plan can be useful in many respects. A plan to deal with a terrorist bomb, nerve gas or anthrax attacks is also useful in response to a workplace violence incident, earthquake impact, hazardous spill, large scale electrical failure, hurricane or flood (Mankin, & Perry, 2005).

Piecing together evidence is the job of qualified forensic experts brought to the scene, but team arrival may not be immediate; especially in the case of international or remote locations. Airport managers can therefore take advantage of basic plans which are readily available and public upon which they can tailor individual plans. For example, the National Fire Protection Association (NFPA) preparedness standard is already well known and used in the business community. The NFPA document provides preparedness basics and is applicable to many transportation sectors. (NFPA 1600, 2004). It includes hazard identification, assessment of the organization's resources, development of procedures for responding to a disaster and resuming

operations, development of communication systems and employee training (Cadrain, 2004). Airport managers and the TSA would do well to utilize its contents and template. In conjunction, airport operators, supporting airlines and the TSA must take care not to destroy crucial evidence in the event of a catastrophe, no matter how overwhelming that task may first appear. The majority of terrorist attacks against aviation have used either explosives or incendiary devices, the outcome of which has resulted in both human and structural damage.

There is of course a plethora of information and studies which have been done relating to the effects of a major commercial aircraft crash. However, there has been little work done on the threat awareness of small to medium sized airport managers, the effectiveness of their interaction with the TSA, their preparedness for major catastrophic events or their knowledge in the field of forensic investigation as it relates to aviation disasters. The responsibility of emergency preparedness and response in the event of a terrorist incident shifted from state and local governments to the federal government after 9/11. The concern raised by the event exposed the need to prepare and mitigate acts of terrorism and resulted in the federal government's financial support of approximately \$11 billion from fiscal years 2002-2005 for state and local first responders (GAO Report, 2005). Section 2 of the Homeland Security Act (6 U.S.C.S 101) defines emergency response providers as including, "Federal, State, and local emergency public safety, law enforcement, emergency response, emergency medical (including hospital emergency facilities), and related personnel, agencies, and authorities" (6). Homeland Security Presidential Directive 8 further defined the term first responder as:

Individuals who in the early stages of an incident are responsible for the protection and preservation of life, property, evidence, and the environment, including emergency response providers as defined in section 2 of the Homeland Security Act of 2002 (6 U.S.C. 101), as well as emergency management, public health, clinical care, public works, and other skilled support personnel (such as equipment operators) that provide immediate support services during prevention, response, and recovery operations. (PDD 8, 2003)

Airport managers clearly fit into these new definitions and will be held to the duty of reasonable care in protecting their facilities and acting appropriately in a disaster.

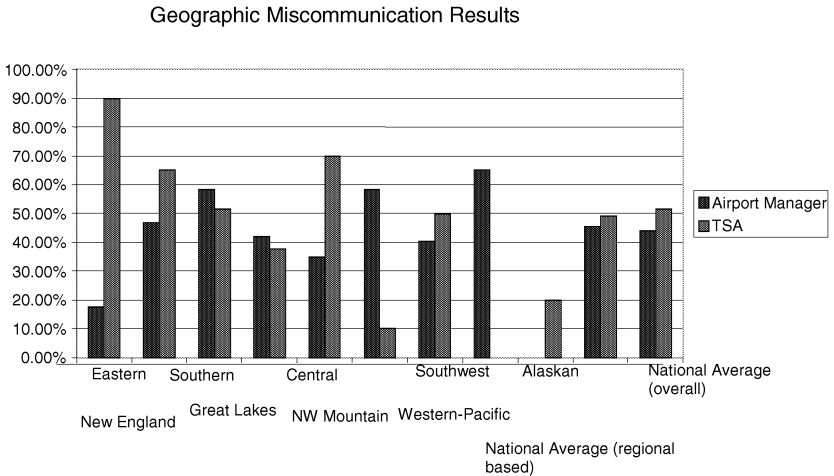
## DATA ANALYSIS

### **Intra-departmental communication**

It has often been said in management circles that plans are only good intentions unless they immediately translate into effective action. In addition, quality planning is critical to actual success (Farell, 2005). In conjunction with that perspective, respondents were specifically asked the question “what percentage of the time do you think miscommunication between personnel result in poor planning.” Analysis of data indicates that both airport managers and TSA personnel believe that miscommunication results in poor planning about 50% of the time. These findings have several possible implications. The first may be that respondents have a sober view of communication issues in that they realize miscommunication does happen in organizations of all sizes from international airports down to the local grass strip. A second implication may be that as employees become aware that mistakes were made throughout the planning process, they correct them accordingly; factoring in the realization that miscommunication can result in poor planning.

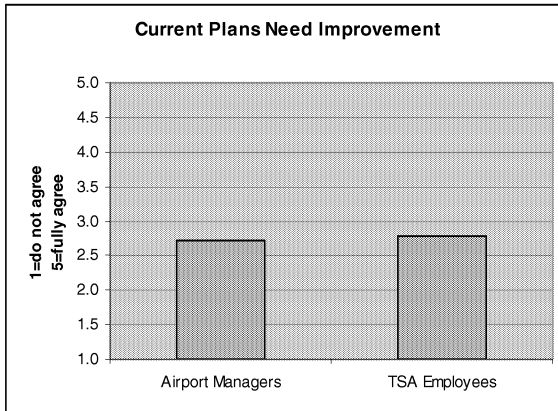
Results vary between specific geographical regions as seen in the chart below, but generally speaking, all agreed some miscommunication took place. However, it cannot be assumed that, at present, airport managers and TSA personnel have dysfunctional communication networks within organizations and areas of influence. The data collected speaks only to the frequency of poor planning that is generated from previous miscommunication. It is reasonable to say that at least half of the airport managers and TSA employees who responded recognize that improvement might be needed.

**Figure 1. Estimate of Percentage of the Time Miscommunication between Airport Personnel Result in Poor Planning, for Airport Managers and TSA Personnel, by Location of Airport**



Even though managers might concede that poor planning may result about half of the time, they still clung to the belief that current planning was adequate. In light of recent events, both natural and terrorist, this premise is suspect at best. A revealing survey question asked “current methods of post-catastrophe readiness planning and training need improvement at this organization.” The results indicate that personnel generally felt that current plans were adequate, as shown in the Figure 2. However, planning often seems not to be as effective in time of tragedy as expected and improved planning based on inter- and intra-organization cooperation can provide more successful results. Because planning should encompass the entire organization, assembling a disaster recovery team that represents all areas of the organization is the best way to approach the effort. That translates to complete cooperation between local authorities, the TSA and internal personnel. In the best of circumstances, the team should perform a business-impact analysis, help to develop and implement a recovery plan, test the validity of the plan, and execute the plan if and when a disaster strikes (Udelso, 2005).

