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Understanding the Air Traffic Control Field Training Process From the Perspective of the Developmental Controller

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16. Abstract

We conducted a study to gather the perspectives of developmental air traffic controllers regarding various aspects of the air traffic control field qualification training process. Our objective was to better understand why some developmentals fail to certify in a field facility despite having been selected for training in air traffic control, in part, based on aptitude for the occupation and having successfully completed foundational training at the FAA Air Traffic Academy. As developmentals completed field qualification training, either successfully or unsuccessfully, they were provided an opportunity to complete the on-line Developmental Controller Questionnaire (DCQ). Items on the DCQ were designed to capture developmentals' perspectives on what went well and what did not go so well in training. The developmentals were also encouraged to comment on their responses to provide additional information and recommendations for improvement. The comments were organized into categories: Training Teams, Training Procedures, Facility Culture, Individual Ability, and Individual Well-Being. Responses highlighted challenges in interpersonal relationships among developmentals and their training teams, lack of consistency and transparency in training procedures, and a facility culture that was perceived as negative. In many cases, these factors exacerbated the stress of learning a new job, oftentimes far from family and friends. We recommended that training standards be made more explicit, that developmentals and their trainers have an opportunity to work together in simulations before on-the-job training (OJT), and that OJT instructors (OJTIs) be provided additional preparation in effective training techniques. We also recommended training in stress management be provided to developmentals and that the developmentals have greater involvement in option selection and facility placement. Additional research will be needed to refine and validate these initial findings regarding the field qualification training process and to consider how to implement the recommendations.

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LIST OF ACRONYMS

AJG	Management Services Group
ATC	Air Traffic Control
ATCS	Air Traffic Control Specialist
ATM	Air Traffic Manager
ATO	Air Traffic Organization
CAMI	Civil Aerospace Medical Institute
CBI	Computer-Based Instruction
CPC	Certified Professional Controller
DCQ	Developmental Controller Questionnaire
ERR	Employee Requested Reassignment
FAA	Federal Aviation Administration
FLM	Front Line Manager
NATCA	National Air Traffic Controllers Association
NEST	National Employee Services Team
OJT	On-The-Job Training
OJTI	On-The-Job Training Instructor
RNO	Race or National Origin
SD	Standard Deviation
TM	Training Manager
TRACON	Terminal Radar Approach Control
TRB	Training Review Board

EXECUTIVE SUMMARY

After passing an initial screening process and rigorous training at the Air Traffic Control (ATC) Academy, some developmentals (ATC trainees) fail to certify as professional controllers during field qualification training. Based on prior success at the ATC Academy, it is assumed that many of these developmentals have a sufficient level of ability to succeed. Therefore, the objective of this study was to identify factors which might be impacting a developmental's chance of success by gathering developmentals' perspectives regarding various aspects of the training process. Using Weiner's attribution theory, we sought to understand how attributions developmentals make for their own success and failure may help identify factors impacting their experience in field qualification training and to use that information to recommend areas for improvement.

Method

We developed three versions of the Developmental Controller Questionnaire corresponding to performance related outcomes: Successful, Unsuccessful-Terminated, and Unsuccessful-Transfer Lower. Each survey had similar items designed to gather both quantitative and qualitative data related to developmental experiences in field qualification training. Question types included multiple choice, "Mark all that apply," Likert Scale, and open response items. Data were analyzed using SPSS. After review, no participants from the Unsuccessful-Terminated (n = 9) group provided a fully completed survey, thus, only data from the Successful (n = 124) and Unsuccessful-Transfer Lower (n = 59) groups are presented in the results or used for discussion purposes. Additionally, we selected comments on the open response items based on relevance, richness of response, and frequency of similar comments. Based on frequency of comments with similar content we developed the following themes for categorization: Training Procedures, Training Teams, Facility Culture, Individual Well-Being, and Individual Ability.

Results

Developmentals from both groups identified their training teams as a difficult work place factor encountered during field qualification training. Many developmentals commented on the unwelcoming attitudes of coworkers and training staff alike, which often had a negative effect on facility culture. Additionally, both groups identified a lack of standardization and consistency among various training procedures including training techniques, expectations for certification, and access to training resources such as simulation training. These, along with other factors such as separation from family and friends, often led to great amounts of stress for developmentals in both groups. Finally, when identifying factors that led to their success or failure in training, developmentals from the Successful group more often attributed their success to individual factors such as ability; while developmentals in the Transfer Lower group most frequently indicated external factors when accounting for their inability to certify. In fact, most developmentals believed they were progressing well when training was suspended due to poor performance. However, despite incurring stress and difficulty during training, there were developmentals who spoke highly of their training personnel and experiences during field qualification training. More often these developmentals reported progress in training when paired with a training team that

fostered confidence building and helped them to identify areas of opportunity in their controlling techniques.

