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Job Tenure Factors for Airline Passenger Screener Personnel

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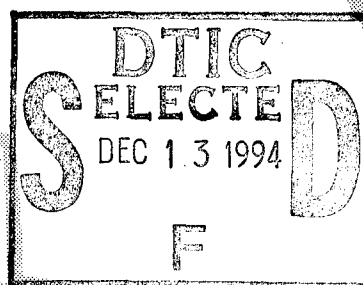
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16. Abstract

This is the final report of a three-part series of a research program to improve the selection and retention of airline passenger pre-board screener personnel. This report describes the Delphi small-group process methodology that was used to identify factors affecting the tenure of screener personnel. Although the Delphi process has been completed and yielded valuable findings, additional research efforts are required before intervention programs are developed. Recommendations for intervention programs, based on the data obtained, have been provided. The reader is referred to the first report for an examination of the literature related to the selection and performance measurement issues. Methodology and results completed during a job task analysis can be found in the second report of the series.

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EXECUTIVE SUMMARY

This is the final report of a three-part series of a research program to improve the selection and retention of airline passenger pre-board screener personnel. First year efforts have indicated that a severe employee turnover problem exists within the industry. As a result, initiatives to identify factors contributing to job satisfaction and career retention were completed. Understanding the causes of employee turnover and developing viable solutions became an integral component of this project.

This report describes the Delphi small-group process methodology that was used to identify factors affecting the tenure of screener personnel. Recommendations for intervention programs, based on the data obtained, have been provided. The reader is referred to the first report for an examination of the literature related to the selection and performance measurement issues. Methodology and results completed during a job task analysis can be found in the second report of the series.

1. INTRODUCTION.

The JTA provided an efficient vehicle to define the discrete subtasks involved in X-ray screening and in identifying the requisite abilities for successful performance of the job tasks. However, careful definition and measurement of the requisite abilities will not assure an appropriate selection model. Personality traits, motivational factors, and job characteristics play an important role in predicting performance. JTA methodologies, with a focus on task characteristics, are not adequate for developing predictor instruments for these factors. Identification of relevant personal traits and motivational elements dictates the use of methodologies that focus on the personnel that operate a system.

An effective strategy should optimally obtain inputs from job incumbents while minimizing unique individual differences. The Delphi technique (Linstone & Turoff, 1975) provides one such avenue to obtain these data. These techniques have often provided a methodology for soliciting expert opinions and evaluations. Delphi techniques "may be characterized as a method for structuring group process so that the process is effective in allowing a group of individuals, as a whole, to deal with a complex problem" (Linstone & Turoff). The Delphi technique also provides the advantage of developing data that can be converted into a survey format for large scale data collection efforts at a later time. This technique was further selected for the relatively low costs involved with respect to the anticipated benefits. The objective of this phase of the research was to solicit expert opinions from job incumbents and supervisors as to those personal factors that contribute to successful performance and job longevity.

The Delphi techniques were originally developed by the Rand Corporation more than 40 years ago for reaching consensus on complex problems (Linstone & Turoff, 1975). The methodology has enjoyed particularly strong use in forecasting and long-term planning among policy planners (Dalkey, 1967; Delbecq, 1975; Helmer, 1967; Linstone & Turoff, 1975; Pyke & North, 1969; Weaver, 1971). During its initial development, the Delphi process used a series of questionnaires for eliciting analyses, subject matter expert opinions, and ratings. The initial questionnaire typically solicited responses on a broad question. Each subsequent questionnaire is increasingly more focused since it uses the data from the preceding questionnaire for refinement (Delbecq, 1975). Typically, the process requires three iterations for consensus to be reached (Dalkey, 1967). However, no standard number of iterations are necessary and the process is considered complete when the investigators have obtained the desired level of information.

Throughout the history of the Delphi techniques, many methodological pitfalls have emerged (Linstone, 1975; Sackman, 1974). Chief among these that are pertinent to the project are: 1) ensuring against suppression of divergent views; 2) oversimplification of concepts by participants; 3) ensuring a variability of personnel so as not to obtain a narrow window of expertise; 4) poor execution by inadequate selection of participants; 5) providing little feedback and explanation of the process; and 6) guarding against deception about purpose of the process. Many of these methodological problems are partly attributed to anonymous questionnaires where the investigators and participants are not in physical contact with one another. The standard Delphi technique thus provides no opportunity for group training or discussion; questionnaires are distributed, responded to, the data compiled, the next questionnaire developed, and so on for

several iterations. This technique further causes a loss of participants from the initial population with each iteration. The Delphi process has undergone many changes since its original development and is still evolving (Sackman, 1974). Currently, a highly modified methodology exists that addresses many problematic issues (Lofaro, 1992). Although the Lofaro methodology retains the primary elements of the original Delphi technique (e.g., anonymity of written responses, multiple superseding iterative process, consensus, convergence of responses, statistical group data), several extensions to the technique are incorporated to further structure the group processes. This modified methodology structures the Delphi process by: (a) bringing the participants physically together; (b) incorporating formal instruction for the participants in group processes and methods of consensus; (c) providing a facilitated exercise in group processes; (d) using anonymous individual written data as a basis for group deliberations; and (e) using a facilitator to train participants in group process, to guide group interaction, and maintain focus toward the Delphi goals. Unlike other derivations of the Delphi technique, this methodology relies heavily on direct interaction between the investigators and the participants. This approach was used primarily because of the complexity of the objectives and the requirement to maintain a high level of focus for the group consensus. Given the nature of the population of interest, it was also believed that training in group processes was required.

The following discussion describes the methods and results of employing Delphi techniques at three different facilities. Multiple locations were used to ensure the broadest range of incumbents possible. The focus of these Delphi analyses emphasized inputs along several major issues. In order to meet the objectives of the research, the focus of the Delphis emphasized the identification of personal characteristics and job factors that lead to successful performance and job longevity as a screener.

2. METHODOLOGY.

2.1 SUBJECTS.

There were three Delphi workshops conducted at three different sites. One workshop was conducted at Orlando International Airport (MCO), one at JFK International Airport (JFK), and one at San Francisco International Airport (SFO). In all, 34 screeners participated in this phase of the research, of which 14 were supervisors. Delphi participants were chosen in cooperation with the security firms where they were employed. The investigation team and security firm management personnel selected individuals who: (a) represented employees that were successful at their respective positions; (b) were perceived as potential contributors to the process; (c) demonstrated an ability to work in a team environment; (d) were considered expressive individuals that could communicate effectively in a group; (e) had a minimum of 6 months experience as a screener within the past 4 years; and (f) completed the ATA curriculum and any prescribed security firm training. Participants were also selected on the basis of having sufficient job longevity to be fully knowledgeable about the job at that particular site. All participants received $150 remuneration for their services.

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2.2   MATERIALS.

All Delphi workshops were conducted off-site from the security checkpoint areas. The typical environment for the workshops was an airline training room within the airport complex, but away from the security firm management and administrative offices.

Because of the complexity of the issues involved and the limited time available to conduct the workshops, numerous materials were developed and distributed prior to beginning each Delphi. Each Delphi participant received a pre-workshop package 3-4 days before the workshop commenced. The pre-workshop materials essentially outlined the workshop schedule, briefly described the necessary group processes concepts, and defined the focal issues of the Delphi. Also provided was a description of the overall research project. A cover letter conveying appreciation for their participation and detailing logistical information was also. Participants were instructed to review these materials before the workshop began.

In the cover letter, specific instructions were given to the participants to:

a.   review the agenda to become familiar with the workshop sequence;

b.   review the overview to understand the purpose and structure of a Delphi workshop;

c.   review the introduction to acquaint themselves with the total project;

d.   review the taxonomy of personality traits and the rating scale provided, and choose a rating for each personality descriptor that best represents their perspective in describing superior screeners;

e.   review the list of reasons from fellow screeners identifying why they enjoy the job. Then using the rating scale provided to select the rating they believe best represents the importance of each item in contributing to job satisfaction; and

f.   review the list of reasons from fellow screeners identifying why they dislike the job or want to quit. Then using the rating scale provided to select the rating they believe best represents the importance of each item in contributing to job satisfaction.

All rating scales were simple seven or five-point scales with textual anchor points (see appendix D). Participants were assured that their evaluations would remain confidential, and only the principal investigator would have access to their identity.

The pre-workshop materials were color-coded to direct participants to each of the six tasks described above (e.g., "First, look over the PINK Agenda to become familiar with the workshop sequence."). Each of the six tasks also indicated the amount of time it would probably take to complete the individual task. The workshop package also included a pre-workshop survey, detailed protocols, background information forms, workshop objectives, and post-workshop

surveys. Participants were not required to review or complete these materials before the workshop. The cover letter introduced these materials to the participants as all the items that would be used during the two-day workshop and were included so that there "were no surprises on the day of the workshop."

In order to establish a foundation for group work on the Delphi issues, participants were furnished item pools of factors that were related to the issues. This material was intended to facilitate and guide their inputs on the three major issues.

On the issue of personality characteristics related to screener performance (Objective 1), a taxonomy of personality traits was provided. This taxonomy was in large part constructed from discussions with screeners and supervisors during earlier phases of this research, and from past research conducted on screener characteristics. These data were only provided as a guide and to convey the nature of the issue that was to be explored. Two additional list of factors that may impact career retention and job satisfaction were also provided to each participant (see appendix A and F). As with the taxonomy of personality traits, most of the individual items were derived by comments from screeners and supervisors. Again, no attempt was made to be comprehensive. The purpose of this material was to facilitate discussion and deliberation on the specific issue.

There were two primary reasons for offering initial data to the participants. A major reason for this procedure was to accomplish the objectives of the Delphi process within a severely constrained time period. Screeners and supervisors are operational personnel and their services are required to maintain adequate staffing at the security checkpoints. A lengthy research protocol would interfere with personnel scheduling. The second impetus for using initial data was to expedite focusing the participants on the issues at hand. Providing the item pools was an effective means of quickly identifying the issues under exploration.

Dr. Lofaro provided the ERAU personnel with training in group facilitation and using his Delphi methodology. He also acted as both an author for the protocols and as an editor for all the workshop materials. Further, he attended the JFK workshop where he provided on-the-spot suggestions and comments.

2.3   PROCEDURE.

Each Delphi workgroup was conducted identically using a four-stage process. Participants were led through: (a) an introductory stage; (b) group process training; (c) preparatory stage; and (d) Delphi process stage. The initial two stages were omitted for the second and third Delphi issues for each group to eliminate redundant training and overview information.

The introductory stage included a brief of the overall research program, the goals and objectives of the workgroup, and the importance of participant contributions. An overview of the Delphi stages, outcomes, and responsibilities was also given. We further provided explanations of how the process leads to meeting goals and objectives of the research effort. Particular emphasis was placed on the importance of the data and the value of using them as subject matter experts.

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Every effort was made to convey to the participants that they were the experts and only they, as a group, had the understanding of the traits and characteristics that were necessary for successful screening. We further explained that the reasons and motivation to remain in the career field required close examination, and had thus far been an enigma to the research team. The Delphi process was presented as a team effort, and that a cooperative and open interaction was necessary among and between participants and facilitators.

During this introductory phase of the workshop, participants completed a pre-workshop survey and a background/biographical form (see appendix A). The pre-workshop survey assessed initial attitudes and expectations about the workshop process, whereas the biographical data focused on experience factors related to the job (e.g., time at current job, position, X-ray systems used). Both surveys had self-contained instructions.

All returned forms were assigned a code and placed into a database. The codes were to ensure the subject's anonymity. The introductory stage concluded with the dissemination of administrative and logistical information (e.g., background forms, payment vouchers). This initial stage generally required 60 minutes for completion.

The group process training stage was initiated after a short break period. Instruction and training in group processes, group decision-making, methods of consensus, and group interaction techniques was the hallmark of this stage. The recognition and avoidance of group think phenomena was also presented. All material was presented using a combination of lecture, media, and demonstrations.

The first objective (i.e., personality items and abilities) was in actuality a practice and/or training exercise, since the scientific literature does not bear much weight on personality tests as accurate performance predictors. This training exercise set the stage for the other two objectives (i.e., job satisfiers and motivators, reasons to dislike job or quit) which are viewed as imperative to the screener's occupation.

Participants were re-assured that the facilitators were part of the group and would guide the process during group interaction. Considerable effort was directed to ensure that all participants felt comfortable with the process. This stage of the Delphi workshop typically required 60 minutes for completion.

The preparatory stage began with a review of the objectives, goals, and individual responsibilities. The majority of this stage however, focused on presentation and clarification of the issues. The facilitators re-emphasized how the data is derived, it's uses, and the importance of the information in developing an applicant test battery. This material was reiterated to ensure that the groups fully understood the value of their contribution and to aid in providing focus to the group process. In short, the facilitators directed group discussion toward meeting the goals of the Delphi process. During this stage, instructions for group work were clarified with particular attention devoted to understanding the concepts underlying the scales that would be used in the judgment evaluations. The difference between "judging" items and ratings was once again reviewed in specific reference to the distributed item pools and scales. Once the facilitators

responded to all inquiries and concerns, the participants were released to begin their small group work. Each intact Delphi group was separated into two small groups. This was arranged to facilitate in-depth exploration of the issues. Small groups had either five or seven members and were assigned from the larger intact group by the investigators and station managers in order to avoid any personality conflicts. The preparatory stage typically required 30 minutes to complete. The Delphi process stage was the major component of the workgroup sessions. Participants were initially tasked to work in a small group setting. Each participant was provided an item pool for each of the Delphi areas that addressed the issues of personality characteristics required of successful screeners and factors that impact career longevity. Participants were provided with feedback regarding their own initial evaluations and the group mean for each item.

For the first Delphi, the item pool was a taxonomy of personality traits derived from past research and the task analysis work. The second and third item pools were a compendium of initial factors that may affect career longevity and was developed from screener and supervisor comments.

Participants were instructed to review, modify, revise and prepare commentary for each item pool. There were no restrictions placed on extending the item pools. The participants were briefed that their individual data and their judgment ratings were collapsed and presented to the small workgroup anonymously to use in group discussion.

While reviewing and extending the qualitative content of the item pools, participants were also asked to reach consensus as a small group and scale each of the items by evaluating them for importance.

Several key areas were addressed before allowing participants to begin their work. Foremost was to ensure that participants understood that the item pools were only an initial starting point, and that it was crucial for them to add or modify items based on their own unique perceptions. It was further stressed that their input and the comprehensiveness of the item pools was the most important aspect of the work. Secondly, facilitators re-iterated that all individual data, both qualitative and quantitative, were combined and presented to the group as grouped data without individual identification. Finally, participants were briefed that the small-group consensus data would be the basis for further intact group work, and that it would be beneficial for them to maintain "private" notes to use during the intact group discussions.

The initial focus of the workgroups was to extend the item pool through facilitated exploration of the issues. Individual input was encouraged to clarify and modify each item as necessary. The facilitators promoted group discussion by challenging or provoking inquiry into the ratings provided for each item. Through this process of iteration and structured deliberation, the item pool and individual item ratings were modified. This led to the development of an intact group consensus from the two smaller workgroups.

Participants and facilitators reconvened to conduct the intact group process work. The initial input to the intact group process work was computer-generated data and evaluations compiled from the small groups. Once consensus was achieved within the individual small groups, all

participants were reconvened into the larger intact group. Group discussion and deliberation was initiated as with the small groups to develop consensus within the larger intact group. This process generated the finalized item pool and evaluations for each Delphi. These data would later be collapsed across all Delphi's and be retained as the foundation for the survey. The survey would be used to extend the generalizability of the findings and allow a more diverse input to the research.

The Delphi workshops concluded with participants completing two post-workshop surveys. A group process survey of seven items, using a 5-point scale (see appendix D), required participants to evaluate the group process with respect to goal clarity, group relationships, resource management, and decision-making processes. The second workshop assessment survey asked participants to evaluate workshop products (see appendix E). Participants evaluated satisfaction with the workshop, effectiveness of feedback, and personal contribution to the process. These data were used to provide feedback to the facilitators.

Since adequate numbers of participants were available at each site, we assembled two intact groups to function independently. Generation of two independent databases provided a means to conduct split-half reliability analysis.

3.   RESULTS.

3.1   BACKGROUND INFORMATION.

Thirty-four screeners participated in the Delphi workshops; of those 34, 14 were supervisors (41 percent). Twenty-one were female (62%) and 13 were male (38%). Screeners "time at current job" ranged from 6-168 months (Mean = 34.9 months; s = 31.7 months) and "time with company" ranged from 11-168 months (Mean = 42.8 months; s = 34.2 months). All screeners (N = 34) were grouped into six categories by 12-month increments. A histogram showing the number of months employed (i.e., time at current job) is shown in figure 1. Note that all screeners participated in the ATA-approved training course and were considered to be a good-to-superior screener by their company.

FIGURE 1. FREQUENCY DISTRIBUTION OF PARTICIPANTS BY NUMBER OF
MONTHS EMPLOYED AT CURRENT JOB

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3.2   PRE-WORKSHOP SURVEY.

This section consisted of six questions inquiring about screeners' opinions and attitudes toward the workshop and fellow co-workers. Screeners responded on a seven-point scale with anchors varying from question to question. A figure is shown for each of the six questions, illustrating the frequency of screener responses. These data are presented in tabular format in appendix F.