**Figure 2. Level of Agreement that Current Methods of Post-catastrophe Readiness Planning and Training Need Improvement at Their Organization, for Airport Managers and TSA Personnel**



Consequently, organizations should always identify and address miscommunication issues with active feedback, training, and self-reporting systems for all employees. As in any organization, the human element creates the possibility for misunderstanding, error, or loss due to the actions of specific individuals. Human factors play a role in the design of any effective management and security plan within any environment. Therefore, because some miscommunication is inevitable, it is important for organizations, like airports, to have several layers of redundant planning built into the response capability (Sweet, 2005a). The results of the survey reflect that managers of small and medium sized airports and the TSA do not currently recognize this need.

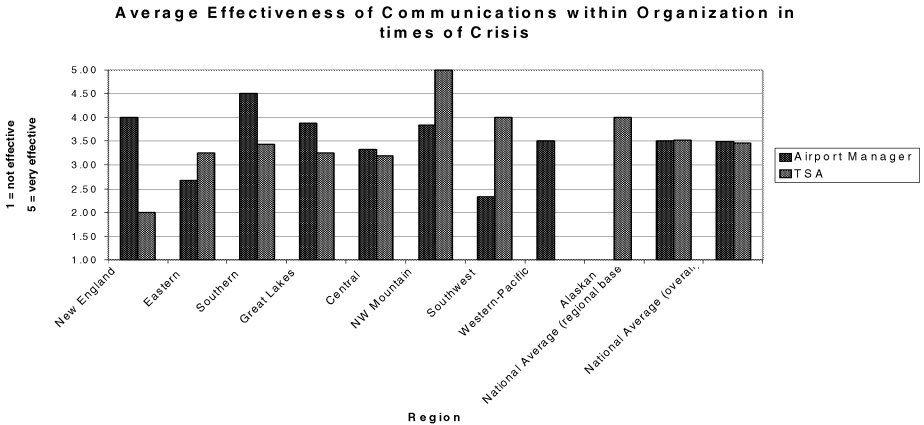
### **Inter-departmental communication**

Many different types of people, equipment, and governing organizations comprise civil aviation and all integrate into a complex system. If just one point in this divergent system is vulnerable, the entire system is equally exposed to that vulnerability. Potential miscommunication between primary government agencies responsible for security and the implementers is therefore deserving of critical analysis. Of note is the fact that both airport managers and TSA personnel feel they communicate best with a person who has an aviation background. Unfortunately, many TSA employees have little to no aviation education or experience. Additionally, the only group to list TSA personnel as easy to communicate with was TSA personnel. This reflects the likely existence of a communication barrier between airport management and the TSA. One airport manager went so far as to write he



communicated well with “all except TSA.” The graph below portrays a visual representation of the perceived effectiveness of communication within an organization during a crisis.

**Figure 3. Level of Effectiveness of Community within My Organization in Times of Crisis, for Airport Managers and TSA Personnel, by Location of Airport**



Data further indicates that only airport managers felt at ease talking with pilots, whereas TSA personnel indicated an indifference to them and their associated skills. This lack of focus regarding an essential element of the aviation hierarchy also evidences a distinct communication boundary between the TSA and the industry. Communication problems in this specific arena is disconcerting considering the importance of the link between TSA, the pilot and passenger security. In general, the data point toward the conclusion that the industry, in all aspects, lacks the ability to exchange information on a well-managed basis. Concurrently, the more experienced the operator, the less likely they believed in the effectiveness of the total communication chain, even though they did often express trust within their own organization.

As regards preparation, TSA personnel replied they had post-catastrophe/terrorism plans for general aviation airports and that coordination between agencies responsible for them was in place. Airport managers on the other hand did not support this conclusion. The divergent responses either indicate a distrust of the TSA’s plans, not having plans, or poor communication between the airport manager and the TSA that such plans do exist. The disaster management process is driven by the understanding that nothing happens without a plan and that no plan is ever finished. When the smoke clears, the organizations that survive are the ones that constantly build, test and constantly improve disaster management plans

(Bean, 2002). Unfortunately, the surveyed airport managers appear to be comfortable with the current information gap that seems to exist between the TSA and general aviation airport management. The lack of direct contact, or oversight, was seen as a plus and not a negative by airport managers. One airport manager surprisingly returned the questionnaire asking “what is the TSA?” Training, and the continuing need for it, was a different matter. Further training, as regards security planning, was supported by TSA personnel but not airport managers in the field. TSA personnel rate security training as more effective than airport managers do but both organizations indicated current training is effective even when there was a lack of it. Only airport managers in the Northwest Mountain region considered training not to be effective at all.

More importantly, the data show that airport managers do not feel, on average, that they would work effectively with the TSA in times of a crisis or tragedy. Meanwhile, TSA personnel, on average, believe the opposite. This gap again highlights the communication problems between these organizations. Unsurprisingly, and as already stated, TSA personnel indicated they consider themselves easier to work with more frequently than airport managers do. The averages, both overall and regionally-based, show a wide discrepancy. For example, TSA personnel in the Alaskan region overwhelmingly noted that an it-won't-happen-here attitude permeates the environment. These data further support the contention that communication between the TSA and airport management is poor, and is even poorer when it specifically comes to security of the facility.

In light of the expressed attitudes, it is noteworthy that both groups feel miscommunication results in poor planning due to faulty communication. This assessment calls into question the validity of post-catastrophe plans. There is obviously miscommunication between airport managers and the TSA and therefore the plans might not be as effective or of as high quality as they could. More specifically, airport managers have more communication problems stemming from the use of acronyms and accessibility. TSA personnel indicate internal communication problems are rooted more in technology and personalities. Overall both groups indicated all four of the listed items—acronyms, accessibility, personalities, and technology—interfered with effectiveness. However, not any one item was noted more so than the others.

In analyzing the communications mode data, the order of perceived effectiveness between participants and modes of communication highlights some differences. It appears that TSA personnel are more comfortable with face-to-face, phone, electronic communications, written communications, and radio communications, in that order. Airport managers preferred electronic communications most, followed by written, phone, face-to-face, and, finally, radio. The differences in the preferred forms of communication

likely contribute to the gap in communications between airport managers and the TSA. Several TSA personnel also referred to the use of Blackberry devices and weekly meetings as most useful. Although the differences may appear minor, they do occur and are a contributing factor to overall lack of optimal communication. Experts recommend that a manager choose a system. They agree that each manager needs to designate one primary method to communicate. The method chosen must work with available technology, the group's preferred style, and the staff's skill level (Neil, 2005).

### **Training and planning as a combined function**

The fundamentals of basic security are based upon proper planning, training and eventually executing the two seamlessly. However, planning, even if properly drafted, will only be successful if management wholly supports the concept. All too often, management does not support the needs of proper security until after tragedy and great loss occurs. Even then, the mindset is frequently lost when the immediate demand for increased security has rescinded. Therefore, it is imperative that upper-management always keep the issue in the forefront.