Discussion

Based on the information provided by both groups of developmentals and a review of selected, relevant literature, we recommend five key areas for intervention. First, we recommend the development of training standards for on-the-job training (OJT) to supplement the evaluation report (3120.4-25) and checklists currently in use. Second, we recommend the use of simulation training for developmentals with their OJT instructors (OJTIs) prior to OJT. It is anticipated that the opportunity to work in a simulator with their trainer prior to controlling live traffic will better prepare developmentals for certification, as well as build confidence and encourage more positive trainer-trainee relationships. Third, we recommend that steps be taken to improve how facility personnel interact with developmentals during training. Fourth, we recommend that stress management training be provided for developmentals to counter the stress of learning a new job, oftentimes far from family and friends. This training should include information on common stressors present during field qualification training, as well as coping strategies to proactively manage the stress. Our fifth and final recommendation is to allow developmentals greater involvement in option selection and facility placement by considering previous experiences of developmentals when making facility assignments as well as geographical preferences.

UNDERSTANDING THE AIR TRAFFIC CONTROL FIELD TRAINING PROCESS FROM THE PERSPECTIVE OF THE DEVELOPMENTAL CONTROLLER

Air traffic control (ATC) is a safety-critical occupation, making it important that the Federal Aviation Administration (FAA) recruit and select applicants with the aptitude to control air traffic and then train them to perform at an exceedingly high level. Based on the nature of the work and the aptitudes required (Nickels, Bobko, Blair, Sands, & Tartak, 1995), the FAA has developed a comprehensive, multi-step selection process of cognitive testing and medical, psychological, and security screening to select the best applicants from among those who apply to become an air traffic control specialist (ATCS). Applicants must also meet age requirements for selection. New hires with no experience in controlling air traffic, with few exceptions, must not have reached their 31st birthday. Currently, the FAA recruits from three primary sources: individuals with experience as former military controllers, those with specialized education in ATC (Collegiate Training Initiative [CTI]), and from the general public without prior experience or ATC-specific education. After selection, new-hires enter a tiered training process, beginning at the FAA Academy and on to site-specific training at their facilities, referred to as field qualification training.

Despite advancing through the multi-step selection and training process at the FAA Academy, many new hires fail to successfully complete their field qualification training. The purpose of this research is to better understand how a newly hired ATCS perceives the field training process: what went well, what did not go so well, and what could be done to improve the field training process. Using the attributional framework developed by Weiner, Heckhausen, Meyer, and Cook (1972), we explain how attributions for personal and individual success and failure direct future responses and behaviors, and how these attributions might play a role within the field qualification training process.

ATCS New Hires

If selected, the new hires in the ATCS occupation enter a rigorous ATC academic and field qualification training program. Selectees without prior ATC experience attend training at the FAA's Academy in Oklahoma City to learn introductory air traffic control principles as well as develop and practice the initial skills needed to control air traffic before beginning field qualification training at an ATC facility (FAA, 2017). Success rates at the ATC Academy have varied over the years. Based on an analysis of FAA ATC Academy training outcomes for new hires entering into Air Traffic Basics and Initial Qualification training from January 2012 to January 2017, approximately 35.2% of those assigned to en route and 13.9% of those assigned to tower did not pass the FAA Academy training and were terminated (Pierce, 2017). Selectees with prior ATC experience (e.g. former military controllers) may bypass the FAA ATC Academy and begin field qualification training at an ATC facility.

The FAA strives to identify those individuals with the aptitude for ATC and provide them the training they need to become Certified Professional Controllers (CPCs). However, despite the comprehensive selection processes used and having passed ATC Academy training, some trainees (referred to as "developmentals" when they reach their first field facility) still fail field qualification training. Considering all ATC losses (i.e., academy attrition, developmental losses, retirements, resignations, removals, deaths, and promotions/transfers), and as shown in the FAA's Controller Workforce Plan (FAA, 2016), the FAA estimates that approximately 13% of the losses from 2016 through the year 2025 will be due to attrition in field training (i.e., developmental losses).

Field Training

Developmentals are typically in training at the FAA Academy and an en route or terminal field facility from 18 to 36 months (FAA, 2016). A developmental who successfully certifies on the required positions achieves the status of CPC. Certification is contingent upon successful completion of all aspects of field qualification training, which includes a combination of classroom, laboratory simulation, and on-the-job training (OJT; FAA, 2016). The primary emphasis is OJT, in which the developmental must certify on a variety of control positions associated with different pieces of airspace before reaching CPC status.

While in training, small teams of training instructors are assigned to developmentals to instruct, aid, and evaluate them through each phase of training until they are considered to be at full-performance level and can certify as CPCs (FAA, 2016). Training begins in the classroom, where developmental controllers learn site-specific information, before pursuing the opportunity to practice controlling traffic in a simulated environment. This allows developmentals to develop their skills in a controlled, hands-on setting, before transitioning to an increasingly more difficult level of live-traffic during OJT (FAA, 2017). During the OJT portion of training, the developmental's OJT instructor (OJTI) is plugged-in to the same position as the developmental and directly monitors performance while controlling live traffic. In the event the developmental is in danger of violating separation standards between aircraft, the OJTI may directly intervene in order to maintain the safety of the aircraft. The OJTI provides additional feedback to the developmental during or as soon as possible after each session in order to address strengths and weaknesses, as well as provides detailed recommendations for improving performance. FAA Order JO 3120.4P governs the air traffic technical training process (FAA, 2015).