Question 1 called for screeners to rate their job skills and understanding relative to their peers. Ratings ranged from (Very Highly Skilled = 1) to (No Skill = 7). The mean rating was 2.2 (s = 1.1) indicating that the majority of screeners felt very skillful in understanding and evaluating the job as compared to their fellow workers. The frequency histogram of the seven possible ratings for this item is shown in figure 2.

1. As a pre-board X-ray screener (in this group of screeners), my skills in understanding and evaluating the job put me about here, relative to the others.

FIGURE 2. FREQUENCY DISTRIBUTION OF SCREENERS' RESPONSES TO PRE-WORKSHOP QUESTION 1

Question 2 called for a rating of how screeners felt their ideas would be accepted by their co-workers. Ratings ranged from (Yes, absolutely = 1) to (No, not at all = 7). The mean rating was 2.7 (s = 1.0) indicating that the majority of screeners were confident that their ideas were in agreement with fellow workers. The frequency histogram of the seven possible ratings for this item is shown in figure 3.

2. I think my ideas will be in agreement with the rest of the screeners in this group.

FIGURE 3. FREQUENCY DISTRIBUTION OF SCREENERS' RESPONSES TO PRE-WORKSHOP QUESTION 2

Question 3 called for a rating of how well screeners knew their fellow co-workers. Ratings ranged from (Yes, pretty much = 1) to (No, none at all = 7). The mean rating was 2.7 (s = 1.7) indicating that most of the screeners knew their fellow workers well. The frequency histogram of the seven possible ratings for this item is shown in figure 4.

3. I know most of the screeners very well.

FIGURE 4. FREQUENCY DISTRIBUTION OF SCREENERS' RESPONSES TO
PRE-WORKSHOP QUESTION 3

Question 4 called for a rating of screeners' knowledge of the necessary skills and abilities required for successful performance as a screener. Ratings ranged from (Yes, lots = 1) to (No, none = 7). The mean rating was 2.1 (s = 0.8) indicating that most of the screeners know what the required skills and abilities are for success as a screener. The frequency histogram of the seven possible ratings for this item is shown in figure 5.

4. I have some definite ideas about what the necessary skills and
abilities are for success as a screener.
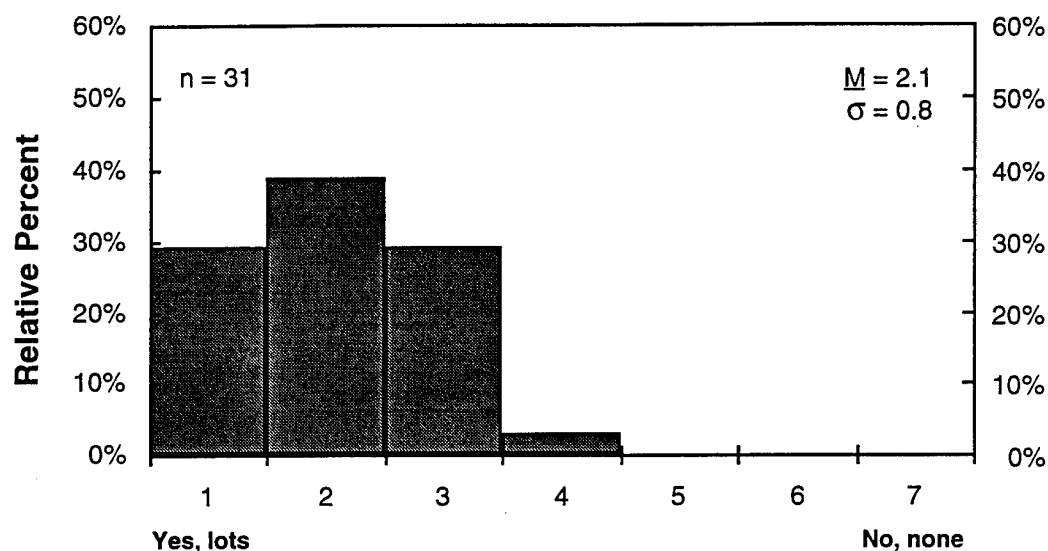
FIGURE 5. FREQUENCY DISTRIBUTION OF SCREENERS' RESPONSES TO
PRE-WORKSHOP QUESTION 4

Question 5 called for a rating of screeners' experience relative to others participating in the workshop. Ratings ranged from (Yes = 1) to (No = 7). The mean rating was 3.5 (s = 2.2) indicating that there was a variety of experience levels present at the workshops. The frequency histogram of the seven possible ratings for this item is shown in figure 6.

5. I have been in airport screening longer than most of the other screeners here.

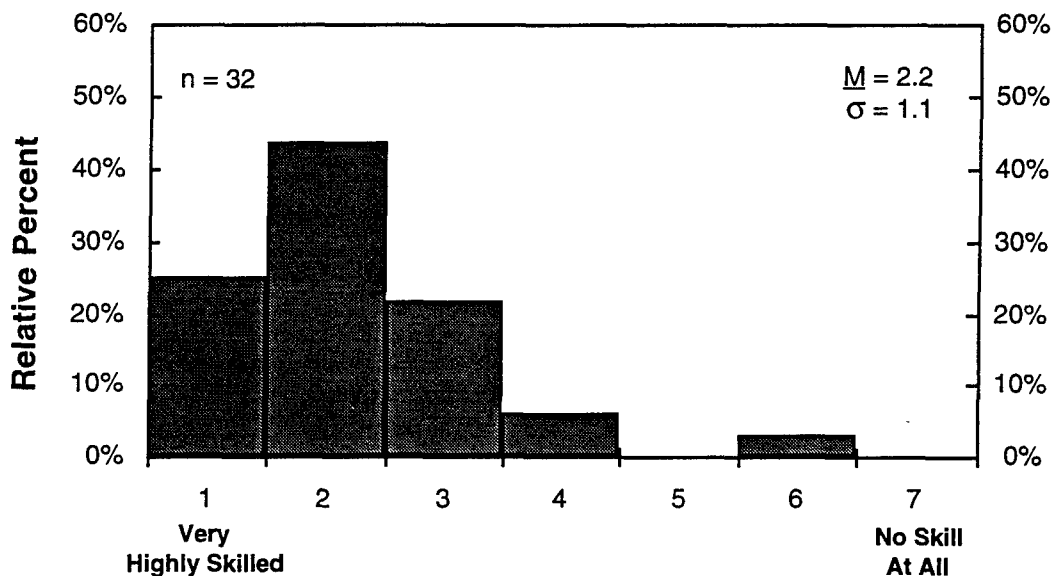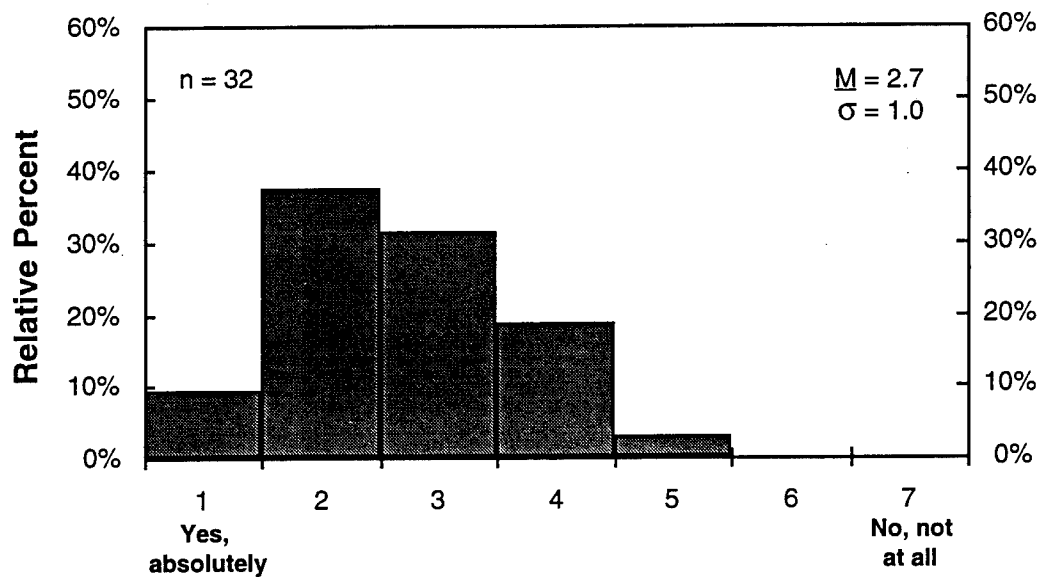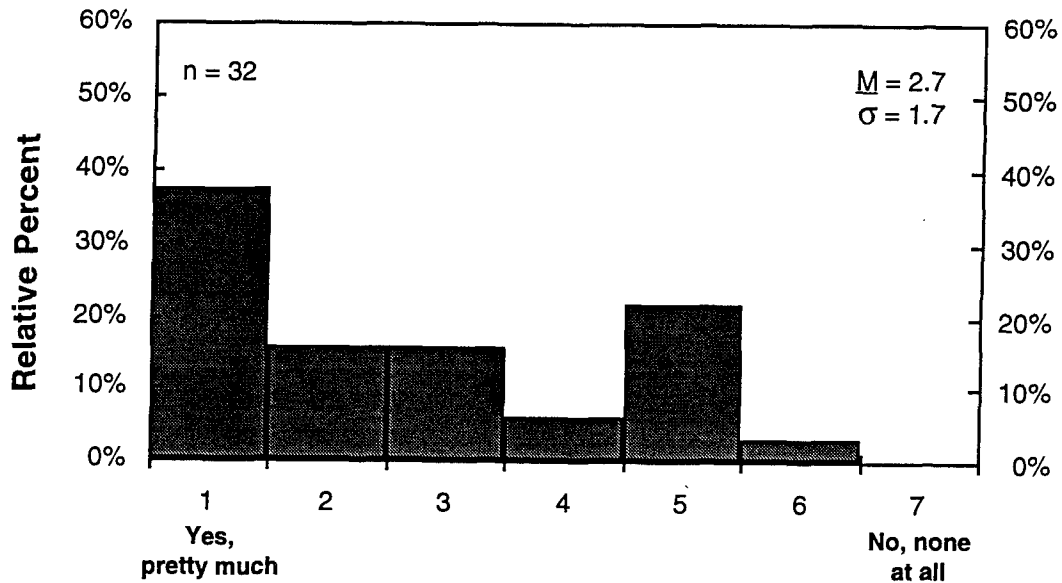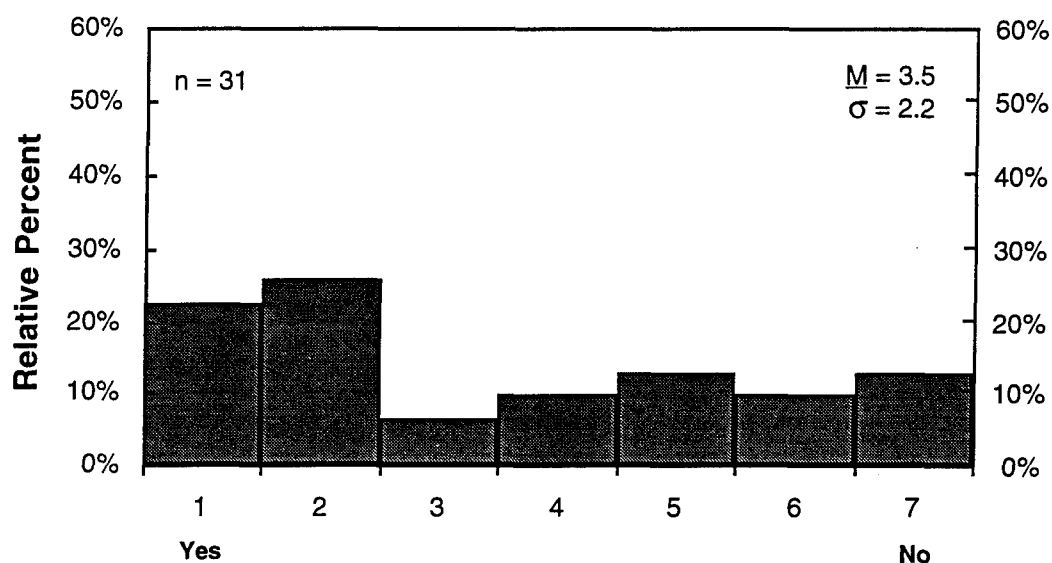
FIGURE 6. FREQUENCY DISTRIBUTION OF SCREENERS' RESPONSES TO PRE-WORKSHOP QUESTION 5

Question 6 called for a rating of the screeners' perceptions as to what the workshop will accomplish. Ratings ranged from (Yes, I think it will be = 1) to (No, I think it may be a waste of time = 7). The mean rating was 1.7 (s = 1.0) indicating that the majority of the screeners felt the workshop would be successful and worth while. The frequency histogram of the seven possible ratings for this item is shown in figure 7.

6. I am anticipating that the workshop is going to be a good experience
and will accomplish what we need to do.
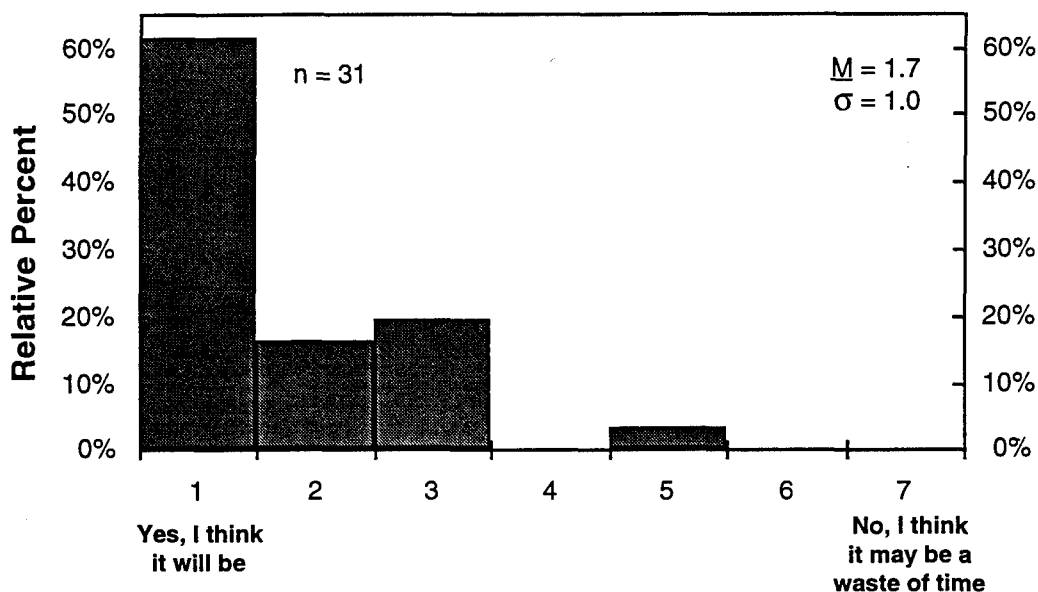
FIGURE 7. FREQUENCY DISTRIBUTION OF SCREENERS' RESPONSES TO
PRE-WORKSHOP QUESTION 6

3.3   WORKSHOP OBJECTIVES.

This section of the survey was divided into three parts: (a) personality items and abilities of successful screeners; (b) job satisfiers and motivators; and (c) reasons to dislike job or quit. Several items were presented for each objective (a total of 103 items in all). Screeners were to rate each item by their level of perceived importance according to their respective 5-point scale. A table was generated from these data for each of the three objectives depicting the intact group rating by site.

The majority of the workshop was spent discussing these objectives. Particular attention was placed on the item meaning (i.e., how the group defined the word). This was necessary in many cases before evaluating the individual items. In some instances, item lists were modified to include new items not part of the original list. Other items were combined or collapsed in order to eliminate redundancies, whereas other items were deleted, indicated by a dash (—), because of their ambiguity or irrelevance.

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Note that in each of the following tables, the data are presented in order of perceived importance and not in the order in which they were presented to the screeners during the workshops.

3.3.1 Objective 1 Personality Items and Abilities.

Objective 1 called for screeners to rate those personality factors that contribute, or are necessary, for superior performance. Ratings ranged from (1 = Absolutely Unnecessary) to (5 = Absolutely Necessary). Several personality traits received a group intact rating of '5', indicating that they are viewed as being absolutely necessary for superior performance (see table 1).

TABLE 1. OBJECTIVE 1 INTACT GROUP RATINGS BY LEVEL OF PERCEIVED IMPORTANCE (N = 34)

Personality Items and Abilities	MCO Intact Rating (n = 14)	JFK Intact Rating (n = 10)	SFO Intact Rating (n = 10)
1. Dependable & Responsible	5.0	5.0	5.0
2. Thorough	5.0	5.0	5.0
3. Honest	5.0	5.0	5.0
4. Observant/Alert/Attentive	5.0	4.7	5.0
5. Cooperative & Team Player	4.5	5.0	5.0
6. Courteous & Respectful	4.5	5.0	5.0
7. Confident	4.0	5.0	5.0
8. Motivated	4.0	5.0	5.0
9. Tactful	5.0	4.0	5.0
10. Cautious	4.0	5.0	5.0
11. Positive Mental Attitude	4.0	5.0	5.0
12. Tolerance	4.0	5.0	5.0
13. Persistent	4.0	4.0	4.5
14. Assertive	4.0	4.0	4.0
15. Calm	2.0	5.0	5.0
16. Helpful	3.0	4.0	4.0
17. Energetic	4.0	4.0	3.0
18. Suspicious	2.5	4.0	4.0
19. Enthusiastic	3.0	3.0	4.0
20. Concerned	2.0	4.0	4.0
21. Curious	2.0	3.0	4.0
22. Forceful	1.0	2.0	4.0
23. Outgoing	2.0	3.0	2.0
24. Sensitive	3.0	3.0	1.0
25. Trusting passengers	1.0	1.0	1.0

3.3.2   Objective 2 Job Satisfiers and Motivators.

Objective 2 called for screeners to rate each item in terms of "a reason why I try to/want to stay on the job." Ratings ranged from (1 = Absolutely Unnecessary) to (5 = Absolutely Necessary). Those factors that appear to have a serious impact on career retention and job satisfaction were rated a '5', whereas those rated a '1' or '2' were viewed as not nearly as important (see table 2).