By arming themselves with the knowledge they need to understand and manage catastrophic risk, *airports* can more accurately gauge the full spectrum of potential catastrophic risk they face, the financial impact those risks pose and their own abilities to handle that impact. Such knowledge does not have to be imported, however. In most cases, it already exists within the organization and needs only to be identified, captured and harnessed. Once done, it can drive an ongoing internal education process that will boost the ability to better manage catastrophic risk. (Otterson, 2005, p. 46)

The survey showed some interesting perceptions about planning: specifically, comfort levels of upper management, openness to making suggestions, and sense of readiness to respond to a catastrophic event.

As previously discussed, despite the relatively recent tragedies of 9/11, train bombings in Madrid and London, and hurricane Katrina in New Orleans, a significant portion of surveyed TSA personnel still felt that current methods of post-catastrophe readiness planning are sufficient and do not need improvement. Arguably, this is a function of a lack of proper training. As a regulative body of transportation security and a coordinating branch of public safety, it is of concern that any transportation component or regulatory agency retains that perception of preparedness. And when multiple city and government response plans have been exposed as weak—exhibiting multiple degrees of failure resulting in loss of life as well as critical infrastructure—the perception verges on dangerous. Training and planning are two tasks that should be routinely supplemented with

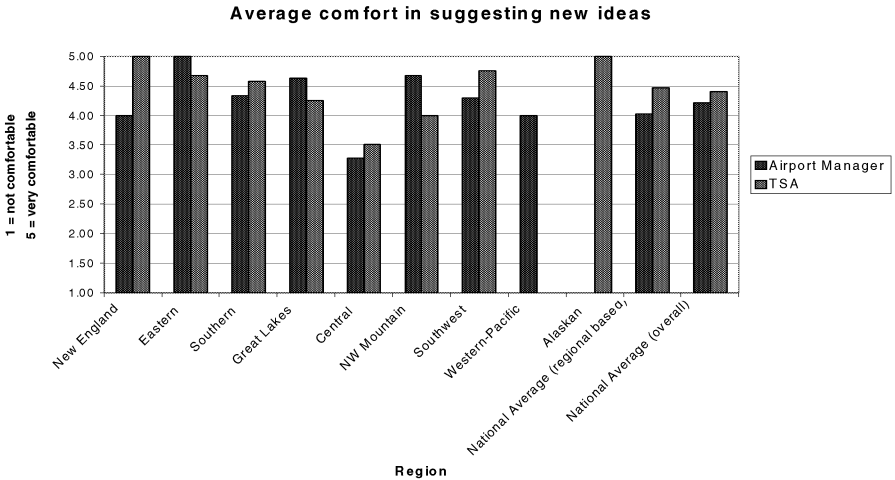
technological advancements, process improvements, and personnel refinements as well as enhanced practice efforts to ensure proper execution. Confidence—even if it does not rise to the level of overconfidence—conjures a scenario that has never proven to be very effective. There needs to be constant momentum for improvement, especially since recent events have proved that the minimally-required planning has not been adequate to handle the needs. The survey has exposed responses of complacency which could prove to have catastrophic results if not addressed.

Airport manager respondents were content with current training. It may be prudent to mention that when terrorists were selecting viable airports to carry out 9/11 they evaluated airports at many different cities. Assessments calculated likelihood of resistance and preparedness. Arguably, many airports evaded looming tragedy simply by being better prepared than another facility. Airport security is critical not only for the well being of a facility, but also of the public. Proximity to power plants, critical infrastructures, and national democratic symbols all are added reasons to be more prepared. It was not evident that airport managers accepted this perspective but it is critical that an organization be comfortable accepting new ideas for post-disaster readiness and awareness training.

Action is frequently most effective when implemented locally so that local conditions are understood, and objections or concerns can be dealt with more immediately and directly, assuming that appropriate mechanisms exist to effect the desired action. Individuals can then be motivated to change their behavior, to spread the message and unofficially monitor, evaluate and enforce desired policies and actions. Disaster-risk reduction, sustainability and development cannot be forced on or "done" for others; people must accept those processes and undertake them themselves. (The 9/11 Commission Report, 2004)

While both TSA personnel and airport manager respondents feel current methods of catastrophe readiness planning are sufficient and do not need improvement, they did indicate an openness to suggestions about new training regarding post-catastrophe readiness and response. The graphic below indicates the high degree of agreeability to accept new ideas. Security is often one of the least funded budgetary items and frequently many suggestions, though acceptable, are never realized due to cost considerations. Ultimately, however, it should be stressed that it is cheaper to prevent than it is to repair. This is counter intuitive to the finding that many respondents feel their facility has an it-won't-happen-here attitude. If a facility believes it is not prone to attack, it has no reason to adequately prepare and learn how to adequately respond.

**Figure 3. Level of Comfort in Suggesting New Ideas, for Airport Managers and TSA Personnel, by Location of Airport**



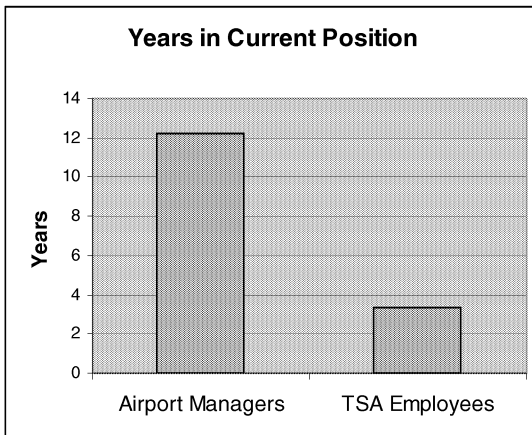
In summary, while TSA personnel and airport managers are open to suggestions, they seem overly confident that they will be able to respond and that they will not need to respond since their facility is not at risk. The only way to minimize physical costs of damage to a facility, disruption of the economy and loss of life is to have effective plans. Planning will enable faster response times, proper response by employees and allocation of resources by management. Clearly, adequate preparation is not likely when management believes it will not happen there. The Emergency Management Accreditation Program (EMAP) defines an emergency management program as "a jurisdiction-wide system that provides for management and coordination of prevention, mitigation, preparedness, and response and recovery activities for all hazards. The system encompasses all organizations, agencies and individuals responsible for emergency management and homeland security" (Bently, 2004). In other words, EMAP looks at coordination of a multi-agency, multi-disciplinary system for all activities that are needed to prevent, mitigate against, prepare for, respond to, and recover from a disaster. The program would provide yet another tool useful within the aviation venue.

**Education/training**

This survey contained several inquiries to determine the level of experience, education, and training of TSA employees and airport managers. It was determined that airport managers have held positions about three times longer than TSA employees, and total years of experience in the

aviation field is about seven years longer. Certainly one reason that airport managers have held positions longer than TSA employees is because the TSA was not established until passage of the Aviation Security and Transportation Act in November 2001. Unfortunately, it is obvious that the TSA has not sought to hire individuals with extensive aviation experience. It is important to also note that the average total years of aviation experience for airport managers was about 27 years while the total for TSA employees was far less. Admittedly, experience measured in years does not necessarily equate to quality experience and increased knowledge in the field, but it is still worthy of recognition. An airport environment is unique and complex and experience in the industry can only add to disaster preparedness. Regardless, even with more experience in the aviation industry, airport managers feel less urgency as it relates to security training. When asked, “What is the frequency of your organization’s recurrent security training” almost all of the TSA employees indicated they have some frequent training, with two responding that they did not know.