Our objective was to better understand why some developmentals fail to certify in field training. What factors affect the likelihood of failure or, conversely, success in field qualification training? Two outcomes are possible in the event a developmental fails field qualification training. The first is termination. Based on an analysis of historical data, this is the most likely outcome (Pierce, 2017). However, in some cases, and if the facility manager approves, the developmental may request reassignment to a less complex ATC facility. The National Employee Services Team (NEST) considers each request filed. Within this team, executives from the Air Traffic Organization (ATO) review the provided materials concerning the developmental's work history

and training performance. The NEST then determines if the developmental should be retained based on his/her prior performance in training and assesses the placement opportunities for retaining the developmental (FAA, 2013). Based on their assessment, the NEST will recommend retention or termination. Thus, if a developmental fails field qualification training at a first facility, the options are either termination or transfer to a lower-level terminal facility (for a review, see Pierce, Byrne, & Manning, 2016).

In either case, failure to certify successfully at the first facility comes at a cost to both the FAA and the developmental. The FAA's average cost for training a developmental for one year is approximately $139,207 (FAA, 2014). As mentioned previously, the average time to complete field qualification training ranges from 18 to 36 months based, in part, on facility type and level. Thus, the overall cost of training, depending on how long a developmental spends in training before certifying (or failing to certify) and the type and level of facility to which the developmental is assigned, may cost as much or more than $500,000. Additionally, most developmentals selected to become ATCSs relocate to Oklahoma City without family to attend the FAA Academy before relocating a second time to their field facility assignment for field qualification training. Thus, given the safety critical nature of the occupation and the cost to train applicants, it is important to understand why some developmentals do not certify at their first facility. Furthermore, considering the comprehensive selection processes used by the FAA, as well as the training procedures used at the FAA Academy and in the field, it is possible that factors other than individual-level ability or skill are having an effect on success in field qualification training. A way to begin to understand these factors is to gather the perceptions of those who have just completed the field training process about that training process to determine to what factors they attribute their training outcome, whether success or failure. We believe that understanding the attributions developmentals make about their own outcomes in field training may aid us in identifying interventions to improve the likelihood of successful outcomes.

Understanding Why

According to attribution theory, when events happen, especially negative, surprising, or unexpected events, people will seek to determine why (Heider, 1958). Understanding why an event happened is part of the process of making sense of the current situation and deciding how to act in the future (Kelley, 1971). This form of causal analysis is necessary for adaptation (Weiner, 1985). For example, if a developmental in field training fails to maintain separation between aircraft and attributes the mistake to an unrealistic level of difficulty in the simulated scenario, the developmental's response (affective and behavioral) will be quite different than if he or she attributes the error to overlooking an aircraft or failing to attend to a conflict alert in a timely manner. This example highlights the importance of locus of control in attribution theory (Weiner et al., 1971). Was the error due to external (situational) or internal (dispositional) causes?

We used the attributional framework developed by Weiner, Heckhausen, Meyer, and Cook (1972) to investigate attributions made by ATC developmentals for their success or failure in field qualification training. The model includes four major factors by which individuals tend to attribute

success or failure on a task. These factors are ability, effort, task difficulty, and luck (Weiner et al., 1972). Ability and effort are attributed to internal control, and task difficulty and luck are externally controlled. Furthermore, ability and task difficulty are stable, and effort and luck are unstable factors. Stable-internal factors are thought to be under the control of the individual (Weiner, et al., 1971). In a later revision to the model, Weiner (1985) added controllability as a third dimension or property of causality (Weiner, 1985) and revised locus of control to locus of causality. Controllability accounts for differences within factors. For example, laziness and math aptitude are both considered internal, stable causes, but laziness is generally thought to be under the volitional control of the individual, while math aptitude is not. In Table 1, we present the factors in relationship to the dimensions of stability and locus of causality.

Table 1. Classification Scheme for the Perceived Determinants of Achievement Behavior.

Stability	Locus of Causality	
	Internal	**External**
Stable	Ability	Task Difficulty
Unstable	Effort	Luck

Attribution Theory at Work

To investigate the importance of attribution theory in the workplace, Harvey, Madison, Martinko, Crook, and Crook (2014) conducted a meta-analysis of existing attribution theory research. Their objective was to determine if attributions were useful in predicting workplace outcomes (e.g., affect, performance, leader-member relationship valuations, and reward/punishments decisions) and, if so, to compare the effect sizes of attributions to those of other predictors more regularly investigated in organizations (e.g., justice perceptions, core self-evaluations, and personality traits). They found that the attributions an individual makes about personally relevant outcomes influences the individual's emotional or affective response, which in turn shapes the individual's behavioral response to an event (Harvey, et al., 2014). For example, internal attributions (ability or effort) for success tend to promote self-confidence and efficacy, which, in turn, can lead to improved performance; whereas, external attributions (task difficulty or luck) for success or failure are less beneficial in improving subsequent performance. Effect sizes reported for attributions of locus of causality, stability, and controllability were comparable to those of more commonly investigated variables predicting workplace outcomes.

Why Attributions Matter

Causal attributions influence emotions, expectancies of success, and achievement-oriented behaviors (Weiner, 1985; Weiner et al., 1971). Attributions of success to internal factors (especially effort) will result in greater positive affect and increase the likelihood of continued effort. Persistence in the face of failure aligns with the stability factor such that sustained effort is likely when causes of failure are attributed to unstable factors (lack of effort and/or bad luck). Attributions of performance may also influence interactions with others. For example, we may be more willing to reward others for success attributed to hard work (and, to a lesser extent, high

ability) than luck or ease of task and, conversely, punish others more severely if their failure is attributed to lack of effort rather than bad luck, difficult task, or a lack of ability. In ATC training, the attributions developmentals make about their own success or failure as well as the attributions the trainer or training team make about a developmental's performance might influence subsequent behavior.