TABLE 2.   OBJECTIVE 2 INTACT GROUP RATINGS BY LEVEL OF PERCEIVED IMPORTANCE (N = 34)

Job Satisfiers and Motivators	MCO Intact Rating (n = 14)	JFK Intact Rating (n = 10)	SFO Intact Rating (n = 10)
1. Medical benefits	5.0	5.0	5.0
2. Retirement benefits	5.0	5.0	4.5
3. Appreciation "by" supervisors	—	4.0	5.0
4. Importance of the work I do	4.0	5.0	4.0
5. Desire to protect people	5.0	4.0	4.0
6. Pride in my work	5.0	4.0	4.0
7. Flexible hours and days	4.5	4.0	4.0
8. The hours of the job (the shift work)	4.0	4.0	—
9. Appreciation "of" supervisors	4.0	4.0	4.0
10. Opportunity for rewards	3.0	4.0	5.0
11. Enjoyment of helping people	3.5	4.0	4.0
12. High responsibility of the job	3.0	4.0	4.0
13. Comfortable place to work	3.0	4.0	4.0
14. Good general work experience	3.0	4.0	4.0
15. Wages job pays	5.0	4.0	2.0
16. Being around people	3.0	4.0	4.0
17. Job is challenging	3.0	4.0	4.0
18. Wanted to learn something new	3.0	4.0	4.0
19. Like working with co-workers companionship)	3.0	3.5	4.0
20. Doing airport security work	—	4.0	3.0
21. Enjoy being busy	3.0	4.0	3.0
22. Thrill of finding targets	2.0	4.0	4.0
23. Wanted to work in airports	4.0	3.0	3.0
24. Recognition by company	1.0	4.0	5.0
25. Fast pace of the job	2.5	4.0	—
26. Want to stop terrorist acts	1.5	4.0	4.0
27. Chance to move into supervisory jobs	2.0	4.0	3.0
28. Others think my job is important	3.0	3.0	—
29. Potential job contacts	2.0	3.0	4.0
30. Makes a good second income	3.0	2.0	4.0
31. Dislike other jobs that were available	2.5	1.0	5.0
32. Difficulty of the job	2.0	3.0	—
33. Doing a job few others can do	1.0	4.0	—
34. My family thinks the job is important	1.5	4.0	2.0
35. Appreciation "from" manager	1.0	4.0	—
36. Enjoy controlling people	2.0	1.0	4.0
37. Job is easy	1.5	2.0	3.0
38. To make friends	1.5	2.0	3.0
39. Opportunity to find weapons	1.5	2.0	—

3.3.2 Objective 3 Dissatisfiers and Dislikes.

Objective 3 called for screeners to rate each item that "best represents your feeling about why people quit and/or dislike being a screener." Ratings ranged from (1 No effect whatsoever) to (5 = Major reason). Many factors were rated either '4' or '5' indicating that there are a number of "important" or "major reasons" for leaving the occupation (see table 3).

TABLE 3. OBJECTIVE 3 INTACT GROUP RATINGS BY LEVEL OF PERCEIVED IMPORTANCE (N = 34)

Reasons to Dislike Job or Quit	MCO Intact Rating (n = 14)	JFK Intact Rating (n = 10)	SFO Intact Rating (n = 10)
1. Poor pay	5.0	5.0	5.0
2. Little or no medical benefits	5.0	5.0	5.0
3. Found "better" job	5.0	5.0	5.0
4. Too much work for amount of pay	5.0	4.5	5.0
5. No longer need second job	5.0	4.0	—
6. No retirement program	5.0	4.0	4.0
7. Doing job temporarily to earn extra money	4.0	4.0	5.0
8. Criticism by supervisors	4.0	4.0	5.0
9. Stressful	4.5	5.0	3.0
10. No opportunities for advancement	4.5	4.0	4.0
11. Not told up front what to expect	5.0	4.0	3.0
12. Supervisor problems	3.5	4.0	—
13. Job is causing physical discomfort	4.0	4.0	3.0
14. Afraid to make a mistake or be wrong	3.0	4.0	4.0
15. Management not listening to suggestions and/or complaints	2.0	4.0	5.0
16. Not appreciated	4.5	4.0	2.0
17. Passenger hostility	4.0	4.0	2.0
18. Job wasn't what I thought it was	4.5	2.0	3.0
19. Job is too difficult	4.0	2.0	3.0
20. Having to work holidays	3.0	4.0	2.0
21. I don't find job important	1.5	2.0	5.0
22. Hard to get to work	2.0	4.0	2.0
23. Dislike co-workers	3.0	2.0	3.0
24. Fear of finding weapons	2.0	4.0	2.0
25. Work is tiring and exhausting	3.0	3.0	2.0
26. Not being kept abreast of what's going on	2.0	3.0	3.0
27. Working with passengers	2.0	3.0	—
28. Family and/or spouse wants me to quit	2.5	3.0	2.0
29. Confronting passengers	2.5	3.0	2.0
30. Decisions have to be made too fast	2.5	3.0	2.0
31. Job is not challenging	2.5	2.0	—
32. Dislike hours	3.5	1.0	2.0
33. Don't like working weekends	2.5	2.0	2.0
34. Job is boring	2.0	2.0	2.0
35. Job is too fast paced	2.0	2.0	2.0
36. Breaks/lunch time not enough	1.0	3.0	2.0
37. Don't want to work in airports	1.5	2.0	2.0
38. Not appreciated by company	—	—	4.0
39. Criticism by supervisors	—	—	3.0

3.4   POST-WORKSHOP SURVEY.

This part of the survey was administered at the end of each workshop. It focused on group goals and was divided into two sections: process and products. A figure is shown for each of the seven questions, illustrating the frequency of screeners' responses. These data are also presented in tabular format in appendix G.

3.4.1   Group Goals — Process.

This section consisted of seven questions where screeners responded on a five-point scale with anchors varying from question to question. Question 1 called for screeners to rate the clarity of their group's goals. Ratings ranged from (No apparent goals = 1) to (Goals very clear = 5). The mean rating was 4.1 (s = 0.9) indicating that the majority of screeners felt the group goals were very distinct. The frequency histogram of the five possible ratings for this item is shown in figure 8.

1. How clear are the group goals?

FIGURE 8. FREQUENCY DISTRIBUTION OF SCREENERS' RESPONSES TO POST-WORKSHOP "PROCESS" QUESTION 1

Question 2 asked screeners to rate how much trust and openness was in their group. Ratings ranged from (Distrust = 1) to (Strong trust and openness = 5). The mean rating was 4.2 (s = 0.7) indicating that their was much trust and openness in the groups. The frequency histogram of the five possible ratings for this item is shown in figure 9.

2. How much trust and openness in the group?

FIGURE 9. FREQUENCY DISTRIBUTION OF SCREENERS' RESPONSES TO POST-WORKSHOP "PROCESS" QUESTION 2

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Question 3 asked screeners to rate how sensitive and aware were the group members. Ratings ranged from (No awareness or listening in the group = 1) to (Outstanding sensitivity to others = 5). The mean rating was 3.8 (s = 0.9) indicating that the sensitivity and awareness of group members was slightly better than average. The frequency histogram of the five possible ratings for this item is shown in figure 10.
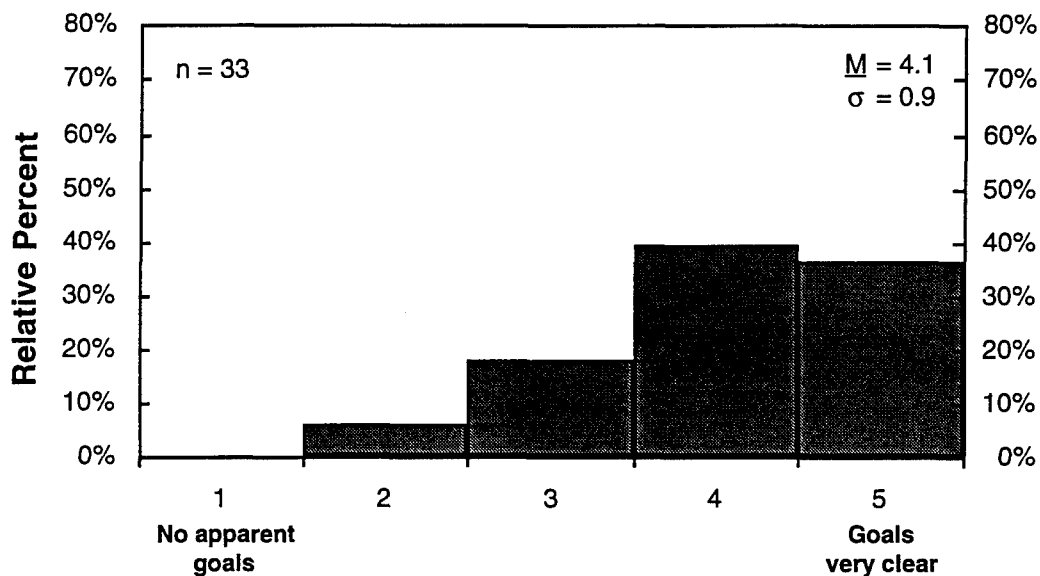
3. How sensitive and aware are group members?

FIGURE 10. FREQUENCY DISTRIBUTION OF SCREENERS' RESPONSES TO POST-WORKSHOP "PROCESS" QUESTION 3

Question 4 asked screeners to rate how group leadership needs were met. Ratings ranged from (Not met, drifting = 1) to (Everyone helped lead the group = 5). The mean rating was 4.4 (s = 0.7) indicating that the leadership functions were evenly distributed among group members. The frequency histogram of the five possible ratings for this item is shown in figure 11.

4. How were group leader ship needs met?

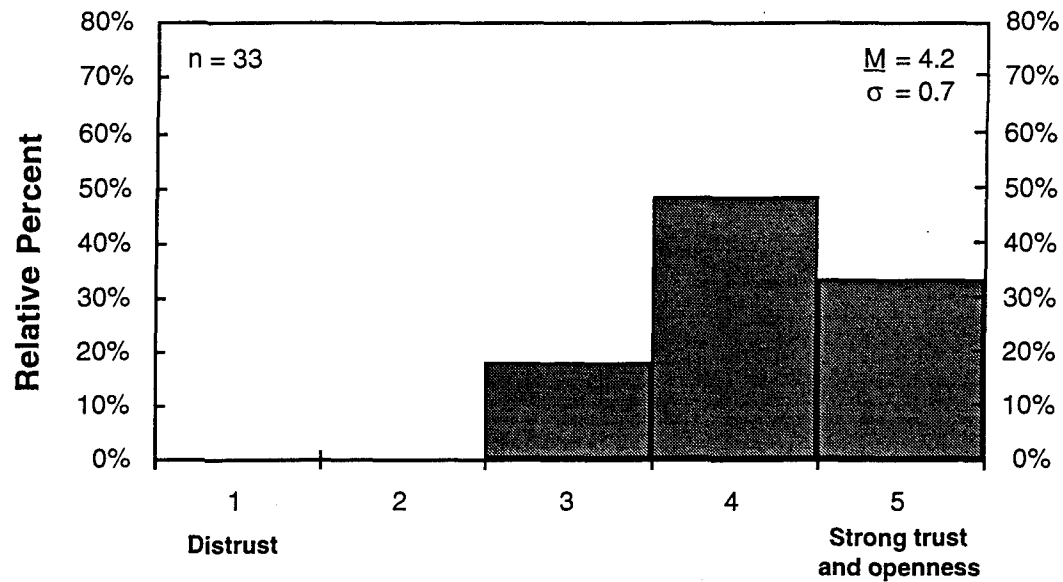
FIGURE 11. FREQUENCY DISTRIBUTION OF SCREENERS' RESPONSES TO POST-WORKSHOP "PROCESS" QUESTION 4

Question 5 asked screeners to rate how group decisions were made. Ratings ranged from (No decisions could be reached = 1) to (Full participation and consensus = 5). The mean rating was 4.2 (s = 0.8) indicating that the groups made considerable attempts to look at all points of view. The frequency histogram of the five possible ratings for this item is shown in figure 12.

5. How were group decisions made?
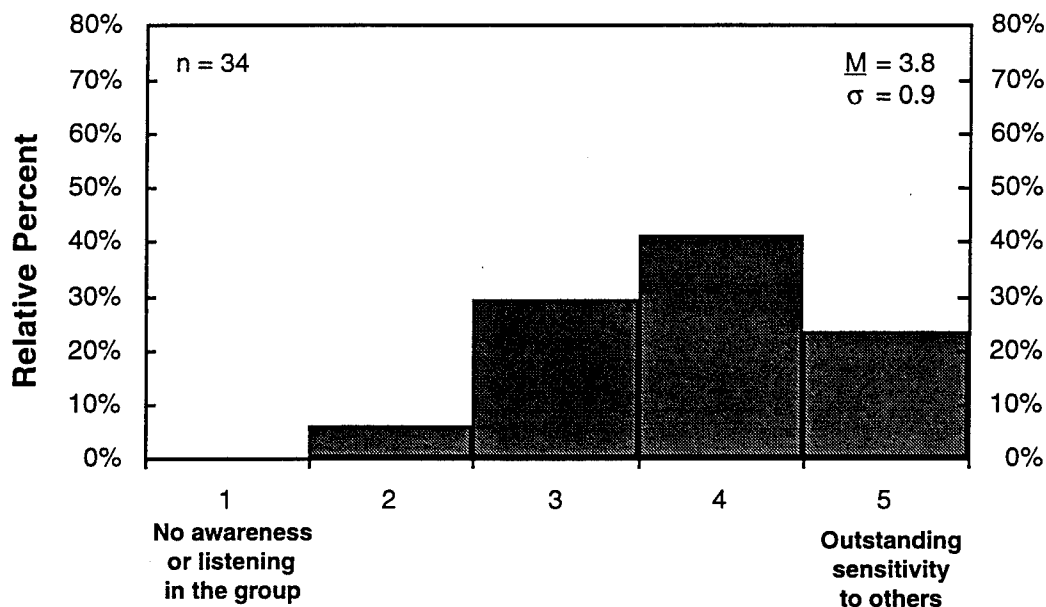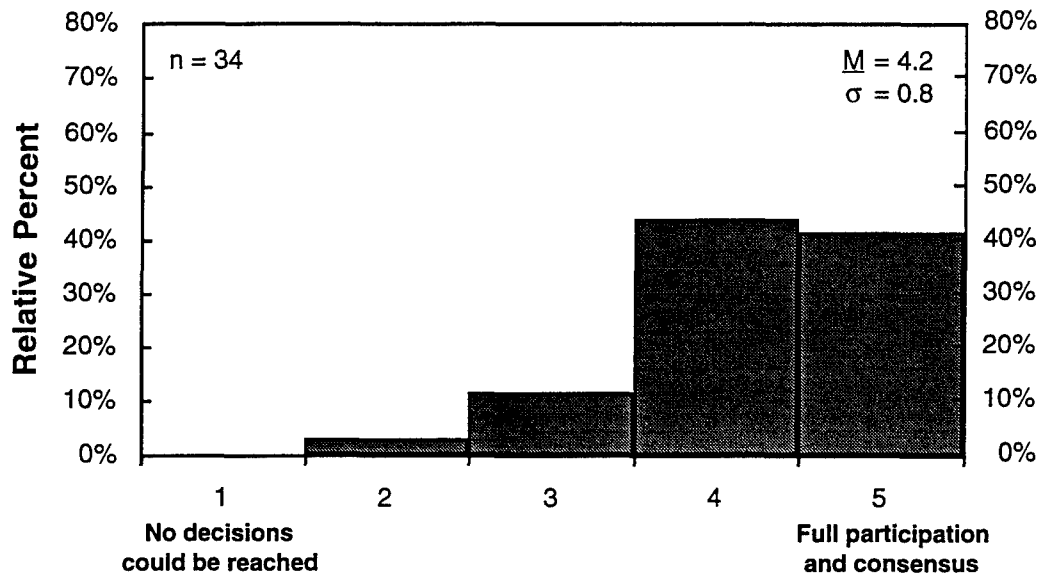
FIGURE 12. FREQUENCY DISTRIBUTION OF SCREENERS' RESPONSES TO POST-WORKSHOP "PROCESS" QUESTION 5

Question 6 asked screeners to rate how well the group resources were used. Ratings ranged from (One or two contributed = 1) to (Individual opinions were fully and effectively used = 5). The mean rating was 4.1 (s = 0.5) indicating that the groups utilized all resources well and encouraged different opinions. The frequency histogram of the five possible ratings for this item is shown in figure 13.