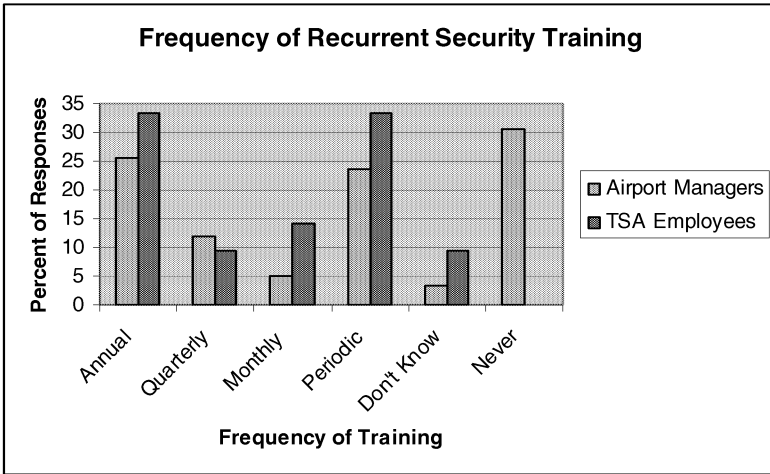
**Figure 4. Number of Years in Their Current Position, for Airport Managers and TSA Personnel**



**Figure 5. Total Years of Aviation Experience, for Airport Managers and TSA Personnel**

Airport managers, on the other hand, vary widely on frequency of training, and 30% responded they never had recurrent security training. These results show the need for standardized training among TSA employees and mandated requirements for airport manager training. When asked to rate how consistently the training policy was followed on a scale of one to five with one being never followed and five being always followed, airport managers responded with an average of 3.5 indicating that their training policy is followed for the most part. TSA employees averaged 4.4 indicating that their policy is followed more frequently than airport managers. It is also worth mentioning that no TSA employees answered 1 or 2 while there were many airport managers that responded their training policy was never followed. Therefore, while the TSA needs to work out standardization of training, airport managers need to create, implement, and continue security training. Of note is the fact that airport managers also need to include the agencies they will depend on in the event of an emergency in their training. For example, the police are clearly interested in training programs that entail an understanding of the complexity of airport policing and an attempt to professionalize it. It is important that they recognize an airport is a demanding, people-oriented environment, which requires some unique understanding from law enforcement officers, as well as knowledge of all aspects of airport and air carrier operations. “Due to extensive airport regulations and the demands placed upon airport police officers, the aviation security community should fully address the challenges of full-spectrum training and oversight” (Raffel, 2001).

**Figure 6. Frequency of Recurrent Security Training, for Airport Managers and TSA Personnel**



This survey also documents that TSA personnel rate the effectiveness of awareness training higher than airport managers do. Airport managers and TSA employees were asked to rank the effectiveness of the organization's current method of security awareness training, on a scale from one to five with one being not effective to five being highly effective. Airport managers averaged a 3.3, indicating they feel the method is somewhat effective. TSA employees averaged 3.9, indicating they feel the method of security awareness training is quite effective. Again, it is worth mentioning that no TSA employees answered 1 or 2 while there were many airport managers that responded training is not effective. So, not only must there be a training program in place, but it must also be effective; and that apparently is not occurring among airport managers to the extent it is for TSA employees.

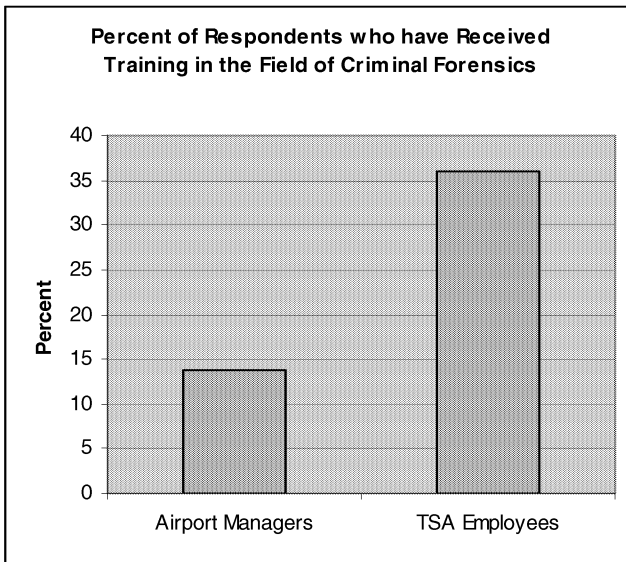
Another important training topic is post-catastrophe training. Since 9/11 less than half of the airport managers have provided or received additional catastrophe training in contrast to almost three-quarters of TSA employees. Overall, it is apparent that training is an area that needs to receive more attention. It is also important to understand that the responses to this survey are solely what the airport managers and TSA employees think and feel, not necessarily what is actually occurring. For example, they may think that the training is effective but perceptions are often notoriously wrong.



**Forensics**

The success of the United States law enforcement community is derived from many applications and techniques but none more essential than the utilization of forensic science. Forensic protocols are varied and include the use of entomology, odontology, taphonomy, and similar forensic methodologies. However, the importance of these protocols and others seem to be misunderstood by the respondents. There is an apparent disconnect in comprehending the importance of forensic science as it pertains to aviation catastrophes. In the event of an aviation industry terrorist incursion timely access and undisturbed evidence is critical to the forensic investigator. The investigator must be given unfettered access to the incident scene and know that only essential emergency response activities have taken place in regard to event scene alteration. The alteration of human remains or physical evidence, in any form, greatly restricts the ability of the investigator to successfully complete his task. With this identified, it is critical that all aviation industry personnel understand the importance of forensic protocols and how they contribute to the apprehending of perpetrators in a catastrophic event.

**Figure 7. Percent of Respondents who have Received Training in the Field of Criminal Forensics, for Airport Managers and TSA Personnel**



When questioned if they felt that a minimal knowledge of forensic protocols was important both TSA personnel and airport managers indicated

that it was of little concern to them. They both continued by describing the importance of individual areas of forensic science as it would benefit them in their creation of a post-catastrophe plan. Unfortunately, they both concluded that this knowledge, as it applied to all forensic areas noted within the survey, was of little value to them. Finally, they were asked to indicate if they had ever received any training within the field of criminal forensics. Of those responding from the TSA, 36 percent indicated that they had received this type of training. Of those responding as an airport manager, only 13.6 percent indicated that they had received such training. This lack of understanding of the importance of forensics can be contributed to the minimal education provided.