However, these attributions will be subject to bias. Biases described by Steiner, Dobbins, and Trahan (1991) include (a) actor-observer differences (negative outcomes for one's self are attributed to external causes, but to internal causes for others); (b) self-serving biases (one's self-esteem is enhanced by attributing positive outcomes to the self and negative outcomes to external factors); and (3) characteristics of the trainee (sex, race, age, attractiveness, and likeability). An example of the self-serving bias in training is if the trainer attributes a trainee's success to good training and failure to lack of effort or ability of the trainee. A related concept is the fundamental attribution error, or over-attribution effect, wherein individuals prefer to attribute the behavior of others to internal causes and have a tendency to ignore the role of environmental factors in the others' behavior (Ross, 1977). Thus, in ATC field qualification training, a fundamental attribution error might occur if a trainer attributes a developmental's initial poor performance to a dispositional factor, such as ability or, in this case, lack of ability without considering environmental causative factors, such as the complexity or volume of air traffic at the time of training.

Additionally, causal attributions play a part in the relationship between trainers and trainees, as well as in determining the type of instructional strategies used by the trainer (Steiner, Dobbins, & Trahan, 1991). Therefore, if poor performance is attributed to a lack of ability or effort, rather than an environmental factor, the trainer might alter instructional strategy to meet the perceived ability of the trainee or begin to believe the trainee does not have the ability to succeed. These concepts might play a significant role during field qualification training for ATC wherein cultural beliefs about the importance of ability and "the right stuff" are paramount (Owen, 2009).

Organizational Culture and Training Strategies in ATC

In an effort to better understand how organizational culture plays a role within field qualification training for ATC developmentals, Owen (2009) conducted a series of interviews with various personnel from Australian ATC field facilities. Across the various facilities, several dimensions of organizational culture remained consistent: the belief of "having the right stuff," the need to demonstrate ability, and having a confident and potentially "macho," personality type in order to succeed. These dimensions of culture were found to have a direct impact on the training strategies employed by instructors. For instance, many instructors across facilities held the belief in which a developmental either had "the right stuff" or did not, and this was determined by the level of performance and confidence displayed by the developmental from the beginning of training. In an interview with one instructor, Owen recorded her participant as stating, "I'm a great believer that flow controllers are born. You don't make em, they're born." Eschewing level of effort, and without detailing specific training deficiencies, instructors were confident in prescribing

attributions for success and failure based on preliminary interactions with trainees—knowing when they "just didn't have it." Woolfolk (1994) describes this perspective as an "entity" view of ability; you have it or you do not. Trainers with an entity view see ability as an internal and immutable characteristic of the individual. Alternatively, trainers with an "incremental" view consider ability to be an unstable characteristic of the individual and hence modifiable. In this view, the development of expertise is not solely due to innate factors but rather is influenced by motivation and practice (Chi, Glaser, & Farr, 1988).

The attribution of ability as a stable or unstable individual characteristic may influence the strategies an instructor uses in training. Owen (2009) identified three types of ATC training strategies: (1) "acting on," in which the instructor's goal is to either build confidence (passive) or directly tell the developmental what to do (active); (2) "working with," in which the instructor believes that effort and proper facilitation of learning will increase a developmental's ability; and (3) "working against," wherein an instructor determines a developmental does not have what it takes and begins to directly work against them as "gatekeeper" to success.

Therefore, if a trainer has an entity view of ability, such that ability is an internal and stable characteristic, he or she may be more likely to act as a "gatekeeper" in the event a developmental does not confidently display ability early in the training process. On the other hand, a trainer with an incremental view of ability, where ability is internal but unstable, will believe a developmental's performance may be improved with time and effort and will be more likely to utilize a "working with" type of training strategy. Furthermore, Owen (2009) found that trainers upholding an incremental view of ability were more likely to utilize instructional strategies prescribed in literature and the on-the-job training instructor (OJTI) program; whereas, those with an entity view of ability were more likely to avoid traditional training styles under the belief that ability is unalterable. Thus, in the event trainer attributions for developmental behaviors such as these are influencing training procedures within FAA field facilities, it is imperative to understand how these attributions affect developmental outcomes, which leads to this research.

Understanding Failures Pilot Study

In a pilot study, Pierce and Byrne (2015) sought to uncover factors other than ability that might be keeping a developmental controller from successfully certifying during field qualification training after having successfully completed training at the FAA Academy. Their approach was to elicit the perspectives of developmentals who had failed training at their first facility and were in the process of transferring to a lower-level facility. Responses from participating developmentals indicated that many trainees perceived their facility cultures as being more disinterested and unfriendly rather than supportive. Additionally, a proportion of developmentals expressed discontent regarding the behavior of their training teams. Based on these results, Pierce and Byrne saw a need for a more comprehensive investigation into the field training process to better understand what goes well, what does not go so well, and what could be done to improve the field training process. This research seeks to extend their pilot study by collecting the perspectives of all developmentals receiving field qualification training, including the perspectives of

developmentals who successfully certified as a CPC at their first facility, those who transferred to a lower-level facility after failing training at their first facility, and those who were terminated from employment.