6. How well were group resources used?

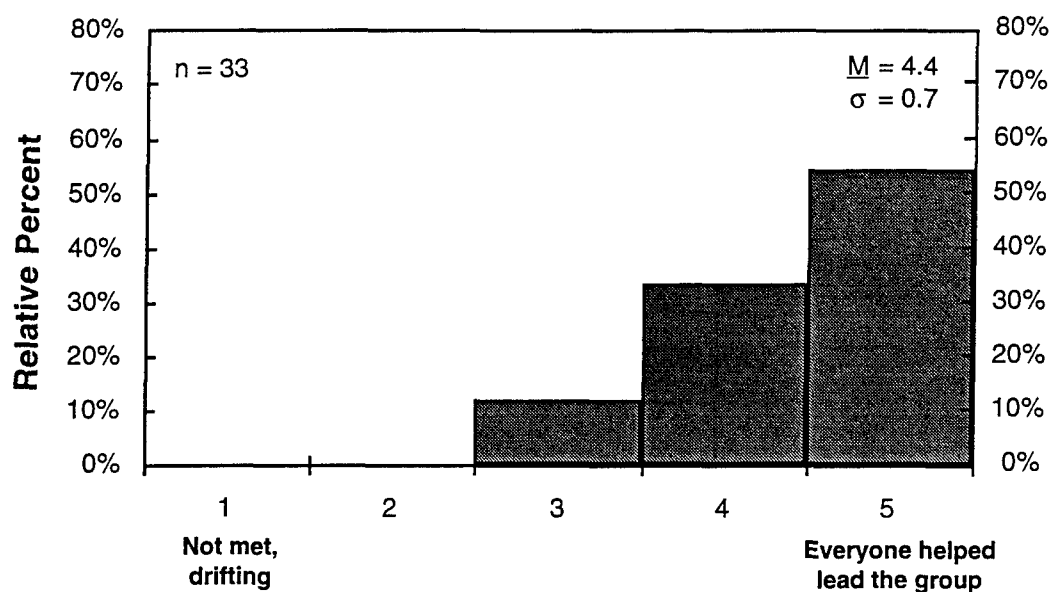

FIGURE 13. FREQUENCY DISTRIBUTION OF SCREENERS' RESPONSES TO POST-WORKSHOP "PROCESS" QUESTION 6

Question 7 asked screeners to rate how much loyalty and sense of belonging was there in each group. Ratings ranged from (Members had no group loyalty or sense of belonging = 1) to (Strong sense of belonging among members = 5). The mean rating was 4.2 (s = 1.0) indicating that there was a strong sense of belonging in the groups. The frequency histogram of the five possible ratings for this item is shown in figure 14.

7. How much loyalty and sense of belonging to the group?

FIGURE 14. FREQUENCY DISTRIBUTION OF SCREENERS' RESPONSES TO POST-WORKSHOP "PROCESS" QUESTION 7

Question 2 called for screeners to rate their opinion about lessons learned from the various feedback. Ratings ranged from (I learned ideas from the feedback = 1) to (I didn't learn a thing from the feedback = 7). The mean rating was 2.1 (s = 1.5) indicating that the majority of the screeners learned various ideas from the feedback. The frequency histogram of the seven possible ratings for this item is shown in figure 16.

Products Question 2.

FIGURE 16. FREQUENCY DISTRIBUTION OF SCREENERS' RESPONSES TO POST-WORKSHOP "PRODUCTS" QUESTION 2

Question 3 called for screeners to rate whether or not they agreed with the ideas in the feedback. Ratings ranged from (I agreed with the ideas in the feedback = 1) to (I disagreed with everything in the feedback = 7). The mean rating was 2.2 (s = 1.5) indicating that the majority of the screeners agreed with the ideas in the feedback. The frequency histogram of the seven possible ratings for this item is shown in figure 17.
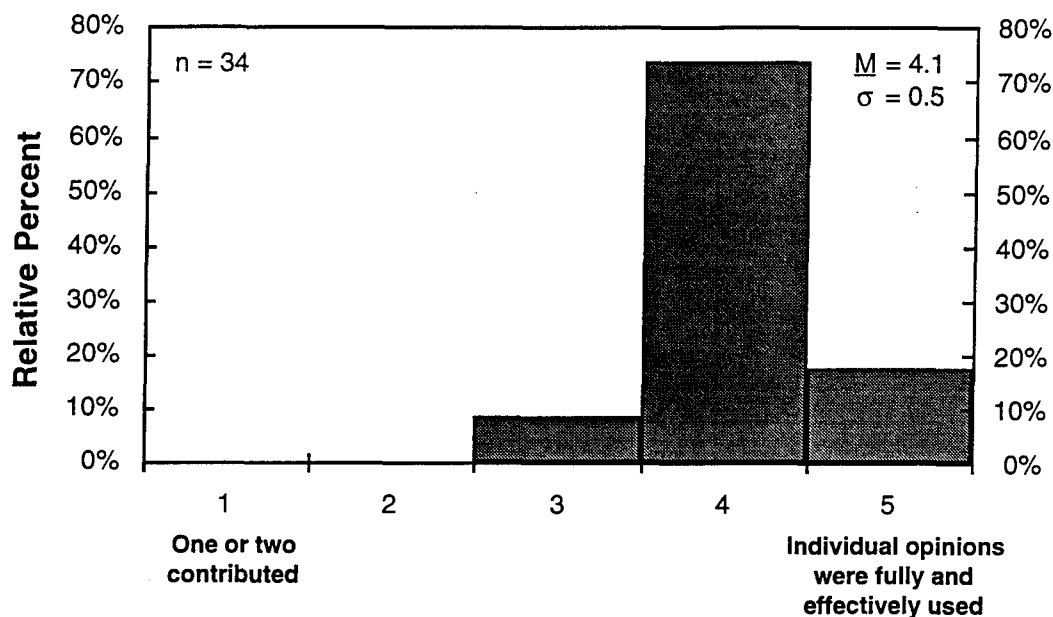
Products Question 3.

FIGURE 17. FREQUENCY DISTRIBUTION OF SCREENERS' RESPONSES TO POST-WORKSHOP "PRODUCTS" QUESTION 3

Question 4 called for screeners to rate their opinion on how easy it was to express their ideas. Ratings ranged from (I could express my ideas o.k. this way = 1) to (I couldn't really say what I wanted to say = 7). The mean rating was 1.9 (s = 1.3) indicating that most of the screeners had little difficulty expressing their ideas and opinions. The frequency histogram of the seven possible ratings for this item is shown in figure 18.
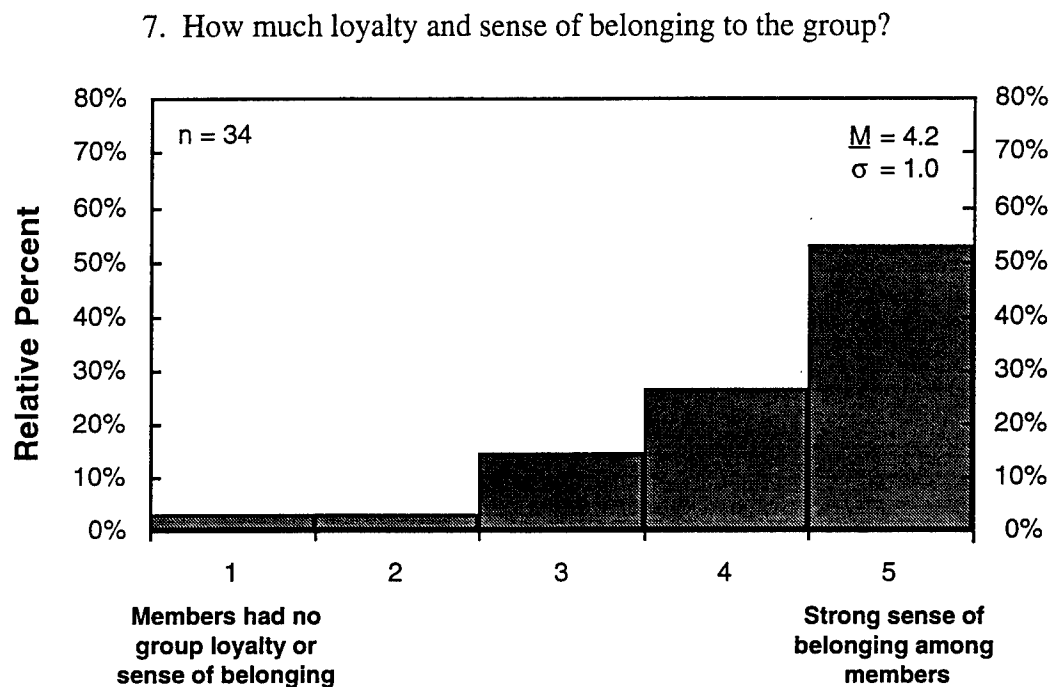
Products Question 4.

FIGURE 18. FREQUENCY DISTRIBUTION OF SCREENERS' RESPONSES TO POST-WORKSHOP "PRODUCTS" QUESTION 4

Question 5 called for screeners to rate their willingness to speak during the workshop. Ratings ranged from (I feel as if I really wanted to talk to people = 1) to (I didn't feel the need to talk at all = 7). The mean rating was 1.8 (s = 1.0) indicating that most of the screeners had no problems discussing their thoughts. The frequency histogram of the seven possible ratings for this item is shown in figure 19.

Products Question 5.

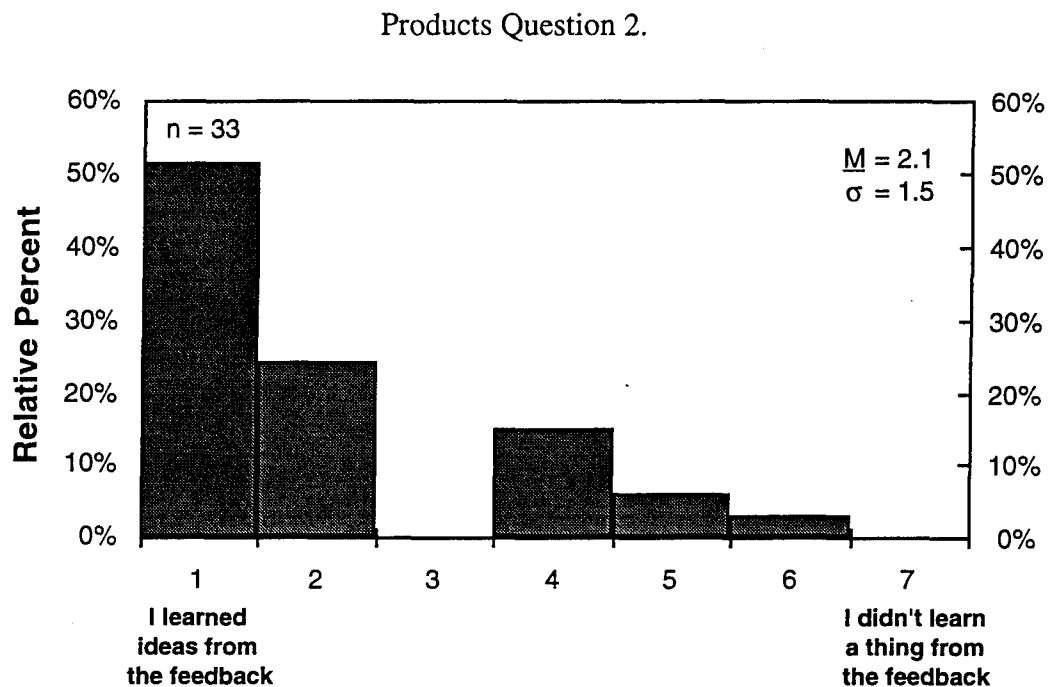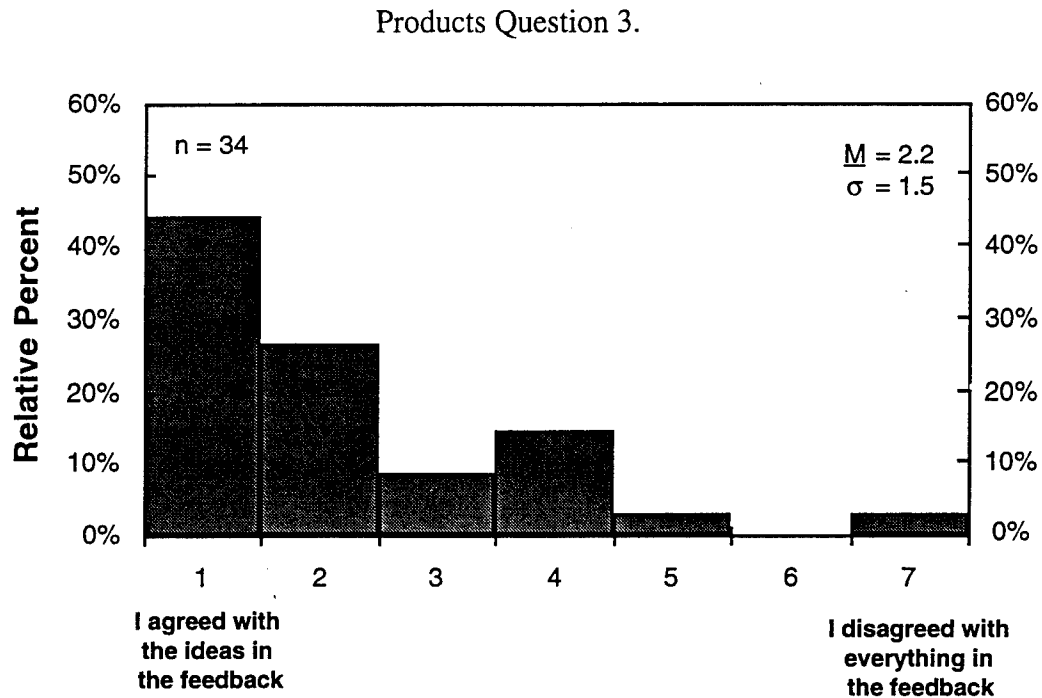FIGURE 19. FREQUENCY DISTRIBUTION OF SCREENERS' RESPONSES TO POST-WORKSHOP "PRODUCTS" QUESTION 5

Question 6 called for screeners to rate their opinion on how well the group understood their viewpoint. Ratings ranged from (I have a feeling people didn't understand or think about my reasons = 1) to (I think people understood my reasons pretty well = 7). The mean rating was 4.5 (s = 2.2) indicating that many of the screeners felt comfortable with how well the group understood their viewpoint. The frequency histogram of the seven possible ratings for this item is shown in figure 20.

Products Question 6.