When asked if they were interested in the topic of forensic investigation both TSA personnel and airport managers were mildly interested. Again, these results would demonstrate the lack of understanding to the benefits this field of study brings to the aviation security. When surveyed in regard to whether the organization was more reactive than proactive both survey groups indicated an overwhelming response to the reactive. This reactive nature seems to be validated by all previously mentioned replies. Additionally, both survey groups felt strongly that their organization would not react to a catastrophic event in such a manner as to result in the loss of critical information. However, when questioned on the effectiveness of the organization's current method of security training they both leaned toward the not effective response. Together, these responses seem to contradict each other and lead to the questioning of each organization's ability to truly perform in a manner that will not result in the loss of critical information. The frequency of training within each organization did not clearly demonstrate any pattern; therefore no implied conclusion can be drawn from this question as it applies to forensic protocols.

Survey results indicated that airport managers have held their positions approximately four times longer than TSA personnel respondents. Additionally, airport managers have approximately 2.5 times the experience within the aviation industry. These data combined with the aforementioned questions and results related to forensic science do not allow us to form any clear conclusion based upon years in position or experience. Indicators show that the area of forensic science, as it is applied to catastrophic events within the airline industry, is grossly misunderstood and under emphasized.

### **Attitude**

Personal attitudes play a key role in day-to-day interaction among individuals and small and large organizations. This element of human behavior is both complex and unavoidable. The attitude of individuals and organizations directly responsible for aviation security obviously should receive a great deal of attention due to the tremendous impact it has on the

American people and national security. The safety and security of communities throughout the nation are a responsibility that is shared by all residents, by government, and by the private sector. Their attitudes will reflect their success (Kelman, 2005). Specifically, this study examined how security personnel prepare to respond to catastrophic events. The attitudes and perceptions of the security personnel surveyed in our study are the same that are being portrayed as the acceptable model to subordinates. There is no simple way to determine one source of attitudes from the respondents; however some general conclusions can be made based upon information given.

Airport managers that responded have been in their positions longer than the TSA employees. The first question asked was "how many years have you been an airport manager?" Although the question was worded identically for both airport managers and TSA employees, the period of time in which airport managers have been in an airport management role was significantly greater than the responses of the TSA employees. Most airport managers have at least 10 years of experience.

The second question asked "how many years have you been at your current position?" The responses for airport managers showed little job re-positioning; in fact many of them have not changed jobs since they originally took their current position. The respondents from the TSA indicated more shift in job responsibilities. This should come as no surprise due to the changes which occurred related to the governing of airport security by the formation of the Department of Homeland Security. It is believed airport managers feel a greater sense of comfort with current operations because of time spent in the aviation industry. This sense of comfort is believed to be the reason why airport managers are not highly concerned with security planning and training. Most indicated they feel current measures are adequate. Another rationale for this belief is the fact airport managers have other duties beside security in their job descriptions.

Another question asked to rate—on a scale from one to five, with one being the least vulnerable, and five being the most vulnerable—"due to your geographic location, how vulnerable do you believe your organization is to a terrorist attack?" The first unsettling part of the responses is that neither group expressed great concern that their facility is vulnerable. This could be due to the fact that there is no clear distinction of baseline understood vulnerability for all aviation facilities. Nonetheless, airport managers more predominately indicated they feel their facility is at the lowest possible level of vulnerability based upon the wording of the question. When responding to the question "I believe that there is an 'it won't happen here' attitude at this facility," a higher level of airport managers—compared to TSA employees—felt this type of attitude does exist. Noting that most TSA employees have only held their current positions since soon after 9/11 security preparedness

and planning seem to be a more pressing issue. With a lower level of job experience in their current positions, 9/11 is also fresher in the minds of TSA employees. Another reason why security is a higher priority for TSA personnel may be because they are government employees who feel direct pressure from federal agencies to insure proper security measures are in place.

**Figure 8. Perceived level of Vulnerability to a Terrorist Attack for their Organization, Due to Geographic Location, for Airport Managers and TSA Personnel, by Location of Airport**

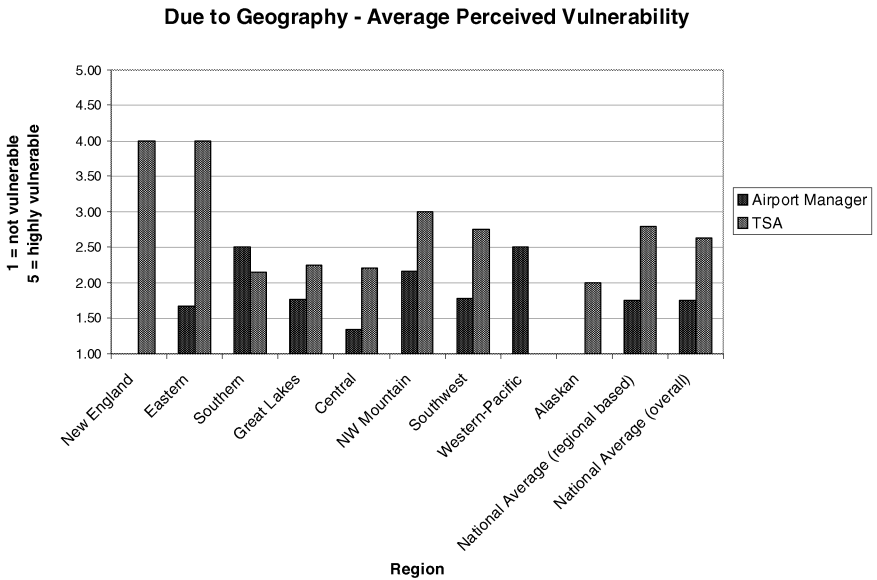
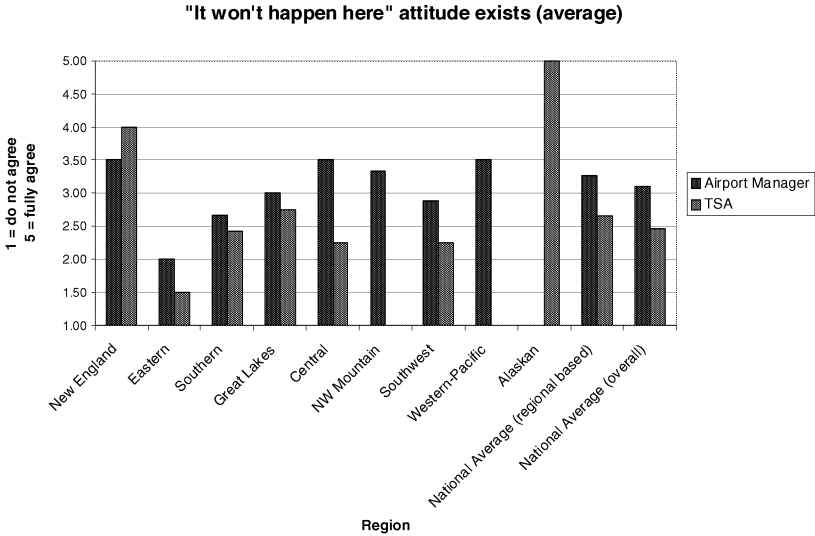


Figure 9. Belief of the Existence of an “It Won’t Happen Here” Attitude at their Organization, for Airport Managers and TSA Personnel, by Location of Airport



Overall, the attitudes and perceptions of the current state and future needs of security differ greatly between airport managers and TSA employees. Certainly this group of researchers believes this is an area which needs reevaluation and more consideration. The first step in taking action is realizing change is needed. It is no easy task to convince personnel this change is in fact needed; however, this group of researchers believes this threat is real and this report will reflect the need to change. Convincing the general aviation component of the industry that the threat is indeed real poses a significant challenge and is worthy of further study.