METHODS

Participants

Participants were volunteers recruited from among all developmental controllers as they completed, were removed from, or transferred during field qualification training between January 2016 and January 2017. When recruited, the developmental controllers had just completed training successfully, achieving CPC status, or had failed field qualification training and were being either transferred to a lower-level facility for training or terminated from the FAA, thus, making three groups: one group of successful developmentals (Successful), and two groups of unsuccessful developmentals (Transfer Lower and Terminated). The questionnaires were administered on-line. Participants accessed the questionnaire appropriate to their training outcome. Overall, 192 participants volunteered to take the survey. There were 124 participants in the Successful group, 59 participants in the Transfer Lower group, and 9 participants in the Terminated group.

We requested that participants voluntarily report demographic information, including age, sex, and race or national origin (RNO). The average age and standard deviation (*SD*) of the Unsuccessful-Transfer Lower group upon completion of training was 29.81 (*SD*=3.66); the average age of the Successful group was 31.90 (*SD*=6.10). Based on self-identification, there were 44 males and 8 females in the Unsuccessful-Transfer Lower group and there were 77 males and 14 females in the Successful group. A proportion of each group did not self-report gender. Of the Unsuccessful-Transfer Lower group, 50 (84.7%) reported RNO: 1 American Indian or Alaskan Native, 1 Asian or Pacific Islander, 5 Black or African American, 3 Hispanic, and 40 White. Of the Successful group, 101 (52.6%) reported RNO: 3 American Indian or Alaskan Native, 3 Asian or Pacific Islander, 10 Black or African American, 11 Hispanic, and 74 White. A portion of each group did not report RNO. No participants from the Terminated group reported demographic information.

Materials

We developed three slightly different versions of the Developmental Controller Questionnaire (DCQ), each corresponding to a training outcome: DCQ-Successful, DCQ-Transfer Lower, DCQ-Terminated. The three questionnaires are included in Appendix A. There were 58 items divided into 8 sections on the DCQ-Transfer and DCQ-Terminated surveys, while the DCQ-Successful survey had 48 items divided into seven sections. The seven sections reproduced in each questionnaire were labeled Entry, Training, Performance, Feedback, Culture, Next Phase, and Demographics (optional). The questionnaires for the Unsuccessful-Transfer Lower and Unsuccessful-Terminated groups had an additional section with questions pertaining to their specific training outcome (e.g., Transfer Lower or Terminated).

Typical item formats were “Mark all that apply” and Likert-type responses (i.e., Definitely Not to Definitely Yes). We provided space for open-ended responses following items with an “other” or “additional comment” option. For instance, an item in the Training section on all survey versions was “To what extent did each of the following prepare you to control traffic?” Participants were asked to respond using a 1-7 scale (Not at all to Very great extent) to the following factors: classroom training, laboratory training, computer-based instruction (CBI) training, on-the-job training (OJT), and training team (Air Traffic Manager (ATM), Front Line Manager (FLM), Training Manager (TM), Instructors), after which, participants were given the opportunity to provide additional comments on their responses. Another type of question was open-ended. An example from the Feedback section of the questionnaire was “Based on experience, what do you think it takes to succeed as a controller?” Questions specific to the Unsuccessful groups (Transfer Lower and Terminated) addressed the participants’ perceptions about the transfer or termination process. For example, we asked the Unsuccessful groups if they wanted to leave training and if they believed they had been treated fairly during the transfer or termination process. Both questions were answered on a 1–7 scale (Definitely Not to Definitely Yes).

Procedures

In November 2015, surveys were coordinated with the National Air Traffic Controllers Association (NATCA) in accordance with NATCA Article 50 of the FAA-NATCA Collective Bargaining Agreement (CBA). In January 2016, the surveys were administered electronically through Qualtrics, after having been entered and tested by a contractor working for the FAA, Cherokee CRC, LLC. Next, the research sponsor from the Air Traffic Organization (ATO) Management Services Group (AJG) sent the DCQ Survey Information Packet (see Appendix B) to facility training managers. The DCQ Information Packet informed readers about the purpose of the DCQ, how the feedback received would be used, approximate completion time, how data would be stored, and the sponsors of the research. The facility training managers were asked to provide the DCQ Survey Information Packet to all developmentals upon completion of the facility training program.

In June 2016, FAA researchers evaluated survey participation and found only 58 participants across all three versions of the survey. Based on low participation, CAMI researchers requested permission to continue data collection through January 2017. Both the research sponsor (AJG) and NATCA approved continuation of data collection. In order to increase participation, CAMI researchers coordinated with the ATC Service Area Training Coordinators and Service Area Training Specialists in August 2016, sending both a memorandum and the DCQ Survey Information Packet requesting they ask facility training managers to encourage participation in the online DCQ Survey. Additionally, during October 2016, researchers participated in training teleconferences held monthly with facility training managers to provide an update on participation rates and requested the facility training managers to continue to provide the DCQ Survey Information Packets to developmentals as they completed training. Data collection ended on January 31, 2017.