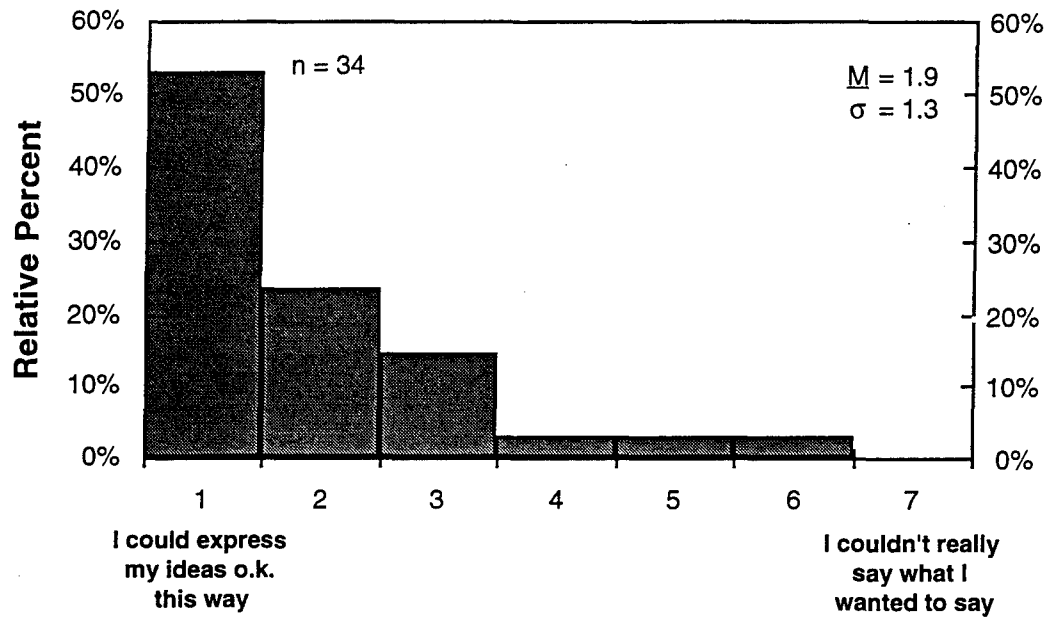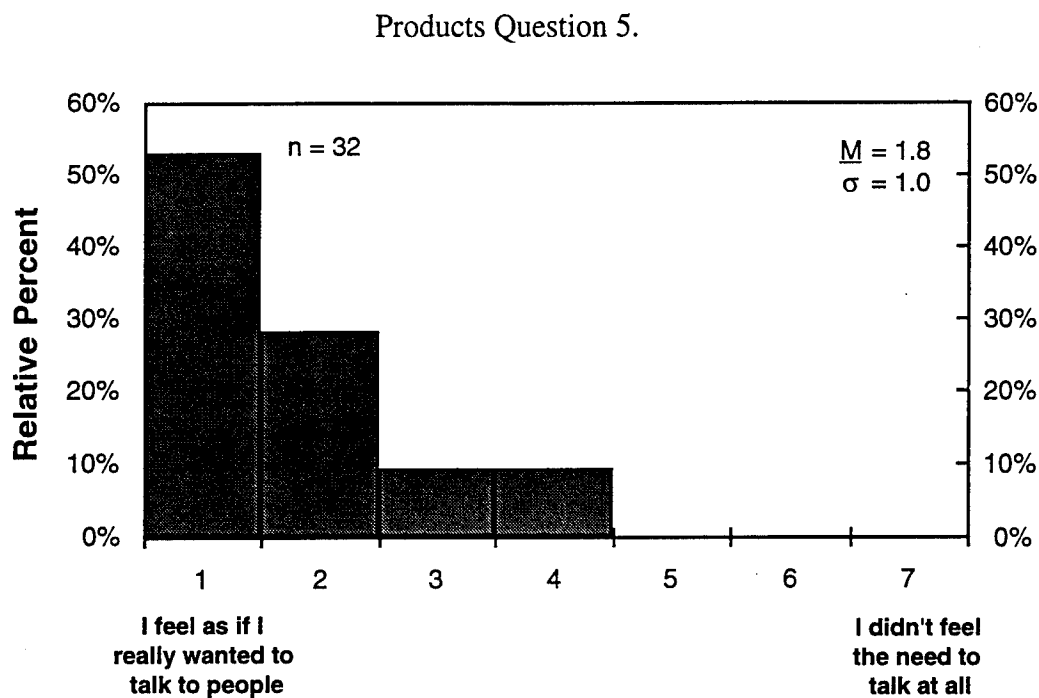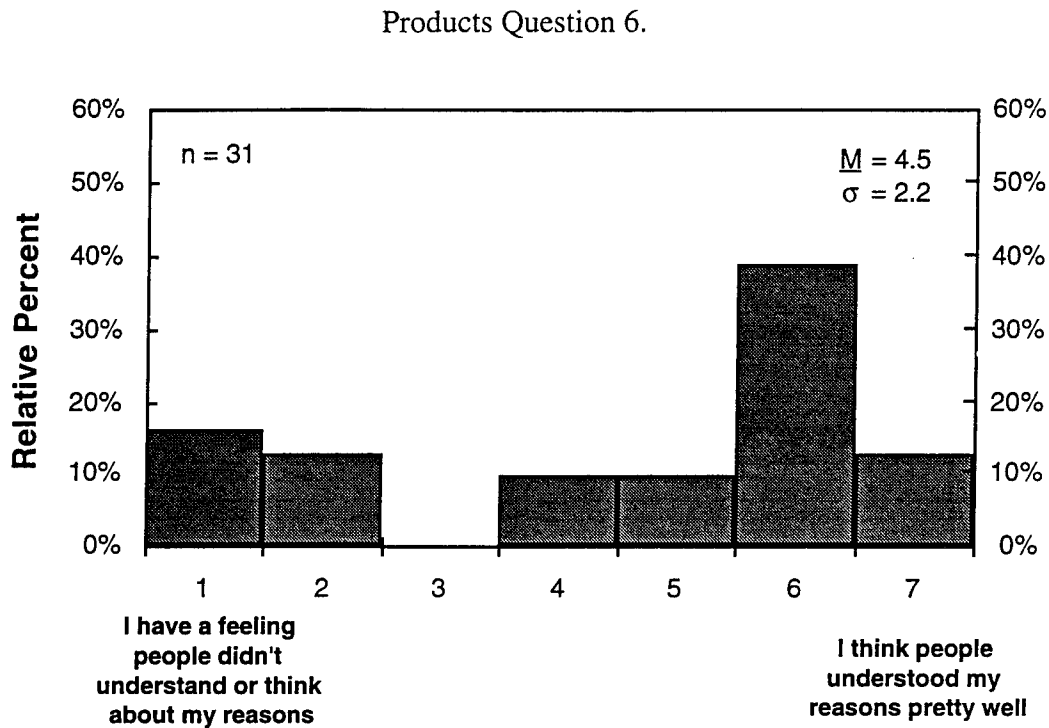
FIGURE 20. FREQUENCY DISTRIBUTION OF SCREENERS' RESPONSES TO POST-WORKSHOP "PRODUCTS" QUESTION 6

Question 7 called for screeners to rate the speed at which ideas and topics were discussed. Ratings ranged from (I think it went too quickly = 1) to (I think it went too slowly = 7). The mean rating was 2.6 (s = 1.3) indicating that the majority of the screeners felt the workshop went fairly quick. The frequency histogram of the seven possible ratings for this item is shown in figure 21.

Products Question 7.
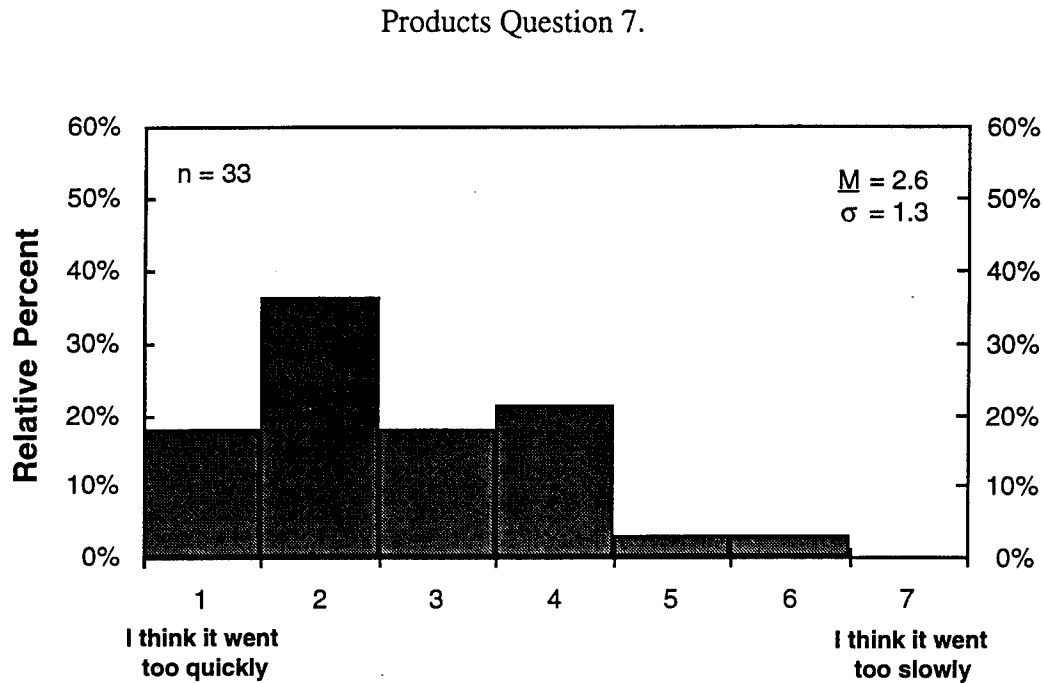
FIGURE 21. FREQUENCY DISTRIBUTION OF SCREENERS' RESPONSES TO POST-WORKSHOP "PRODUCTS" QUESTION 7

4. CONCLUSIONS.

Most practitioners will agree that the success of the Delphi techniques and the quality of the data is contingent upon how effective the group members inter-relate. It is for this reason that post-workshop surveys that assess both process and product dimensions were conducted. The pre-workshop survey was also conducted as a means to view what preconceived expectations the participants had. All Delphi workshop facilitators remarked about the level of enthusiasm and enjoyment expressed by the participants. The degree of appreciation demonstrated by the screener participants at the conclusion of all workshops was sincere and clearly indicated the success of the process. Post-workshop data presented in figure 14 (page 23) strongly support these observations.

4.1 WORKSHOP OBJECTIVES.

Data generated by the Delphi workshops focused on three primary issues: (a) personality items and abilities of successful screeners; (b) job satisfiers and motivators; and (c) reasons to dislike

job or quit. Although the personality traits objective was included in the Delphi workshop primarily as an exercise and for training purposes, some interesting findings are noteworthy.

4.1.1 Objective 1 Personality Factors.

As can be observed in table 1 (page 14), there is a substantial concordance between the three facilities with regard to the intact group consensus ratings. In particular, when the personality traits that have ratings of 5.0 (absolutely necessary) are examined across facilities, there is an 85% overlap between JFK and SFO. Additionally, all traits identified in the MCO Delphi with 5.0 ratings are included completely within the 5.0 category by SFO and JFK groups. The major difference between MCO intact group ratings and the other facilities' ratings is that the MCO participants evaluated eight traits as 4.0 (important) vice 5.0 (absolutely necessary). Consequently, the MCO Delphi generated a much smaller core of traits considered as absolutely critical to being a successful screener compared to the other groups.

The same finding holds true when all personality traits with 4.0 (important) intact group ratings are examined. There is nearly an 80% overlap between SFO and JFK Delphi groups. Nearly all traits evaluated by these two facilities with a 4.0 are included in the 4.0 category by the MCO group. As could be expected, the major difference is that the MCO group generated a more extensive list of traits considered a 4.0 rating (important) than either the SFO or JFK groups. This results almost entirely from MCO participants rating several traits a 4.0 (important) compared to the 5.0 rating (absolutely necessary) reached by the other groups, as identified above.

This pattern of intact group ratings continued for scale valences of 1 through 3. The degree of concordance among the three facilities on personality traits contribution to screener success and performance was unexpected. Problems inherent in defining and reaching consensus on how each personality trait is described was expected to differ among groups. The initial topology of personality traits was also modified by screeners from one Delphi workshop to the next. Our procedures allowed screeners to add, delete, or modify items during the course of the Delphi process. Essentially, each Delphi workshop began with a different topology that resulted from changes made by screeners in the previous Delphi workshop. These problems, coupled with using this objective to "train" group members in the Delphi process, were expected to yield significant differences in intact group ratings between the three facilities. Despite these problems, the data clearly demonstrate considerable agreement among diverse groups of screeners regarding the personality traits required for successful performance in this occupation. This objective was developed and implemented primarily to train screeners in group process, and provided a measure of consistency before proceeding to the other objectives.

4.1.2 Objective 2 Satisfaction and Motivation.

Job satisfiers and motivators that contribute to career retention for screeners can be classified into several categories: (a) compensation/benefits; (b) social/intrinsic; (c) job convenience factors; and (d) recognition. Within each of the four categories of motivators, several factors were consistently rated as important or absolutely necessary for job satisfaction. Not surprisingly,

medical benefits, retirement benefits, wages, and the opportunity for rewards (FAA and authentic targets) were all evaluated as major compensation/benefit contributors to job satisfaction. These factors received among the highest evaluations of the 32 factors identified as contributing to job satisfaction (see table 2, page 15).

Two points need to be addressed before further examining the data. Participants evaluated these factors with regard to their importance for the future. At the time this work was conducted, medical and retirement benefits were usually non-existent or only minimally provided for by the union (e.g., medical benefits for JFK screeners). Wages typically were at minimum wage or within 25 percent of the federal minimum for screeners, and only slightly higher for CSS personnel. Cash rewards for identifying FAA targets or actual targets were only of a token nature ($25 to $50) and were infrequent. On rare occasions, small gratuities were received from passengers for an extra service provided (e.g., transporting a handicapped passenger from one concourse to another). Participants therefore evaluated these factors as the way they would like to see them rather than as they currently exist. This approach is somewhat similar to Rensis Likert's "Profile of Organizational Characteristics."

The second major point that needs to be addressed is the relationship of these factors to one another. Medical and retirement benefits were considered more crucial than the other two factors (i.e., wages and the opportunity for rewards) as motivators to remain on the job. This may in part be due to the considerable increase in public attention given to both health care and the status of the social security system (i.e., retirement). Regardless of the source of concern, these personnel valued medical and retirement benefits more than monetary compensation. This is not easily discernible from the data due to the limitations of the scale values used.

Social and intrinsic motivators/satisfiers were also found to contribute substantially to remaining on the job. Surprisingly, it was also found that the nature and purpose of their jobs offered comparatively high levels of job satisfaction. Most importantly, airport security personnel found considerable gratification in the importance of their work, were very proud of the work they perform, and had a true desire to protect people. These motivators were nearly as important to job satisfaction as compensation and benefits.

Although to a lesser degree, it was found that these personnel derived considerable job satisfaction in helping people (i.e., passengers), wanting to learn a new skill, and in the perceived high level of responsibility they were tasked with. Equally important was the social environment provided by their work. Security personnel enjoyed their work because it allowed them to be around people, and offered them companionship through their co-workers.

These factors taken together were important considerations in the decision to remain on the job. Given the lack of compensation and benefits provided, these factors were crucial in comparing their current jobs to other available opportunities. Most participants agreed that changing the social environment to one that limited contact with people would cause them to become dissatisfied and leave. A number of examples of "isolated" work stations in airport security were provided by participants, and these positions were considered as the least desirable roles in the company.

There were three job convenience factors that also played a significant role in remaining on the job. Participants evaluated the flexibility of the work schedule as a primary reason to continue doing airport security work. Although not a source of satisfaction, the ability to change work days or scheduled work hours, even on short notice, was a key element in remaining on the job. It became readily apparent that changes to this freedom of flexibility, or procedures to limit or restrict the ease of changing scheduled work hours (i.e., for management to obtain a more reliable and predictable workforce), would have a detrimental effect on retention.

The jobs of screener and CSS were also perceived by participants as good work experience and could lead to potentially better opportunities. In addition, the airport environment was considered a comfortable place to work and was also evaluated as a source of job satisfaction.

The final general category of job satisfaction (i.e., recognition), was an area of considerable discussion in each of the workshops. Lack of appreciation and recognition for the roles they play was a primary concern for the workshop participants. Comparatively, recognition was almost as important as compensation and benefits and was a greater contributor to job satisfaction than the social or intrinsic rewards associated with the job. However, the recognition factors were rated as job conditions they would like to have, rather than job features as they currently have. Few participants perceived they were receiving adequate recognition for their performance; and as the data indicate, recognition by supervisors, managers, and the security firm were valued highly as a source of job satisfaction.

Recognition by passengers was considered a potential source of job satisfaction; however, screeners acknowledged that this was not expected of passengers, nor could any intervention change this job element. On the occasions where passengers did express their appreciation, participants did feel it added to their enjoyment of the job, even if only temporarily. Interactions with passengers was more likely to contribute to job satisfaction.

It is apparent from the data and some of the issues presented here that there are a considerable number of job satisfiers and factors that contribute to a screener's decision to remain on the job. This discussion was provided to heighten the awareness of the reader to the issues beyond compensation. Intervention programs and operational recommendation to provide increased job satisfaction and improve turnover rates will be presented in a follow-on report once the remaining phases of data collection are completed.

4.1.3   Objective 3 Dissatisfiers and Dislikes.

The reasons to dislike the job were many and varied and cannot easily be grouped. These data also show less concordance between facilities than that observed with either of the previous two objectives (see table 3, page XX).

The major reasons to quit airport security work were clearly focused on monetary issues. Poor pay, little or no medical benefits, absence of a retirement program, and a perception that the amount of work required was considerably in excess of that appropriate for minimum wage, were all strong sources of job dissatisfaction. It was also observed that it was not uncommon for

individuals to accept employment temporarily (i.e., for a second income) and then terminate their employment when their needs for additional income were met. The Delphi workshops clearly identified that "pre-planned" limited employment was a major cause of turnover.

Given the extensive array of negative elements of airport security work, and the comparatively poor compensation package, most screeners could be considered as actively involved in the job market. Most personnel are searching for opportunities that provide better benefits. Found a "better" job was evaluated as one of the primary reasons for the high turnover problem.

Several other factors that were considered important sources of job dissatisfaction or reasons to terminate employment voluntarily can loosely be described as management problems. Problems with supervisors (e.g., public and "improper" disciplinary techniques), supervisor criticism (i.e., imbalance between disciplinary and recognition/positive interactions), lack of appreciation, management not responsive to complaints or suggestions (i.e., little or no input sought from screeners and CSSs on technical or procedural matters), and little opportunity for advancement within the organization were strong contributors to job dissatisfaction.

Considerable discussion and screener input throughout the Delphi workshops attributed much cause for turnover and job dissatisfaction to management practices. There was a predominant attitude that compensation and benefit issues were also directly related to management practices. The overwhelming "(mis)perception" that exists portrays the security firms as highly profitable companies that generate revenues by underpaying employees. It was apparent that screeners and supervisors have little or no understanding of the organization's structure or the contractual relationships that exist between airline carriers and their company. Several types of interventions will be addressed that respond to these problems as the research program progresses.

Two additional yet significant factors that contribute to job dissatisfaction were found where intervention can achieve desirable effects. First, company policies and consequences for "making a mistake or being wrong" (e.g., missing an FAA test object, passenger/aircrew complaint) were perceived as harsh and punitive. The concern that led to this factor being evaluated as an important job dissatisfier was not the consequences of making a mistake per se, but was related to lack of recognition for outstanding performance. All participants were deeply concerned and dissatisfied that good performance was never rewarded, or only minimally rewarded (e.g., $25 bonus for FAA target detection), yet ramifications for an error were exceedingly severe (i.e., suspension, termination, re-training). The ratio of rewards to punishments, and the relationship of acknowledgments to admonishment were the focus of many discussions.

The second issue that was rated as a key element of job dissatisfaction and can be company controlled is a complaint of "not being told up front what to expect." Delphi participants felt company procedures during the interviewing/hiring process need to be improved to more accurately portray the job and duties. Participants felt many new hires quickly terminated their employment because they were not aware of pertinent job requirements until they actually worked the checkpoint.