### CONCLUSIONS

The data collected support what is already widely suspected; namely that catastrophe planning within the aviation community needs to be improved. More specifically, more attention needs to be given to the current threat to the general aviation community in general. It is simply too easy to access the facilities and to engage in nefarious conduct without raising too much suspicion. Common sense dictates that the criminal or terrorist is more comfortable accessing the least secure facility and the one presenting the least risk. Admittedly, the terrorist, unlike the criminal, is rarely concerned with escape but they still need to gain entrance to the transportation network

to disrupt it. To ignore the desire of terrorists to possibly use the general aviation community to attack a larger target suggests the old head-in-the-sand cliché may be a reality. The results of the survey minimally support the conclusion that miscommunication between agencies takes place internally and externally which could result in less effective response to a catastrophic event.

Additionally, it seems apparent that miscommunication between the TSA and airport managers is contributing to the lack of improvement in this area. The TSA has focused on larger commercial airports which service the nation's transportation requirements but has neglected smaller and more vulnerable facilities. This is of particular significance if the small to medium sized airport is near a dangerous critical infrastructure such as a nuclear power plant, chemical weapons storage facility or large dam. The survey seems to support the conclusion that a general complacency does indeed exist to varying degrees depending on the facility. Attitudes may have turned complacent over time since 9/11 or never existed in the minds of the operators at any time previously. It seems prudent that attention to planning and training should be revitalized before another catastrophe occurs. Efforts based on both the adequacy of existing plans and the potential current threat is a function of education. No one—especially a facility manager—wants to seriously believe that a disaster will take place under their watch on their facility. Such contentment can unfortunately be fatal.

The general aviation industry basically portrayed only a mild interest in the field of forensics. This lack of understanding regarding the significant contribution that such basic knowledge can provide in capturing those that have engaged in a terrorist act is disappointing. The democratic system prides itself on bringing those who commit crimes to justice. The forensic teams at work after catastrophic events take place can be greatly hindered by acts committed by well-intentioned but ill-informed individuals with access to a scene prior to the arrival of the forensics team. The damage such personnel can inflict on a crime scene can be substantial and hinder later prosecutorial efforts. This is another topic worthy of further research.

It is not within the parameters of this paper to document the actual current threat but numerous government officials and security experts had repeatedly used the phrase “not if but when” in referring to the next attack. Unfortunately, many aviation professionals have lost sight of the potential for a massive catastrophic event—either natural or terroristic—and have not adequately planned to deal with the results.

It is critical that upper management—at a minimum—support efforts to improve communication, to place emphasis on planning and to continue to improve security awareness training as well as law enforcement and forensic training. Education should be standardized and mandatory in order to effectuate the best results. It is apparent that voluntary requests or

suggestions to improve security are seen by the aviation professional as an unnecessary cost to an industry already in need of improved profitability. The survey also reflects that the TSA does not necessarily speak the same language as the aviation professional, especially those of pilots. To ignore the advice and experience of such a critical component in the aviation chain does not bode well for future cooperation or success. The aviation industry is populated with highly trained professionals who function in a unique environment which includes airspace, airport facilities and supporting infrastructure. To have the government agency that regulates security at these facilities to not have the same competency level in such a unique environment should also be addressed.

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APPENDIX

Individual Survey Response Analysis

Airport Managers:

- 1. How many years have you been an airport manager? 12.99  
57 responses
- 2. How many years have you been at your current position? 12.21  
59 responses
- 3. What are the total years of your aviation experience? 27.61  
57 responses  
Overall, very experienced in aviation field in terms of years
- 4. To which geographic region are you assigned?  
[ 0 ] Alaskan [12 ] Central [6 ] Eastern [ 16 ] Great Lakes  
[ 4 ] New England [ 6 ] NW Mountain [ 6 ] Southern [ 9 ] Southwest  
[ 2 ] Western-Pacific  
2 blank 63 total responses
- 5. Due to your geographic location, how vulnerable do you believe your organization is to a terrorist attack? (1=not vulnerable, 5=highly vulnerable) 1.758 62 responses  
Average response indicates feeling of invulnerability
- 6. In your opinion, is it generally easier to communicate with a colleague who is:  
[ ] Military [ ] TSA [ 2 ] Law Enforcement [ 27 ] Has aviation background [ 5 ] A pilot [ 2 ] Management [ 17 ] No preference  
2 blank; 1 military, aviation background; 1 military, aviation, pilot; 2 law enforcement, management; 1 aviation background, pilot, mgmt; 2 aviation background, pilot; 1 all except TSA  
Easier to communicate with people with aviation background
- 7. In your organization, please rate how effective you believe the necessary communication chain would be in a catastrophic situation. (1=not effective, 5=very effective) 3.459 61 responses  
General feeling that communication would be effective
- 8. In general, you get better cooperation from:  
[ ] TSA [ 36 ] Local law enforcement [ 24 ] No preference  
1 neither; 2 blank  
Definitely not TSA; local law enforcement – this may because of the great number of response from small airports
- 9. Does your organization have a post-catastrophic or post-terrorism incident plan? [ 27 ] Yes [ 32 ] No 4 blank  
Need more to have plan

- a. If so, does this plan include any other partnering organizations? [ ] Yes [ ] No of yeses to 9a, only 1 no, 24 yes, 2 blank
- b. Which ones?