After data collection ended, survey responses were imported from Qualtrics into a statistical package (SPSS) for analysis. The analysis portion of this study focused on frequency of responses provided by developmentals, differences in central tendency (e.g. mean, standard deviation), and comments provided by participants in each group. Comments were selected for inclusion in this report based on their uniqueness and applicability to the research questions: what went well during training, what did not go well, and what can be done to improve the process.

RESULTS

The following results are divided and presented by sections. Each section or subsection contains questions grouped by concept, not necessarily questions asked in the same section or in a similar sequence in the questionnaires. Each section of the results begins with a table identifying the questions to be analyzed and is followed by a description of the results. During analysis, it was noticed that a majority of surveys from the Terminated were over 50% unfinished. Therefore, these surveys were removed from the analysis at the researchers' discretion leaving two groups and 183 total surveys for analysis purposes (Successful = 124, Transfer Lower = 59).

Thus, questions identified in the table are labeled by a U for *Unsuccessful – Transfer Lower*, an S for *Successful*, or U-S for both followed by a number. Questions labeled U, for example U1, indicate a question on the DCQ-Transfer Lower. Questions labeled S, as in S2, indicate a question from the DCQ-Successful. Questions labeled U-S, such as U-S3, indicate items represented on both groups' questionnaires.

For items containing an open response option, comments are organized into the following categories: *Training Teams*, *Training Procedures*, *Facility Culture*, *Individual Well-Being*, and *Individual Ability*. Only a small portion of comments per item are represented in the text. Comment selection was made at the discretion of the researchers. Original comment selection was based on relevance and the notion that the comment was not merely a repetition of a response option already provided in the original question. Additional factors contributing to comment selection were length and substance of the comment, as well as consistency with which other developmentals mentioned similar themes. Comments with aggressive or inappropriate language were excluded. Comment selection had to be approved by both researchers. Several comments were deleted during this process. Additionally, some comments presented within the identified themes will repeat ideas and situations already mentioned in previous comments. We include these comments for justification and support for later recommendations.

Entry

The first section of the DCQ referenced topics regarding the types of facility developmentals trained in, their time spent in training, as well as their original training preferences and understandings. Relevant questions taken from the Entry section of the DCQ are presented in Table 2.

Table 2. Questions for Entry Section.

Question	Question Type
(U1) Which type of facility were you transferred from? En route, Small tower (Level 4-6), Medium tower (Level 7-9), Large tower (Level 10-12), Combined tower/TRACON, TRACON only, CERAP	Multiple Choice
(S1) In which type of facility were you successful? See U1 for response options	Multiple Choice
(U-S2) How long were you in training at your facility before being transferred/before becoming a CPC? Less than 6 months, 6-12 months, 13-18 months, 19-24 months, 2-3 years, More than 3 years (Transfer Lower), 4 or more years (Successful)	Multiple Choice
(U3) Which type of facility are you being transferred to? Small tower (Level 4-6), Medium tower (Level 7-9), Large tower (Level 10-12), Combined tower/TRACON, TRACON only, Don't know	Multiple Choice
(S3) Was this your first facility?	Yes/No
(U-S4) Which type of controller did you want to be when you originally applied for a job as an FAA controller? En route, Tower, Either	Multiple Choice
(U-S5) Was your first assigned facility in one of the states and/or the service area you indicated as a preference on your application?	Yes/No
(U-S6) During the selection process, did you have a good understanding of what your job would be like as a controller? 1 Definitely Not - 4 Somewhat - 7 Definitely Yes	Likert Scale (1-7)

The Transfer Lower group reported transferring from the following facility types: 62.7% En route, 1.7% Small tower, 6.8% Medium tower, 1.7% Large tower, and 27.1% Terminal Radar Approach Control (TRACON) only. These results were expected in that most transfers to lower level facilities are from en route centers and high-level TRACONs. The Successful group reported completing training at the following facility types: 32.3% En route, 9.7% Small tower, 10.5% Medium tower, 7.3% Large tower, 24.2% TRACON only, and 6.4% were unreported. Although a higher percentage of the respondents in the Successful group were from higher-level facilities, we did have representation from the small and medium-level towers.

Next, we asked developmentals how much time they spent in training before either transferring or successfully certifying (U-S2). Responses ranged from less than six months to more than three years. For the Transfer Lower group, the largest proportion (28.8%) of developmentals spent 19-24 months. For the Successful group, the largest proportion (26.6%) of developmentals spent 6-12 months in training before certifying at their facility. Proportions for the approximate time spent in training for both groups may be seen in Figure 1.