Other important factors that lead to job dissatisfaction, but are less easily mitigated as they are elements inherent in the work include: stressful conditions, physical discomfort caused by lifting and remaining in a standing position throughout the shift, and passenger hostility. These factors in and of themselves are not likely to cause self-termination, although they do contribute to job dissatisfaction. The reader is referred to table 3 (page 16) for a complete description and the evaluations of dissatisfiers that were derived through the Delphi process. The proceeding discussion was only provided to clarify those factors that contributed significantly to the turnover problem, and to provide some additional illustration for these factors.

The Delphi process was conducted, in part, for the purpose of identifying and evaluating the factors that lead to self-termination. In this regard, the process was productive in identifying issues that interventions could be directed toward. The Delphi process was not used, nor would it have been appropriate to use, as a means to develop solutions to problems. A word of caution is also advised in reviewing the data. The factors that were identified may not be individually responsible as a reason for leaving employment, but instead must be acknowledged as a set of dissatisfiers with relative valences. A decision to terminate employment is a complex one that may include any number of considerations or factors. The intact group consensus values are also just that, they are a product of group consensus and reflects agreement among participants. An individual's personal decision may weigh these factors differently depending on their own circumstances and other available options.

4.2   POST-WORKSHOP SURVEY — PROCESS.

The process survey data indicated that participants had positive perceptions regarding all aspects of the Delphi process including goal clarity, group openness and sensitivity, group decision making and shared leadership, and group loyalty. Process evaluations were consistently toward the extreme positive range of the scale with little variance between facilities or within groups. Six of the seven process ratings exceeded 4.0 on the 5-point scale with the variance never exceeding 25% of the mean after the data was collapsed across all three facilities.

An additional finding of interest is the consistent trend toward more positive evaluations across the three facilities when viewed in chronological order in which they were conducted. This probably reflects the increasing level of experience of the facilitators. As the facilitators became more comfortable with their roles and refined their skills, facilitation of the group process was more effective.

4.3   POST-WORKSHOP SURVEY — PRODUCTS.

The post-workshop survey regarding workshop products was also very encouraging. Of the seven factors evaluated, five were rated toward the extreme positive anchor of the 7-point scale. Participants were very positive about the results, feedback, capability to express ideas, and the willingness to communicate during the workshop. Although rated moderately positive, participants were comparatively less positive regarding their perception of how well other screeners understood their ideas.

Again, there was a trend toward more positive ratings across facilities when viewed in chronological order. Most notable is with regard to the pace that the workshop proceeded. The initial workshop was perceived as moving too quickly, but with the second and third Delphi workshops the ratings for the pace of the process progressively were rated close to the ideal.

In summary, the post-workshop evaluations were very positive and reflect the screener participants attitudes toward the Delphi process. These findings support the quality of the Delphi workshops and the use of the data obtained through this unique process.

5.   GENERAL FINDINGS.

The most striking general observation that can be seen in the data is the relatively similar findings found across all three facilities. This finding is important in that all three facilities are widely different in the cultural and ethnic backgrounds of the workforce, and the facilities are geographically dispersed. Additionally, the facilities are operated by different security firms with different policies and procedures. These findings are encouraging as they indicate the sources of job satisfaction and dissatisfaction are related specifically to the nature of the job vice being attributable to the demographic biases within the workforce.

From an organizational viewpoint, these data support the development of interventions that can be universally applied. Interventions that are directed toward improving job satisfaction while mitigating or eliminating dissatisfiers would be expected to enjoy similar degrees of success regardless of the facility. This significantly simplifies the development of intervention programs because it avoids the requirement of tailoring the programs to be site specific. Such an approach aids the evaluation process of the effectiveness of the implemented programs, as well, by allowing a comparison of performance of facilities (i.e., turnover rates, job satisfaction inventories) both with and without intervention programs applied. A comparison of the individual effectiveness of intervention techniques can also be achieved by differentially applying the techniques among facilities.

5.1   SUMMARY.

Although the Delphi process has been completed and yielded valuable findings, additional research efforts are required before intervention programs are developed. Three avenues of research are recommended and planned for the forthcoming project year.

The Delphi small-group process is highly effective in defining, developing, and clarifying issues that are relevant. Major drawbacks to employing Delphi procedures however, are the time-consuming nature of the techniques used and the reliance on comparatively small and select sample sizes. A survey instrument is currently being developed using the results from the Delphi phase of the research program. The survey will encompass all job satisfiers and dissatisfiers identified in the Delphi workshops. We are anticipating wide distribution of the survey nationally to obtain data from numerous security firms geographically dispersed around the country. The purpose of this effort is to ensure the generalizability of the findings obtained through the Delphi process.

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A second avenue of research will be conducted to further refine the consensus ratings developed during Delphi workshops. The workshops were instrumental in developing factors related to job retention, and as can be seen in table 2 (page 15), classified the factors into one of five broadly defined evaluation categories. A further refinement of the ratings will be achieved by having an additional group of research-naive screeners re-evaluate the ratings using a bi-polar evaluation technique. Screeners will be provided assessment instruments that task them to identify among each pair of factors the one that has the greater valence. The instruments will be structured to compare factors that have similar intact group consensus ratings. For example, all factors with intact group consensus ratings of '5' will be compared against one another. This provides a more refined ranking of the factors that affect job retention.

As part of the bi-polar evaluation process, screeners will also complete a modified version of the Likert organizational scale. The scale is a 32-item organizational climate survey that assesses organizational factors as they currently exist and how respondents would like them to operate within the company. Climate is assessed along the dimensions of leadership, motivation, communication, decisions, and goals. The instrument is modified to simplify the reading level, and to orient the items to job-specific phraseology. Four items related to control issues will also be deleted as they do not relate to the role of screener. These data are important in designing and developing the intervention programs. The Delphi small-group workshops have clearly identified issues that are related to the organizational climate.

It is also noteworthy to point out that the Delphi process did not provide data that would be useful for the development of ability tests for the selection of screeners. Rather, the data indicated procedural and policy issues that need to be addressed during the interview/hiring process. As an example, there was general consensus that more detail needed to be presented during the interview process to more accurately describe the job. These issues will be addressed in further detail in the final report of this work.

6. INITIAL RECOMMENDATIONS TO IMPROVE EMPLOYEE JOB SATISFACTION AND INCREASE CAREER LONGEVITY.

Although the research program has not yet been completed, the findings from the Delphi workgroups indicate that several interventions can be considered as possible interventions to improve employee tenure while consequently increasing the experience base of the workforce. These recommendations are only presented as interim measures to improve career longevity and will be further detailed in a follow-on report. Several suggested measures require extensive work in the development of training seminars and are more appropriately suited for a separate publication. The recommendations are as follows:

     a.   Increase the starting wages of screener personnel to be competitive with current market conditions in order to attract more qualified applicants. Below market wages creates a workforce that is continually involved in job-seeking activities. By improving the entry level wage for screeners, the number of alternate employment opportunities that remain available and attractive diminishes. When screeners are compensated at the prevailing federal or local minimum wage standards, virtually all other available employment opportunities are at least

equal to, if not higher, in wage compensation. This promotes an active job-seeking climate in search of better wages and benefits. Many screeners remarked that they were actively searching for employment with increased benefits, even if the wage was the same as their current position.

b.   Improve salary advancement schedules to compensate screener personnel for increased experience and tenure on position. This measure is intended to retain personnel who perform effectively. Wage increases should be of small magnitude, but on frequent intervals. Frozen salary schedules promotes increased job seeking activities. Salary increases are also often perceived and appreciated as a form of company recognition.

c.   Consider company contributions to health coverage benefits in order to curtail the job seeking activities of quality personnel. A significant number of workshop participants were actively exploring the employment market primarily to acquire health coverage. Company contributions are suggested to increase with tenure to retain desirable employees. Gradual increases in company contributions that reduce the employee's share of medical coverage can be promoted as wage increases that do not increase the employee's taxable income. Current IRS laws also permit employees to set aside non-taxable income for use in covering medical expenses. An initial step in providing health coverage might be to establish such an individual fund on a voluntary basis. Our data and interaction with the screener personnel placed considerable emphasis on the importance of medical benefits.

d.   Improve staffing levels at security checkpoints to mitigate high workload levels during peak passenger traffic periods. This can be accomplished indirectly by improving employee tenure. Employee staffing levels become problematic since the number of personnel available on any given day are uncertain due to high turnover rates. High turnover rates characteristically create an unstable workforce with high proportions of inexperienced PBS personnel. Experienced personnel are further diluted to provide training on a continuous basis because of the constant influx of new hires.

We believe screener personnel experience high levels of job stress and pressure that resulted from understaffed checkpoints. High turnover rates often created checkpoint stations with a high proportion of novice workers. Novice workers have not acquired the X-ray scanning skills or the library of mental images to perform the job as quickly as expert employees. Similarly, manual bag searches and "pat downs" were also performed at a relatively slower pace in comparison to experienced workers. Undermanning and comparatively slower performance of novice workers consequently led to increasingly longer streams of passengers to be processed. The pressure of impatient passengers trying to clear security, coupled with the screener's mission to be thorough increases the stress perceived by screeners. Screeners also perceive the workload caused by undermanned checkpoints as unreasonably high given the tangible compensation offered to do this type of work.

e.   Consider the possibility of an employee contribution retirement program with a graduated scale of company contributions that is dependent on length of employee tenure. Eligibility can be established after six months with a low company contribution (1% or wages equivalent) after one year. Plans can be established that operate on a matching basis using caps

on company contributions that is determined by length of tenure. Several options are currently available through financial and brokerage institutions that have little or no administrative cost to the participating employer. The benefit can be offered on a voluntary participation basis. Regardless, our preliminary findings indicate retirement benefits are an issue of high importance.

f.   Provide internal supervisory skills training and recurrent leadership/organization skills training to checkpoint supervisors. Considerable job dissatisfaction due to supervisor-screener relationships was identified in the Delphi workshops, as checkpoint supervisors had no opportunity to learn appropriate techniques. Although CSS personnel were technically competent and experienced with security operations, most were not provided with formalized and recurrent training in supervisory skills. Role modeling and management exercises are necessary components of this process. The U.S. military offers an excellent model of this type of training.

Offering basic and advanced training in these skill areas further improves the value of the employee to the company while concurrently increasing the marketability of the individual for positions external to the company. It is anticipated that many supervisors would increase their company tenure to improve their management skills and experience base as an avenue to broaden their opportunities outside the company. The company would therefore be providing no-cost training to employees in return for greater tenure, with the expectation of the individual eventually leaving the firm to advance their careers. The opportunity for professional growth would be perceived as an employee benefit while the company would enjoy the services of higher quality personnel during their employment. An indirect company benefit would be greater responsibility for CSS personnel to handle conflict resolution and to effectively manage subordinate personnel.

It should also be pointed out that "no opportunity for advancement" was a major factor of perceived importance in contributing to self-termination. Advancement within security companies is limited, and expansion of external opportunities is warranted. Training and education in related areas (i.e., English as a second language) can also be offered internally as a benefit to both employee and the company.

g.   "Not told up front what to expect" was another major issue of job dissatisfaction. Briefly, extensive discussion focused on the lack of information provided about job requirements during the application/hiring process. General consensus among participants identified lack of understanding among personnel officers and interviewers as the basis for this problem.

We strongly recommend that company personnel responsible for the recruitment, hiring, interviewing, and processing of applicants undergo the ATA training curriculum to the level of certification. The selection process can be significantly improved by offering applicants expanded information about job demands, expectations, and requirements. This intervention will permit the opportunity for applicants to de-select themselves from further consideration before considerable company training resources are invested.

h.   Provide basic training and demonstration to all employees in job-related areas (i.e., lifting heavy/bulk articles, human inter-personal communications) to reduce job-related

stress and physical discomfort. Much of the job-related stress evolves from passenger and aircrew interactions. Clearly a seminar-formatted training program with periodic recurrent training is required in group dynamics, patterns of communications, communication styles, conflict resolution, and similar areas. Additional training in these areas benefits the company in reduced aircrew/passenger complaints, improved employee-employee relationships, and passenger compliance; while consequently, improving the marketability of the employee for external opportunities.

Although improving employee marketability may appear counter-intuitive, such an intervention should increase job tenure as employees use the opportunities to improve their long term personal prospects and professional growth. The security firms would at least have the services of motivated employees over the period of time that they are continuing with additional advanced training. Many of these employees would likely have left their security position anyway. The goal of this program is to retain employees for at least two years, with the expectation of eventually losing many of them to the job market, as opposed to experiencing significant turnover percentages within only a few months.

Many of the Crew Resource Management programs developed by the air carriers for pilots, flight attendants and maintenance personnel can easily be modified for use with security personnel. We anticipate that this aspect of training can be accomplished in a 16 hour timeblock.

i.   Several areas and issues centered on management communications and responsiveness. The research team noted that screener and CSS personnel held widespread misperceptions and attitudes toward management that were not based in fact. As an example, misperceptions ranged from benefit issues (i.e., calculations of annual vacation/leave time) to promotion issues (i.e., selection criteria of CSS personnel and front office workers) to corporate issues (i.e., profit margins of security firms). Much of these widespread misperceptions were based on a lack of available accurate information and the development of alternate explanations by employees.

Management interface and accessibility to all subordinate company employees is a readily apparent intervention. We suggest at least a periodic physical presence of management personnel at the checkpoints to gain first hand awareness of potential problems and to observe screener/CSS performance directly.

In consonance with these activities, it is also suggested that relevant company information is relayed to employees on a regular basis. This may be accomplished several ways such as through monthly newsletters or by CSS briefings. We do not advocate sharing all company issues and concerns with employees, but do recommend addressing areas of misperceptions to a level sufficient for dispelling false information and attitudes.

j.   The JTA identified potential areas that can be investigated for the development of ability tests in selecting screeners from the available pool of applicants. Although we do not foresee the implementation of selection tests as impacting employee tenure, improvement in

selection protocols can eliminate loss of training resources on those without the requisite abilities to perform the job.

It is anticipated that a small percentage of applicants can be rejected on the basis of selection test results. However, it is important to realize that only a few requisite abilities are necessary to perform the tasks required of screeners. Consequently, only a few selection instruments are expected to be developed as a result of this work. Resources are best utilized in developing solutions to retain quality personnel and in establishing adequate training curriculums.

As this research program progresses, efforts will be dedicated to improving selection decisions by developing refined selection criteria, establishing focused hiring/interviewing protocols, and test-bedding computer-based selection instruments. Personality inventories do not appear warranted at this time for inclusion in a selection model.

k. A major source of job dissatisfaction for screener and supervisory personnel can best be described as an imbalance in the relationship between performance and consequences. Indeed, "fear of making a mistake or being wrong" and several reward issues were central to the Delphi objectives for career satisfaction and dissatisfaction. While consequences for failing tests or missing targets ranged from remedial training, suspension, or termination; rewards for successful performance were perceived as minimal and highly infrequent. One participant even remarked that passenger gratuities (i.e., for assisting handicapped travelers) generated more additional income than rewards from the company.

The establishment of objective performance criteria, fair distribution of rewards, and the identification of employee incentives is far beyond the scope of the current report. These issues will be addressed in detail as the project progresses. Further work is in progress now to identify performance criteria that discriminate superior from inadequate performance. In the interim, consideration is invited on the following potential incentive programs to recognize successful performance:

a. company contributions to a local award fund to acknowledge superior employees on a monthly basis. The fund should focus on employee recognition as the primary goal with awards consisting of retail and restaurant gift certificates, savings bonds, or small cash awards;

b. service pins or other uniform designations to acknowledge company tenure;

c. certificates and training record entries to document the completion of the previously identified training courses. Employees should be aware that these accomplishments will be documented on letters of recommendation. We further recommend that employees are provided at least written guidance on developing adequate resumes that highlight their training accomplishments;

d. company non-cash awards (i.e., paid day off, externally supported training) for successful performance in FAA tests;

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> e. air carrier provided incentives for outstanding critical performance:
>
>> 1. cash awards
>> 2. use of amenity lounges for specified time periods
>> 3. standby or restricted airline seats for domestic travel
>> 4. amenity coupons (i.e., $5.00 airport food establishment vouchers)
>
> f. competitive selection and recognition of screener and CSS of the quarter and year.

Although the incentives have a monetary value on their own, the primary objective for such programs is to convey supervisor and company recognition for performance. Recognition of desirable performance is an integral component of employee satisfaction and will contribute to career tenure.

The suggestions provided above were not meant to be exhaustive, but were given only to demonstrate the broad range that incentives can cover. Air carrier participation was suggested as an important element of this process since security personnel represent and act on behalf of the carriers. It is to the benefit of the carriers to support such programs. Beyond the obvious responsibility and obligation of the carriers under FARs to maintain adequate security measures by employing qualified personnel, screener and CSS personnel directly impact passenger satisfaction and comfort. Improvements in employee tenure provides a more experienced, stabilized, well-trained, and reliable workforce. A dependable and experienced workforce directly impacts passenger flow by reducing passenger processing time that results from inadequate staffing levels and the comparatively slower performance that is characteristic of novice workers.

We further anticipate that if security personnel are provided the training seminars identified earlier, a significant decline in aircrew/passenger complaints could be realized. Professional and courteous service by security personnel would reflect positively on the carrier as passengers experience less delays and confrontations. It is to this end that air carrier support and cooperation is needed.