Main ones included local & state police/authorities, FBI

Good to have other agencies involved, like to see more federal cooperation

10. Have you provided/received any additional post-catastrophe training since the September 11<sup>th</sup> terrorist attacks to your employees?  
[ 27 ] Yes [ 33 ] No 3 blank  
Required now for GA airport managers?? More need training, especially small airports; also why this number of 'no's is high, lots of small airports answered
11. A class including airport management, airline personnel, and the TSA, based on communication and/or resource management is needed in your work environment.  
[ 16 ] Yes [ 41 ] No 6 blank
- a. Why or why not?  
Most of 'no's because small airport, yes good reasons  
Still important for small airport managers to attend session so that they can help create a plan that includes cooperation and communication between several agencies
12. What is the frequency of your organization's recurrent security training?  
[ 15 ] Annual [ 7 ] Quarterly [ 3 ] Monthly [ 14 ] Periodic [ 2 ] Don't know [ 18 ] Never 2 blank; 1 annual, quarterly  
There are a lot of "nevers" for airport managers. Need more training
13. Please indicate how consistently the above training policy is followed.  
(1=never followed, 5=always followed) 3.5714 49 responses  
Average indicates training policy generally followed
14. How would you rate the effectiveness of your organization's current method of security awareness training? (1=not effective, 5=highly effective) 3.3158 57 responses  
Average indicates current security training is effective, but could be more effective
15. In your opinion, how effectively do airport management and the TSA work with each other, especially during times of crisis or tragedy?  
(1=not at all, 5=very well) 2.8222 45 responses  
Average indicates airport management and TSA work together, but not very well
16. In your current position in your organization, how comfortable would you feel suggesting new ideas regarding post-disaster readiness/awareness training? (1=not comfortable, 5=very comfortable)  
4.1964 56 responses

Average indicates most would feel comfortable

- 17. Do you believe that your organization would take any action if an employee were to approach management and suggest new training regarding post-catastrophe readiness and response?

[ 50 ] Yes [ 7 ] No

Significant? Say yes

- 18. Current methods of post-catastrophic readiness planning and training need improvement at this organization. (1=do not agree, 5=fully agree)

2.7143 56 responses

Average is middle of the road, showing need for improvement, but leaning toward disagreement with statement

- 19. Information regarding post-disaster procedures is readily available in my organization to anyone who needs access. (1=do not agree, 5=fully agree)

3.0727 55 responses

Average right down middle, access indeterminable

- 20. Generally speaking, TSA employees are easy to work with. (1=do not agree, 5=fully agree)

2.82979 47 responses

Average middle of road

- 21. I am concerned that my organization would not be able to respond effectively to catastrophic event or terrorist attack. (1=do not agree, 5=fully agree)

2.193 57 responses

Average indicates they do not agree with this statement; organizations could respond to catastrophic event "or so they think"

- 22. I am concerned that the quality of response from my organization could result in the loss of critical information to track down the perpetrators of a terrorist event at my facility. (1=do not agree, 5=fully agree)

1.9821 56 responses

Average indicates they do not agree with this statement

- 23. I believe that there is an "it won't happen here" attitude at this facility. (1=do not agree, 5=fully agree)

3.1356 59 responses

Average middle of road

- 24. I believe that proper and repeated training would improve my organization's response to a terrorist attack. (1=do not agree, 5=fully agree)

3.069 58 responses

Average middle of road; need for more training

- 25. It is easier to communicate with a TSA employee who is:  
[ 4 ] A pilot [ 25 ] Has an aviation background [ 21 ] No preference

3 pilot, aviation background; 1 both ok

easier to communicate with people with aviation background

- 26. My organization is more reactive than proactive. (1=strongly disagree, 5=fully agree)

2.6034 58 responses

27. What percentage of the time do you think miscommunication between personnel result in poor planning? (circle one)  
 0% 1 10% 12 20% 5 30% 7 40% 4 50% 6 60% 1 70% 6  
 80% 6 90% 5 100% 2  
 45.455 avg 55 responses
28. Have you ever received any training in the field of criminal forensics?  
 [ 8 ] Yes [ 50 ] No  
 Need training in forensics
29. How frequently do the following interfere with communication between airport managers and the TSA? (1=never, 5=always)
- |                              |      |              |
|------------------------------|------|--------------|
| Acronyms (ex. TSA, DHS)      | 2.26 | 50 responses |
| Personalities                | 2.3  | 50 responses |
| Accessibility to one another | 2.64 | 50 responses |
| Technology                   | 2.08 | 50 responses |
30. How often do airport managers and the TSA personnel use the following forms of communication? (1=never, 5=always)
- |                                  |        |              |
|----------------------------------|--------|--------------|
| Written                          | 2.8462 | 52 responses |
| Face-to-face                     | 2.4314 | 51 responses |
| Electronic communication (email) | 2.76   | 50 responses |
| Phone                            | 2.6275 | 51 responses |
| Radio                            | 1.25   | 48 responses |
| Other: _____                     |        |              |
31. With regard to the creation of post-catastrophic planning, how effective are the following forms of communication? (1=not effective, 5=very effective)
- |                                  |        |              |
|----------------------------------|--------|--------------|
| Written                          | 3.2364 | 55 responses |
| Face-to-face                     | 4.00   | 56 responses |
| Electronic communication (email) | 3.315  | 54 responses |
| Phone                            | 3.481  | 54 responses |
| Radio                            | 2.449  | 49 responses |
| Other: _____                     |        |              |
32. How helpful would the knowledge of the following basic forensic protocol be in the creation of a post-catastrophic plan for your organization? (1=not helpful, 5=very helpful)
- |                              |        |              |
|------------------------------|--------|--------------|
| Fingerprinting               | 2.1176 | 51 responses |
| Cadaver dogs                 | 2.02   | 51 responses |
| Odontology                   | 1.9796 | 49 responses |
| Entomology                   | 1.959  | 49 responses |
| Mental Health/Grief Training | 2.62   | 50 responses |
| Digital Photography          | 2.96   | 50 responses |
| Other: _____                 |        |              |

33. Minimal knowledge of forensic protocols is not important. (1=strongly disagree, 5=fully agree) 2.7679 56 responses
34. I am interested in the topic of forensic criminal investigation. (1=strongly disagree, 5=fully agree) 2.6491 57 responses  
Averages lean toward disinterest in forensics, but also lean toward forensics being important
35. To the best of your knowledge, how close is your facility to the nearest nuclear power plant?  
[ 15 ] 50 miles [ 5 ] 75 miles [ 15 ] 100 miles [ 12 ] 200 miles [ 8 ]  
Don't know 4 over 200

TSA Employees:

1. How many years have you been an airport manager? 10.29  
26 responses
2. How many years have you been at your current position? 3.339  
28 responses
3. What are the total years of your aviation experience? 19.75  
28 responses  
Less experience than airport managers, but still have many years  
experience in aviation
4. To which geographic region are you assigned?  
[ 1 ] Alaskan [ 5 ] Central [ 4 ] Eastern [ 4 ] Great Lakes [ 1 ] New  
England [ 1 ] NW Mountain [ 7 ] Southern [ 4 ] Southwest [ ]  
Western-Pacific 1 Southeast
5. Due to your geographic location, how vulnerable do you believe your  
organization is to a terrorist attack? (1=not vulnerable, 5=highly  
vulnerable) 2.63 27 responses  
Understand more so than airport managers that they are somewhat  
vulnerable to a terrorist attack
6. In your opinion, is it generally easier to communicate with a colleague  
who is:  
[ 1 ] Military [ 1 ] TSA [ 2 ] Law Enforcement [ 14 ] Has aviation  
background [ ] A pilot [ 3 ] Management [ 6 ] No preference  
Like airport managers, easier to communicate with people with aviation  
background
7. In your organization, please rate how effective you believe the necessary  
communication chain would be in a catastrophic situation. (1=not  
effective, 5=very effective) 3.464 28 responses  
TSA feels their communication would be effective
8. In general, you get better cooperation from:  
[ 4 ] TSA [ 7 ] Local law enforcement [ 16 ] No preference  
No preference
9. Does your organization have a post-catastrophic or post-terrorism  
incident plan? [ 20 ] Yes [ 5 ] No  
Most have a plan
  - a. If so, does this plan include any other partnering organizations?  
[ 19 ] Yes [ ] No
  - b. Which ones?  
City fire, local police, etc  
Almost all of the plans include other organizations; good.
10. Have you provided/received any additional post-catastrophe training  
since the September 11<sup>th</sup> terrorist attacks to your employees?  
[ 18 ] Yes [ 7 ] No