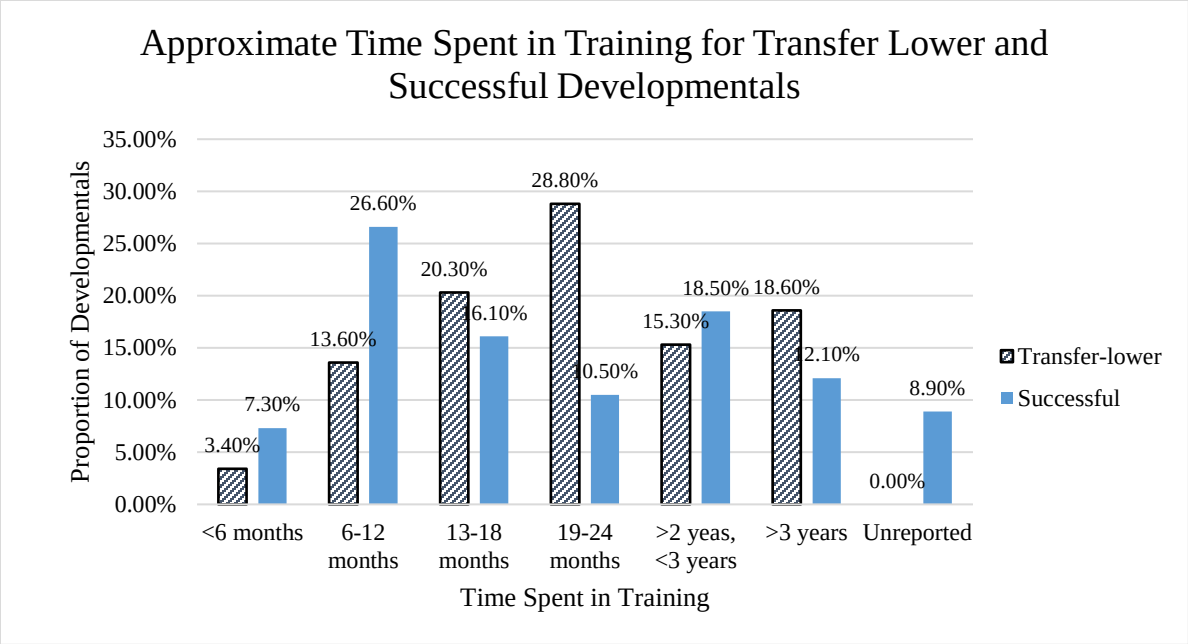

Figure 1. Group Proportions for the Approximate Time Spent in Training for Transfer Lower and Successful Developmentals.

Next, the Transfer Lower group was asked, "Which type of facility are you transferring to?" (U3) while the Successful group was asked, "Was this your first facility?" (S3). Frequencies and proportions for item U3 are presented in Table 3. For Successful participants answering S3, 56.5% indicated they were certifying at their first facility, and 29.8% indicated having trained at prior facilities. The remaining proportion of developmentals did not answer the question.

Table 3. Frequencies and Proportions for Transfer Lower Next Facility Types (U3)

Facility Type	Transfer Lower	
	N	%
Small tower (Level 4-6)	**32**	**54.2%**
Medium tower (7-9)	**14**	**23.7%**
Large tower (Level 10-12)	**2**	**3.4%**
Combined tower/TRACON	**10**	**16.9%**
Don't know	**1**	**1.7%**

The next set of questions was asked to both the Transfer Lower and Successful groups (U-S 4-6). When indicating the type of controller they originally aspired to be (i.e., during the application process), the largest proportion of developmentals from both groups responded Tower, while smaller proportions of developments chose Either and En Route, respectively (Figure 2). However, a proportion of the developmentals from the Successful group did not report for this item; therefore, the percentages in the figure will not equal to 100. Additionally, a high proportion of participants from both groups (Transfer Lower = 67.8%, Successful = 68.5%) indicated that their facility was in one of the states and/or the service area for which they had indicated a preference on their application

(U-S5). Finally, for item U-S6, participants from both groups indicated they had a good understanding of what their job would be like as a controller (Transfer Lower = 4.76, *SD* = 1.59; Successful group = 5.30, *SD* = 1.92), with mean ratings above the midline, but with the mean rating of the Successful group slightly higher than the mean rating of the Transfer Lower group.