In summary, numerous recommendations have been offered with the goal to improve job satisfaction and increase employee tenure on the job. These interventions would have a direct impact on reducing employee turnover, increasing the experience base of the workforce, decreasing the demand on training resources, lowering the costs of recruitment and selection, and providing stability to the workforce. Given that effective security at airport facilities is by its very nature a team effort, improved workforce stability and longer employee tenure should increase performance of the overall security system.

These interventions are based entirely on the work completed thus far. The suggested interventions are just that — suggested. They have been proposed in response to those items/issues that were evaluated by security personnel as having the greatest impact on job satisfaction and reasons to leave the job. Continuing efforts in this research endeavor are further directed toward improving the selection and retention of quality personnel.

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APPENDIX A
DELPHI WORKSHOP PACKAGE

Small-group Delphi Workshop:

Pre-board Security Screeners

Embry-Riddle Aeronautical University

and

The FAA Technical Center

July 19-20, 1994
San Francisco International Airport

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Agenda

Small-Group Delphi Overview

Introduction To Screener Hiring

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Pre-Workshop Survey

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Reasons To Remain Or Leave The Job (Objectives 2 & 3)

Group Goals Survey — Process

Post-Workshop Survey — Products

PRE-BOARD X-RAY SCREENER SELECTION
WORKSHOP AGENDA

<u>DAY 1</u>

8:00 - 9:00   Welcome and Introduction of Participants and Staff

                   Brief Overview of Project, Goals, and Objectives

                   Complete Participant Background Sheet, Pre-Workshop Survey
                   and Pay Voucher

9:00 - 9:30   COFFEE BREAK

                   Distribute Workshop Materials

                   Question & Answer Session on Workshop Objectives & Techniques

                   Administrative & Payroll Items

9:30 - 10:30   Workshop Training Session

10:30 - 12:00   Discuss & Begin Objective I (Personality Items & Abilities)

1200 - 1:00   LUNCH

1:00 - 3:00   Objective I Work Session

3:00 - 3:15   BREAK

3:15 - 4:45   Complete Objective I (Consensus)

4:45 - 5:00   Day 1 Wrap-Up

DAY 2

8:00 - 9:30   Discuss & Begin Objective II (Job Satisfiers and Motivators)

9:30 - 9:45   COFFEE BREAK

9:45 - 10:45   Objective II Work Session

10:45 - 12:00 Complete Objective II (Consensus)

12:00 - 1:00   LUNCH

1:00 - 2:30   Discuss & Begin Objective III (Reasons to Dislike Job or Quit)

2:30 - 2:45   COFFEE BREAK

2:45 - 3:30   Continue Objective III Work Session

3:30 - 4:45   Complete Objective III (Consensus)

4:45 - 5:00   Post-Workshop Surveys and Workshop Wrap-Up

SMALL GROUP DELPHI OVERVIEW

Delphi methods help the way we communicate within and between groups of people. The purpose of "having a Delphi" is to deal with a complex problem by bringing together a group of people who have the skills and expertise required, and to provide you with a structured way to communicate with one another to solve the problem. The Delphi methods help us to keep our attention on coming together with good solutions. We will be using a modification of Delphi techniques. This modification is one that uses small group techniques like feedback, information sharing, help from trained group leaders, acceptance of everybody's ideas, working as a group, and more. This way, the good ideas of each member of the group are used. The group develops a team spirit which leads to good and valuable results.

We take this opportunity to welcome you to the Workshop. We look forward to working with you and coming up with ideas that will help the FAA and us with putting together a test to hire new screeners.

PRE-BOARD X-RAY SCREENER SELECTION

INTRODUCTION

The job of pre-board x-ray screener is an extremely important one. Your efforts are responsible for the protection of the lives and safety of millions of travelers each year. Your presence at airports helps to discourage would-be terrorist actions. How well you perform your job makes this possible. The amount of pay you receive to do this job does not reflect upon its importance. The job is so important that it is necessary that we only hire those who are best able to do the job, and who are willing to continue as screeners. That is the purpose of this workshop¼ to ask your help in finding the right people.

In order to be able to hire the right people for the job of airport security screening it is necessary to make proper tests. Those who do well on the tests should do well on the job; those who do poorly on the tests we would expect to do poorly on the job. For instance, if someone does poorly on some sort of math test, we would not expect them to be good cashiers or bookkeepers. The tests have to be accurate in order to work. This means we should also expect some people to do well on the tests while others do just OK or poorly. The entire idea is to figure out who will be successful and who won't be successful as a security screener by using the results of the tests we give them.

One way to create these tests is to have successful and experienced screeners and CSS's, such as yourself, give the abilities, and rate them for importance, that are necessary to be a successful screener. It is also very important to know what things about the job cause you to want to keep the job, and for what reasons others quit. So, we really need to find out what it takes to be a successful screener, and why you and others like you want to keep this kind of job. Then it is simply a matter of finding other people who are like you.

But how do we know if the tests work? We can be sure of two things. One, that you know what abilities and personality is needed to be a successful screener. And two, that we are pretty capable of making tests to measure what you say are important characteristics. But we still need to be sure we are both right....we wouldn't want to make mistakes and hire people who can not do the job because they aren't capable, or who will quit soon after getting the job. We also do not want to not hire people who would be good screeners because the tests are not accurate.

We can do this by hiring people for the job and then giving them the tests. After training and a few weeks on the job we can see how well they detect targets. If we all did our job right; those who are not very good at screening, or who quit, would not have done very well on the tests we made. We would also expect that those who are good at performing the test also did well on the job.

Now, back to where you fit in. You will be participating in the workshop to give your ideas on what skills, abilities, personality traits, and reasons to stay on the job are important for being a successful screener. Only you have a real understanding of this since you do the job. You are the EXPERTS. You will also be asked during the workshop to judge and rate those abilities, skills, reasons, and personality traits that are the most important to being a successful screener.

We will also ask you for your opinions and ideas on how to measure how well a screener does the job. Since you are the experts, you are the people best able to decide if a person can do the job or not. This is only if time permits.

WORKSHOP OBJECTIVES

The work will be based on your experience, knowledge, and some materials that we will provide. As a group, we will:

Objective 1: Develop a list of the personality traits, characteristics, and abilities that YOU feel that an x-ray screener has — and needs to have — to be a superior screener. We want to know what makes the best screeners the BEST screeners. This will be done by:

    A. Changing or "scrubbing" the list that will be provided to you by adding things you think are important and are not on the list, or by removing items that you feel are not needed. The final list should only have items you feel are truly important to being a successful screener.

    B. Using a "critical incident methodology" to consider the list carefully and making any final changes. We will explain this during training. For now, consider it as thinking of really unusual and great screener targets detected and why they happened — what is it about the incident that made it happen.

    C. Rate the final list of items using the scales we provide to you.

Objectives 2 & 3: Develop a set of job satisfiers and dislikes that impact screener decisions to stay on, or leave the job.

    A. Identify, discuss and make a list of the reasons why people enjoy or stay on the job. We want you to consider what is there about the job that keeps you and your fellow workers returning to the job each week.

    B. Identify, discuss and make a list of the reasons why people do not like the job or quit. What are the reasons others have told you they are quitting.

    C. Considering both lists, what do you suggest, can be done to improve the job, make it more enjoyable and satisfying, or how the pay and reward system can be made better. What will need to be changed to help people decide to stay on the job.

        NOTE: We do not want to discuss only the negative aspects of the job; we also want to discuss how to keep yourself and others on the job and with the company.

    D. For each of the two lists you created, rate the items using the scales provided.

Pre-board X-ray Screener Selection:
Participant Background

_____
Name

1. Company working for: _____

2. Time at current job: _____ months

3. Current airport assigned: _____

4. Total length of time with company: _____

5. Position (Check all that apply):

    _____   CSS

    _____   Screener

    _____   Instructor

    _____   Management

6. X-ray screening system you use: _____

6a. Other systems you have used: _____

    _____

7. Other airport screening companies you have worked for: _____

    _____

8. Training received and when (month, year): _____

    _____

PRE-WORKSHOP SURVEY

DIRECTIONS: Please circle the number that best represents your feeling about the following statements. Answer quickly — your first impression is often your best.

1. As a pre-board x-ray screener (in this group of screeners), my skills in understanding and evaluating the job put me about here, relative to the others.

Very Highly Skilled					No Skill At All	
1	2	3	4	5	6	7

2. I think my ideas will be in agreement with the rest of the screeners in this group.

Yes absolutely					No, not at all	
1	2	3	4	5	6	7

3. I know most of the screeners very well.

Yes, pretty much					No, none at all	
1	2	3	4	5	6	7

4. I have some definite ideas about what the necessary skills and abilities are for success as a screener.

Yes, lots					No, none	
1	2	3	4	5	6	7

5. I have been in airport screening longer than most of the other screeners here.

Yes					No	
1	2	3	4	5	6	7

6. I am anticipating that the workshop is going to be a good experience and will accomplish what we need to do.

Yes, I think it will be					No, I think it may be a waste of time	
1	2	3	4	5	6	7

Objective 1
(Personality Items and Abilities)

Directions: Referring to the following *personality items and abilities*, please circle the number that best represents your feeling. Answer quickly — your first impression is often your best. Please rate each of the following qualities regarding their contribution to superior performance:

		Absolutely Unnecessary	Somewhat Helpful		Important	Absolutely Necessary
1.	Persistent	1	2	3	4	5
2.	Suspicious	1	2	3	4	5
3.	Assertive	1	2	3	4	5
4.	Trusting	1	2	3	4	5
5.	Confident	1	2	3	4	5
6.	Dependable & Responsible	1	2	3	4	5
7.	Forceful	1	2	3	4	5
8.	Observant, Alert, & Attentive	1	2	3	4	5
9.	Curious	1	2	3	4	5
10.	Cooperative & Team Player	1	2	3	4	5
11.	Outgoing	1	2	3	4	5
12.	Enthusiastic & Energetic	1	2	3	4	5
13.	Motivated	1	2	3	4	5
14.	Thorough	1	2	3	4	5
15.	Tactful	1	2	3	4	5
16.	Courteous & Respectful	1	2	3	4	5
17.	Cautious	1	2	3	4	5
18.	Sensitive	1	2	3	4	5
19.	Helpful	1	2	3	4	5
20.	Calm	1	2	3	4	5
21.	Positive Mental Attitude	1	2	3	4	5
22.	Concerned	1	2	3	4	5
23.	Tolerance	1	2	3	4	5
24.	Honest	1	2	3	4	5

Objective 2
(Job Satisfiers and Motivators)

<u>Directions</u>: Referring to the following *job satisfiers and motivators*, please circle the number that best represents your feeling. Answer quickly — your first impression is often your best. In terms of a reason why I try to/want to stay on the job, I would say that this reason is:

		Absolutely Unnecessary	Somewhat Helpful		Important	Absolutely Necessary
1.	Importance of the work I do	1	2	3	4	5
2.	High responsibility of the job	1	2	3	4	5
3.	Enjoy helping people	1	2	3	4	5
4.	Like working with co-workers (companionship)	1	2	3	4	5
5.	Enjoy being busy	1	2	3	4	5
6.	Comfortable place to work	1	2	3	4	5
7.	Medical benefits	1	2	3	4	5
8.	Enjoy controlling people	1	2	3	4	5
9.	Retirement benefits	1	2	3	4	5
10.	Chance to move into supervisory jobs	1	2	3	4	5
11.	Good general work experience	1	2	3	4	5
12.	Wages job pays	1	2	3	4	5
13.	Being around people	1	2	3	4	5
14.	Doing airport security work	1	2	3	4	5
15.	Appreciation "by" supervisors	1	2	3	4	5
16.	Job is challenging (doing a job few others can do)	1	2	3	4	5
17.	Wanted to learn something new	1	2	3	4	5
18.	Dislike other jobs that were available	1	2	3	4	5
19.	Desire to protect people	1	2	3	4	5
20.	My family & friends think the job is important	1	2	3	4	5

Objective 2 - continued

	Absolutely Unnecessary	Somewhat Helpful		Important	Absolutely Necessary
21. Appreciation "of" supervisors	1	2	3	4	5
22. Pride in my work	1	2	3	4	5
23. Thrill of finding targets	1	2	3	4	5
24. Job is easy	1	2	3	4	5
25. Wanted to work in airports	1	2	3	4	5
26. Flexible hours and days	1	2	3	4	5
27. Opportunity for rewards	1	2	3	4	5
28. To make friends	1	2	3	4	5
29. Want to stop terrorist acts	1	2	3	4	5
30. Recognition by company	1	2	3	4	5
31. Potential job contacts	1	2	3	4	5
32. Makes a good second income	1	2	3	4	5

Objective 3
(Reasons to Dislike Job or Quit)

Directions: Referring to the following items, please circle the number that best represents your feeling about why people quit and/or dislike being a screener. Answer quickly — your first impression is often your best.

	No Affect Whatsoever	Little Affect If Any		Important	Major Reason
1. Stressful	1	2	3	4	5
2. Poor pay	1	2	3	4	5
3. Dislike hours	1	2	3	4	5
4. Don't like working weekends	1	2	3	4	5
5. Hard to get to work	1	2	3	4	5
6. Job is boring	1	2	3	4	5
7. Dislike co-workers	1	2	3	4	5
8. Little or no medical benefits	1	2	3	4	5
9. Job is too difficult	1	2	3	4	5
10. No retirement program	1	2	3	4	5
11. Not appreciated	1	2	3	4	5
12. Too much work for amount of pay	1	2	3	4	5
13. Found "better" job	1	2	3	4	5
14. Having to work holidays	1	2	3	4	5
15. Job is causing physical discomfort (backache, headache, eye strain, etc.)	1	2	3	4	5
16. Family and/or spouse wants me to quit	1	2	3	4	5
17. Job is too fast paced	1	2	3	4	5
18. Breaks/lunch time not enough	1	2	3	4	5
19. No opportunities for advancement	1	2	3	4	5
20. Just doing job temporarily to earn extra money	1	2	3	4	5
21. Don't want to work in airports	1	2	3	4	5
22. Criticism by supervisors	1	2	3	4	5

Objective 3 - continued

	Absolutely Unnecessary	Somewhat Helpful		Important	Absolutely Necessary
23. I don't find job important		2	3	4	5
24. Confronting passengers		2	3	4	5
25. Fear of finding weapons		2	3	4	5
26. Job wasn't what I thought it was	1	2	3	4	5
27. Decisions have to be made too fast	1	2	3	4	5
28. Afraid to make a mistake or be wrong		2	3	4	5
29. Passenger hostility	1	2	3	4	5
30. Work is tiring and exhausting		2	3	4	5
31. Not told up front what to expect	1	2	3	4	5
32. Not being kept abreast of what's going on		2	3	4	5
33. Management not listening to suggestions and/or complaints	1	2	3	4	5

GROUP GOALS SURVEY — PROCESS

<u>Directions</u>: Please circle the number that best represents your feeling about the following statements. Answer quickly — your first impression is often your best.

1. How clear are the group goals?

1	2	3	4	5
No apparent goals	Goal confusion, uncertainty, or conflict	Average goal clarity	Goals mostly clear	Goals very clear

2. How much trust and openness in the group?

1	2	3	4	5
Distrust	Little trust	Average trust and openness	Considerable trust and openness	Strong trust and openness

3. How sensitive and aware are group members?

1	2	3	4	5
No awareness or listening in the group	Most members only interested in their own views	Average sensitivity and listening	Better than usual listening	Outstanding sensitivity to others

4. How were group leadership needs met?

1	2	3	4	5
Not met, drifting	Leadership was by one person	Some leadership sharing among a few group members	Leadership functions distributed among everyone	Leadership needs met creatively and flexibly. Everyone helped lead the group

5. How were group decisions made?

1	2	3	4	5
No decisions could be reached	Made by a few	Majority vote	Attempts at considering all points of view	Full participation and consensus

6. How well were group resources used?

1	2	3	4	5
One or two contributed, but everyone else was silent	Several tried to contribute, but were discouraged	Average use of group members	Group resources well used and all opinions encouraged	Individual opinions fully and effectively used

7. How much loyalty and sense of belonging to the group?

1	2	3	4	5
Members had no group loyalty or sense of belonging	Members not close but some friendly relations	About average sense of belonging	Some warm sense of belonging	Strong sense of belonging among members

/

POST-WORKSHOP SURVEY — PRODUCTS

Directions: Please circle the number that best represents your feeling about the following statements. Answer quickly — your first impression is often your best.

1. I feel satisfied with the results.
   1 2 3 4 5 6 7
   I'm not really happy with the results at all.

2. I learned ideas from the feedback.
   1 2 3 4 5 6 7
   I didn't learn a thing from the feedback.

3. In general, I agreed with the ideas in the feedback.
   1 2 3 4 5 6 7
   I disagreed with everything in the feedback.

4. I could express m ideas o.k. this way.
   1 2 3 4 5 6 7
   I couldn't really say what I wanted to say.

5. I feel as if I really wanted to talk to people.
   1 2 3 4 5 6 7
   I didn't feel the need to talk at all.

6. I have a feeling people didn't understand or think about. my reasons.
   1 2 3 4 5 6 7
   I think people understood my reasons pretty well.

7. I think it went too quickly.
   1 2 3 4 5 6 7
   I think it went too slowly.

APPENDIX B
WORKSHOP COVER LETTER

600 S. Clyde Morris Blvd.   Daytona Beach, FL 32114-3900   (+1) (904) 226-6385   FAX (+1) (904) 226-7050

Center for Aviation/Aerospace Research

July 11, 1994

Dear Participant:

On behalf of the Federal Aviation Administration and Embry-Riddle Aeronautical University, welcome to the Delphi Workshop for Airline Passenger Pre-board Security Screeners. You have been carefully selected from among your colleagues because of your experience and skill. Your personal contribution and enthusiasm is greatly appreciated and will make a difference. The input and ideas you bring to the workshop will help decide the course of how to select future applicants for this vital career field.