Almost  $\frac{3}{4}$  have had training; very good, much more than airport managers

11. A class including airport management, airline personnel, and the TSA, based on communication and/or resource management, is needed in your work environment.  
 [ 13 ] Yes  [ 11 ] No  
 a. Why or why not?  
 TSA realizes more than airport managers that more training is needed, but still is about 50% yes
12. What is the frequency of your organization's recurrent security training?  
 [ 7 ] Annual  [ 2 ] Quarterly  [ 3 ] Monthly  [ 7 ] Periodic  [ 2 ] Don't know  [ ] Never 3 annual, quarter, monthly, periodic  
 TSA adheres to recurrent security training more so than airport managers
13. Please indicate how consistently the above training policy is followed.  
 (1=never followed, 5=always followed) 4.4783 23 responses  
 Average indicates training policy almost always followed
14. How would you rate the effectiveness of your organization's current method of security awareness training? (1=not effective, 5=highly effective) 3.9167 24 responses  
 Average indicates TSA employees feel their training is effective
15. In your opinion, how effectively do airport management and the TSA work with each other, especially during times of crisis or tragedy?  
 (1=not at all, 5=very well) 3.5833 24 responses  
 TSA feels that airport management and TSA work well together
16. In your current position in your organization, how comfortable would you feel suggesting new ideas regarding post-disaster readiness/awareness training? (1=not comfortable, 5=very comfortable)  
 4.4 25 responses  
 Average indicates most would feel comfortable, even more so than airport managers
17. Do you believe that your organization would take any action if an employee were to approach management and suggest new training regarding post-catastrophe readiness and response?  
 [ 20 ] Yes  [ 4 ] No  
 Significant? number of responses say yes
18. Current methods of post-catastrophic readiness planning and training need improvement at this organization. (1=do not agree, 5=fully agree)  
 2.7826 23 responses  
 Average is middle of the road, showing need for improvement, but leaning toward disagreement with statement

19. Information regarding post-disaster procedures is readily available in my organization to anyone who needs access. (1=do not agree, 5=fully agree) 3.24 25 responses  
Average right down middle, access indeterminable
20. Generally speaking, TSA employees are easy to work with. (1=do not agree, 5=fully agree) 3.8425 responses  
TSA feels that TSA employees are easy to work with; more so than how the airport managers feel
21. I am concerned that my organization would not be able to respond effectively to catastrophic event or terrorist attack. (1=do not agree, 5=fully agree) 1.833 24 responses  
Average indicates they do not agree with this statement; organizations could respond to catastrophic event "or so they think"; TSA disagrees with this statement even stronger than airport managers
22. I am concerned that the quality of response from my organization could result in the loss of critical information to track down the perpetrators of a terrorist event at my facility. (1=do not agree, 5=fully agree) 1.9583 24 responses  
Average indicates they do not agree with this statement
23. I believe that there is an "it won't happen here" attitude at this facility. (1=do not agree, 5=fully agree) 2.4583 24 responses  
TSA feels that that attitude does not exist at their facilities, for the most part
24. I believe that proper and repeated training would improve my organization's response to a terrorist attack. (1=do not agree, 5=fully agree) 4.00 24 responses  
TSA understands that more training would be beneficial to the organization's response to an attack
25. It is easier to communicate with a TSA employee who is:  
[ 1 ] A pilot [ 11 ] Has an aviation background [ 13 ] No preference  
No preference if they have an aviation background or not about 50% of time
26. My organization is more reactive than proactive. (1=strongly disagree, 5=fully agree) 2.7917 24 responses  
Average indicates slight disagreement with this statement. They may not want to answer that they are reactive so they answer proactive, but don't want to disagree strongly with the statement
27. What percentage of the time do you think miscommunication between personnel result in poor planning? (circle one)  
10% 4 20% 1 30% 3 40% 6 50% 60% 70% 1 80% 4  
90% 4 100% 1  
51.667



TSA feels that miscommunication results in poor planning about 50% of the time.

- 28. Have you ever received any training in the field of criminal forensics?  
[ 9 ] Yes [ 16 ] No

More TSA employees have received training in criminal forensics, but more training is needed

- 29. How frequently do the following interfere with communication between airport managers and the TSA? (1=never, 5=always)

Acronyms (ex. TSA, DHS)	2.12	25 responses
Personalities	2.88	25 responses
Accessibility to one another	2.36	25 responses
Technology	2.2	25 responses

- 30. How often do airport managers and the TSA personnel use the following forms of communication? (1=never, 5=always)

Written	3.44	25 responses
Face-to-face	4.16	25 responses
Electronic communication (email)	3.92	25 responses
Phone	4.08	25 responses
Radio	1.4	25 responses

Other: \_\_\_\_\_

- 31. With regard to the creation of post-catastrophic planning, how effective are the following forms of communication? (1=not effective, 5=very effective)

Written	3.8261	
Face-to-face	4.09	23 responses
Electronic communication (email)	3.8696	23 responses
Phone	3.522	23 responses
Radio	2.182	22 responses

Other: \_\_\_\_\_

- 32. How helpful would the knowledge of the following basic forensic protocol be in the creation of a post-catastrophic plan for your organization? (1=not helpful, 5=very helpful)

Fingerprinting	2.333	24 responses
Cadaver dogs	2.75	24 responses
Odontology	2.435	23 responses
Entomology	2.3636	22 responses
Mental Health/Grief Training	3.5	24 responses
Digital Photography	3.542	24 responses

Other: \_\_\_\_\_

Data is inconclusive; however, TSA results for 32 are all higher than airport manager's results, indicating that TSA employees see the need for knowledge more so than airport managers.

33. Minimal knowledge of forensic protocols is not important. (1=strongly disagree, 5=fully agree)  
2.6522      23 responses
34. I am interested in the topic of forensic criminal investigation.  
(1=strongly disagree, 5=fully agree)  
2.6087      23 responses  
Averages lean toward disinterest in forensics, but also lean toward forensics being important
35. To the best of your knowledge, how close is your facility to the nearest nuclear power plant?  
[ 5 ] 50 miles [ 1 ] 75 miles [ 8 ] 100 miles [ 4 ] 200 miles [ 6 ] Don't know  
Some TSA employees don't know distance.