Most of your efforts will take place during the actual workshop. However, to be productive and allow the workshop to run smoothly, some preparation is needed. We think this will assist you in getting more out of the workshop and will make the experience more enjoyable.

Attached is a rather substantial amount of information. Don't panic! These are <u>all</u> the materials we will use during the two day workshop — only a small portion is completed by you before we begin. We wanted to ensure there were no surprises for you on the day of the workshop.

To ease you through this package we color-coded the materials you need to complete before the workshop. We also developed a set of steps to take you through the process. After each step the approximate time to complete the step is provided.

BEFORE THE WORKSHOP:

1. First, look over the <u>**PINK**</u> Agenda to become familiar with the workshop sequence. (3 minutes)

2. Read the <u>**GREEN**</u> Overview information to understand what a Delphi Workshop is. (3 minutes)

3. Read the <u>**BLUE**</u> Introduction to acquaint yourself with the project. (5 minutes)

4. Look over the <u>GOLD</u> pages. These pages list personality and ability descriptions and has a rating scale. The descriptions are words screeners used to describe themselves. Using the rating scale, choose a rating for **EACH** of the descriptions. Please write your rating next to each personality description. **CHOOSE THE RATING YOU PERSONALLY FEEL IS MOST ACCURATE IN DESCRIBING SUPERIOR SCREENERS.** Remember, these are your ratings, there are no right or wrong answers. (20 minutes)

5. Look over the <u>YELLOW</u> pages. These pages list reasons from fellow screeners why they enjoy the job and includes a rating scale. Once again, using the rating scale, select the rating you feel is most accurate based on your personal opinion, and write your rating next to **EACH** reason. (20 minutes)

6. Finally, look over the <u>GRAY</u> pages. These pages list reasons from fellow screeners why they dislike the job or want to quit and a rating scale. As before, using the rating scale, select the rating that best fits your personal opinion and write the rating next to each reason. (20 minutes)

All your ratings **ARE CONFIDENTIAL!** Only you, and the project team, knows your answers. The security company you work for, the FAA, and the airline has no access to your individual answers.

The workshop will focus entirely on these topic areas — what makes for a good screener, and what is it about the job that is enjoyable or causes people to quit. During the workshop these issues are the center of all group discussions.

Again, thanks for your assistance. We want this to be a fun and rewarding experience for all....so please help out and "**complete your homework**".

Sincerely,

The Embry-Riddle Project Team Members

P.S. Most of us were trained to screen and worked the positions a little ourselves.

APPENDIX C
PRE-WORKSHOP SURVEY

PRE-WORKSHOP SURVEY

<u>Directions</u>:   Please circle the number that best represents your feeling about the following statements. Answer quickly — your first impression is often your best.

1. As a pre-board x-ray screener (in this group of screeners), my skills in understanding and evaluating the job put me about here, relative to the others.

Very Highly Skilled						No Skill At All
1	2	3	4	5	6	7

2. I think my ideas will be in agreement with the rest of the screeners in this group.

Yes, absolutely						No, not at all
1	2	3	4	5	6	7

3. I know most of the screeners very well.

Yes, pretty much						No, none at all
1	2	3	4	5	6	7

4. I have some definite ideas about what the necessary skills and abilities are for success as a screener.

Yes, lots						No, none
1	2	3	4	5	6	7

5. I have been in airport screening longer than most of the other screeners here.

Yes						No
1	2	3	4	5	6	7

6. I am anticipating that the workshop is going to be a good experience and will accomplish what we need to do.

Yes, I think it will be						No, I think it may be a waste of time
1	2	3	4	5	6	7

APPENDIX D
OBJECTIVE 1 (PERSONALITY ITEMS AND ABILITIES)

Objective 1
(Personality Items and Abilities)

Directions: Referring to the following *personality items and abilities*, please circle the number that best represents your feeling. Answer quickly — your first impression is often your best. Please rate each of the following qualities regarding their contribution to superior performance:

	Absolutely Unnecessary	Somewhat Helpful		Important	Absolutely Necessary
1. Persistent	1	2	3	4	5
2. Suspicious	1	2	3	4	5
3. Assertive	1	2	3	4	5
4. Trusting	1	2	3	4	5
5. Confident	1	2	3	4	5
6. Dependable & Responsible	1	2	3	4	5
7. Forceful	1	2	3	4	5
8. Observant, Alert, & Attentive	1	2	3	4	5
9. Curious	1	2	3	4	5
10. Cooperative & Team Player	1	2	3	4	5
11. Outgoing	1	2	3	4	5
12. Enthusiastic & Energetic	1	2	3	4	5
13. Motivated	1	2	3	4	5
14. Thorough	1	2	3	4	5
15. Tactful	1	2	3	4	5
16. Courteous & Respectful	1	2	3	4	5
17. Cautious	1	2	3	4	5
18. Sensitive	1	2	3	4	5
19. Helpful	1	2	3	4	5
20. Calm	1	2	3	4	5
21. Positive Mental Attitude	1	2	3	4	5
22. Concerned	1	2	3	4	5
23. Tolerance	1	2	3	4	5
24. Honest	1	2	3	4	5

APPENDIX E
OBJECTIVE 2 (JOB SATISFIERS AND MOTIVATORS)

Objective 2
(Job Satisfiers and Motivators)

Directions: Referring to the following *job satisfiers and motivators*, please circle the number that best represents your feeling. Answer quickly — your first impression is often your best. In terms of a reason why I try to/want to stay on the job, I would say that this reason is:

		Absolutely Unnecessary	Somewhat Helpful		Important	Absolutely Necessary
1.	Importance of the work I do	1	2	3	4	5
2.	High responsibility of the job	1	2	3	4	5
3.	Enjoy helping people	1	2	3	4	5
4.	Like working with co-workers (companionship)	1	2	3	4	5
5.	Enjoy being busy	1	2	3	4	5
6.	Comfortable place to work	1	2	3	4	5
7.	Medical benefits	1	2	3	4	5
8.	Enjoy controlling people	1	2	3	4	5
9.	Retirement benefits	1	2	3	4	5
10.	Chance to move into supervisory jobs	1	2	3	4	5
11.	Good general work experience	1	2	3	4	5
12.	Wages job pays	1	2	3	4	5
13.	Being around people	1	2	3	4	5
14.	Doing airport security work	1	2	3	4	5
15.	Appreciation "by" supervisors	1	2	3	4	5
16.	Job is challenging (doing a job few others can do)	1	2	3	4	5
17.	Wanted to learn something new	1	2	3	4	5
18.	Dislike other jobs that were available	1	2	3	4	5
19.	Desire to protect people	1	2	3	4	5
20.	My family & friends think the job is important	1	2	3	4	5

Objective 2 - continued

	Absolutely Unnecessary	Somewhat Helpful		Important	Absolutely Necessary
21. Appreciation "of" supervisors	1	2	3	4	5
22. Pride in my work	1	2	3	4	5
23. Thrill of finding targets	1	2	3	4	5
24. Job is easy	1	2	3	4	5
25. Wanted to work in airports	1	2	3	4	5
26. Flexible hours and days	1	2	3	4	5
27. Opportunity for rewards	1	2	3	4	5
28. To make friends	1	2	3	4	5
29. Want to stop terrorist acts	1	2	3	4	5
30. Recognition by company	1	2	3	4	5
31. Potential job contacts	1	2	3	4	5
32. Makes a good second income	1	2	3	4	5

Objective 3
(Reasons to Dislike Job or Quit)

<u>Directions</u>: Referring to the following items, please circle the number that best represents your feeling about why people quit and/or dislike being a screener. Answer quickly — your first impression is often your best.

		No Affect Whatsoever	Little Affect If Any		Important	Major Reason
1.	Stressful	1	2	3	4	5
2.	Poor pay	1	2	3	4	5
3.	Dislike hours	1	2	3	4	5
4.	Don't like working weekends	1	2	3	4	5
5.	Hard to get to work	1	2	3	4	5
6.	Job is boring	1	2	3	4	5
7.	Dislike co-workers	1	2	3	4	5
8.	Little or no medical benefits	1	2	3	4	5
9.	Job is too difficult	1	2	3	4	5
10.	No retirement program	1	2	3	4	5
11.	Not appreciated	1	2	3	4	5
12.	Too much work for amount of pay	1	2	3	4	5
13.	Found "better" job	1	2	3	4	5
14.	Having to work holidays	1	2	3	4	5
15.	Job is causing physical discomfort (backache, headache, eye strain, etc.)	1	2	3	4	5
16.	Family and/or spouse wants me to quit	1	2	3	4	5
17.	Job is too fast paced	1	2	3	4	5
18.	Breaks/lunch time not enough	1	2	3	4	5
19.	No opportunities for advancement	1	2	3	4	5
20.	Just doing job temporarily to earn extra money	1	2	3	4	5
21.	Don't want to work in airports	1	2	3	4	5
22.	Criticism by supervisors	1	2	3	4	5

Objective 3 - continued

	Absolutely Unnecessary	Somewhat Helpful		Important	Absolutely Necessary
23. I don't find job important		2	3	4	5
24. Confronting passengers		2	3	4	5
25. Fear of finding weapons		2	3	4	5
26. Job wasn't what I thought it was	1	2	3	4	5
27. Decisions have to be made too fast	1	2	3	4	5
28. Afraid to make a mistake or be wrong		2	3	4	5
29. Passenger hostility	1	2	3	4	5
30. Work is tiring and exhausting		2	3	4	5
31. Not told up front what to expect	1	2	3	4	5
32. Not being kept abreast of what's going on		2	3	4	5
33. Management not listening to suggestions and/or complaints	1	2	3	4	5

APPENDIX G
BACKGROUND FORM

Pre-board X-ray Screener Selection:
Participant Background

_____

                                    Name

1.   Company working for: _____

2.   Time at current job: _____ months

3.   Current airport assigned: _____

4.   Total length of time with company: _____

5.   Position (Check all that apply):

                _____   CSS

                _____   Screener

                _____   Instructor

                _____   Management

6.   X-ray screening system you use: _____

6a.   Other systems you have used: _____

      _____

7.   Other airport screening companies you have worked for: _____

      _____

8.   Training received and when (month, year): _____

      _____

APPENDIX H
POST-WORKSHOP SURVEY — PROCESS

GROUP GOALS SURVEY — PROCESS

<u>Directions</u>:   Please circle the number that best represents your feeling about the following statements. Answer quickly — your first impression is often your best.

1.   How clear are the group goals?

1	2	3	4	5
No apparent goals	Goal confusion, uncertainty, or conflict	Average goal clarity	Goals mostly clear	Goals very clear

2.   How much trust and openness in the group?

1	2	3	4	5
Distrust	Little trust	Average trust and openness	Considerable trust and openness	Strong trust and openness

3.   How sensitive and aware are group members?

1	2	3	4	5
No awareness or listening in the group	Most members only interested in their own views	Average sensitivity and listening	Better than usual listening	Outstanding sensitivity to others

4.   How were group leadership needs met?

1	2	3	4	5
Not met, drifting	Leadership was by one person	Some leadership sharing among a few group members	Leadership functions distributed among everyone	Leadership needs met creatively and flexibly. Everyone helped lead the group

5.   How were group decisions made?

1	2	3	4	5
No decisions could be reached	Made by a few	Majority vote	Attempts at considering all points of view	Full participation and consensus

6.   How well were group resources used?

1	2	3	4	5
One or two contributed, but everyone else was silent	Several tried to contribute, but were discouraged	Average use of group members	Group resources well used and all opinions encouraged	Individual opinions fully and effectively used

7.   How much loyalty and sense of belonging to the group?

1	2	3	4	5
Members had no group loyalty or sense of belonging	Members not close but some friendly relations	About average sense of belonging	Some warm sense of belonging	Strong sense of belonging among members

APPENDIX I
POST-WORKSHOP SURVEY — PRODUCTS

POST-WORKSHOP SURVEY — PRODUCTS

<u>Directions</u>: Please circle the number that best represents your feeling about the following statements. Answer quickly — your first impression is often your best.

1. I feel satisfied with the results.   1   2   3   4   5   6   7   I'm not really happy with the results at all.

2. I learned ideas from the feedback.   1   2   3   4   5   6   7   I didn't learn a thing from the feedback.

3. In general, I agreed with the ideas in the feedback.   1   2   3   4   5   6   7   I disagreed with everything in the feedback.

4. I could express m ideas o.k. this way.   1   2   3   4   5   6   7   I couldn't really say what I wanted to say.

5. I feel as if I really wanted to talk to people.   1   2   3   4   5   6   7   I didn't feel the need to talk at all.

6. I have a feeling people didn't under-stand or think about. my reasons.   1   2   3   4   5   6   7   I think people under-stood my reasons pretty well.

7. I think it went too quickly.   1   2   3   4   5   6   7   I think it went too slowly.

APPENDIX J
PRE-WORKSHOP SURVEY DATA

Pre-Workshop Survey Data

Subject No.	Question					
	1	2	3	4	5	6
1	1	3	4	1	1	3
2	2	2	2	3	3	1
3	3	4	5	4	3	3
4	3	2	5	2	4	1
5	1	3	1	1	2	1
6	2	3	1	1	2	1
7	1	3	1	2	1	1
8	2	2	2	1	2	1
9	2	3	3	1	2	3
10	4	4	6	3	7	1
11	2	1	2	2	2	1
12	1	1	1			
13	3	2	1	3	7	1
14						
15	1	1	1	1	7	1
16	2	4	1	2	6	1
17	1	2	1	1	1	1
18	1	2	1	1	1	3
19	4	4	1	3	6	1
20	1	2	2	1	4	1
21	3	2	5	3	5	2
22	2	4	5	2	5	3
23	2	3	5	2	7	1
24	2	2	3	2	2	1
25	2	3	4	2	2	2
26	2	2	3	3	2	3
27	2	3	1	2	4	1
28						
29	3	3	3	2	5	2
30	2	2	5	3	1	1
31	3	3	3	3	5	2
32	3	4	2	2	1	2
33	6	5	5	3	6	5
34	2	2	1	2	1	1
Mean	2.2	2.7	2.7	2.1	3.5	1.7
S.D.	1.1	1.0	1.7	0.9	2.2	1.0

APPENDIX K
POST-WORKSHOP SURVEY DATA (PROCESS & PRODUCTS)

Post-Workshop Survey Data (Process and Products)

Subject No.	Process Questions							Products' Questions						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
1	5	5	4	5	5	4	5	1	1	1	1	1	7	4
2	2	4	4	5	3	4	4	4	4	4	1	1	5	2
3	3	4	5	5	5	4	5	2	1	1	1	1	5	4
4	4	5	5	4	5	4	5	3	1	3	2	2	6	5
5	4	3	3	4	4	4	3	4	5	4	3	4	4	2
6	4	4	4	5	5	4	5	1	2	2	3	2	2	1
7	3	3	3	4	4	5	5	2	1	3	1	3	6	3
8	2	3	2		4	3	2	5	5	3	3	3	2	1
9	4	4	3	3	4	4	5	3	2	2	1	1	6	3
10	3	4	2	4	3	4	3	5	2	2	3	2	6	2
11	5	4	4	5	4	4	5	2	2	1	2	1	6	1
12	4	3	4	5	4	4	3	5	4	4	2	3	6	2
13	3	4	4	4	4	3	3			4	2		5	3
14	5	5	5	5	4	5	5	3	1	2	1	1	6	3
15	4	4	4	5	5	4	4	1	2	2	1	2	6	4
16	5	4	4	3	2	4	1	1	1	1	1	1	7	2
17	4	4	4	3	4	4	5	1	1	1	1	1	2	4
18	4	5	5	5	4	4	4	6	6	7	6			
19		3	3	4	3	4	5	1	1	1	1	1	1	1
20	5	5	5	5	5	4	5	1	1	1	1	1	7	2
21	4	4	5	5	4	4	5	1	1	1	1	1		2
22	5	4	3	4	4	4	5	4	1	1	1	1	2	3
23	4	4	3	3	5	3	3	2	1	2	3	2	4	6
24	3	5	3	4	4	4	4	1	2	2	1	1	6	2
25	5	5	5	5	5	5	4	1	1	1	1	1	6	2
26	5	4	4	5	5	4	5	5	4	5	4	4	4	4
27	5	5	3	5	5	5	5	1	4	1	2	2	1	2
28	4	5	3	5	5	4	5	1	2	1	2	1	7	2
29	5	5	5	5	5	5	5	1	1	1	1	1	1	1
30	4	4	3	4	4	4	4	5	4	4	5	4	1	1
31	4	3	4	4	3	4	4	1	1	1	1	2		4
32	5	5	4	5	5	4	5	1	1	1	1	1	1	4
33	3		4	4	4	5	4	2	2	2	2	2	6	2
34	5	4	4	5	5	4	4	1	1	2	2	2	6	3
Mean	4.1	4.2	3.8	4.4	4.2	4.1	4.2	2.4	2.1	2.2	1.9	1.8	4.5	2.6
S.D.	0.9	0.7	0.9	0.7	0.8	0.5	1.0	1.7	1.5	1.5	1.2	1.0	2.2	1.3

K-2