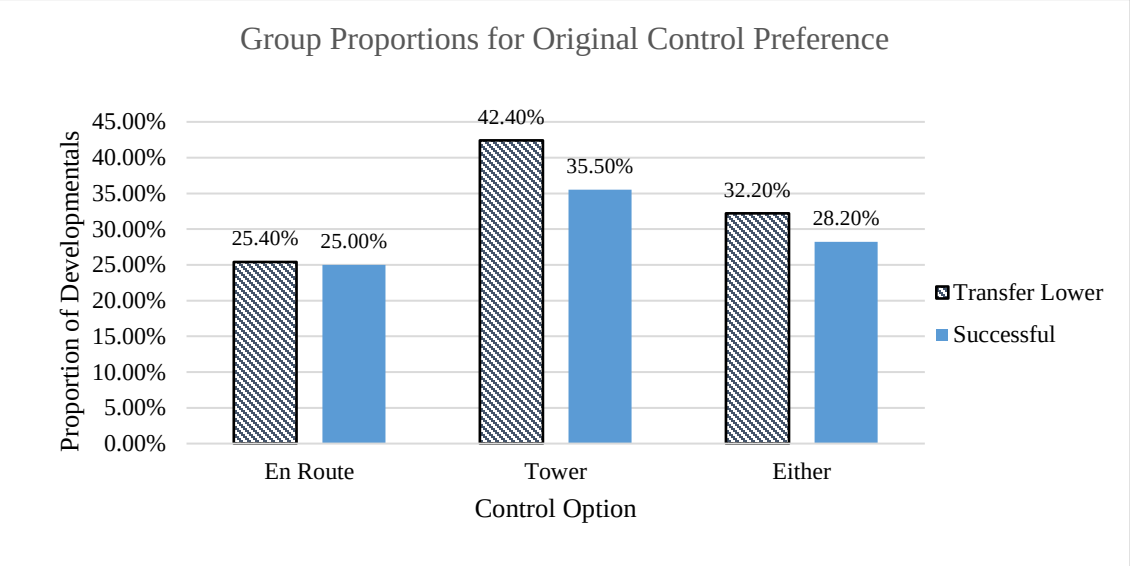

Figure 2. Group Proportions for Original Control Preference

Perceptions of the Training and Transfer Process

The next items of the DCQ (Transfer Lower and Successful) referenced factors that may have influenced developmentals' experiences in field qualification training, perceptions of training procedures and materials, and Transfer Lower developmentals' experiences with the transfer process. Relevant items from the Training and Transfer section are presented in tables at the beginning of each subsection. Items are grouped by similarity. A final section references questions only asked of the Transfer Lower group.

Work-related, external, and health factors

Items related to work, external, and health factors are listed in Table 4.

Table 4. Items from Training and Transfer – Section 1.

Question	Question Type
(U7) Were there work-related reasons for requesting transfer? Could not do the work, Did not like the work, Did not like the work hours/ schedule/shiftwork, Did not like my co-workers, Did not like my trainer(s)/instructor(s), Did not like my managers, Did not like the facility, Other (please list below), None	Mark All That Apply
(S7) What work-related factors did you find most difficult to handle during training? The work itself, The work hours/schedule/shiftwork, My co-workers, My trainer(s)/instructor(s), My managers, The facility, Other (please list below)	Mark All That Apply
(U8) Were there external circumstances that drove your request for transfer? Family, Childcare, Spouse, Cost of living, Housing schools, Location (city/state), Commute, Other (please list below), None	Mark All That Apply
(S8) What external factors did you find most difficult to handle during training? See U8 for response options	Mark All That Apply
(U-S9) During training, did you experience any changes to your overall health/well-being? 1 Much worse – 4 No change – 7 Much better Do you have any additional comments on your response?	Likert Scale 1-7
(U-S10) During training, did you experience any changes to your overall feelings of stress? 1 Much greater – 4 No change – 7 Much less Do you have any additional comments on your response?	Likert Scale 1-7

***Work-related factors*.** For item U7, a majority of the Transfer Lower group chose the category "Other" to explain the work-related reasons that influenced their request for transfer. However, many of the additional comments provided under "Other" related to and expounded on previously chosen response options. For instance, one Transfer Lower developmental choosing item responses of "Did not like my managers" and "Did not like my facility," also commented "Differences in expectations between trainers and manager." Additionally, the largest proportion of developmentals chose "None," indicating that some developmentals believed there were no work-related factors that affected their request for transfer. Therefore, excluding the "Other" category and the absence of difficulties, the most commonly selected factor for both groups on items U7 and S7 was "My trainer(s)/instructor(s)," despite the difference in questions. For the Transfer Lower group, this was followed by "Did not like the facility," and for the Successful group was followed by "My coworkers." The response items and percentage of each group selecting the item are shown for the Transfer Lower group in Table 5 and for the Successful group in Table 6. Because respondents selected all applicable items, percentages will not sum to 100, as will be the case for all items of this type.

Table 5. Work-Related Reasons for Requesting Transfer (Transfer Lower) (U7).*

Work-Related Reasons for Requesting Transfer (Transfer Lower)	*N*	%
Could not do the work	**9**	**15.3%**
Did not like the work	**6**	**10.2%**
Did not like the work hours/schedules/shiftwork	**0**	**0.0%**
Did not like my co-workers	**7**	**11.9%**
Did not like my trainer(s)/instructors	**12**	**20.3%**
Did not like my managers	**9**	**15.3%**
Did not like facility	**11**	**18.6%**
Other	**23**	**39.0%**
None	**18**	**30.5%**

* Because respondents selected all applicable items, percentages will not sum to 100.

Table 6. Work-Related Factors Perceived as Most Difficult During Training (Successful) (S7).*

Work Related Factors Most Difficult During Training (Successful)	*N*	%
The work itself	**30**	**24.2%**
The work hours/schedule/shiftwork	**29**	**23.4%**
My co-workers	**38**	**30.6%**
My trainers(s)/instructor(s)	**41**	**33.1%**
My managers	**27**	**21.8%**
The facility	**9**	**7.3%**
Other	**9**	**7.3%**
None	**16**	**12.9%**

* Because respondents selected all applicable items, percentages will not sum to 100.

Each group provided a series of additional comments when selecting “Other” regarding the work-related factors that influenced their request for transfer or those considered difficult to handle during training. A sample of comments from both groups, selected for their relevance to the topic, follows.

Were there work-related reasons for requesting transfer?

Transfer Lower

Facility Culture

- *There were numerous outside issues that related to me being reassigned. From hostile coworkers, and managers and support staff that did not have the developmentals best interests at heart.*
- *Negative atmosphere towards developmentals. Expectation for all trainees to fail.*
- *Facility culture and attitude towards my training and training in general.*
- *Personality conflicts and hostile work environment.*

Individual Ability

- *I was unsuccessful in my training at my last facility. Could have been successful given more time. No one at the facility saw it necessary to give me more time.*
- *It was hard for me to complete radar training in the TRACON. Being off the street, it took me longer to understand the principles in radar.*
- *Didn't have enough experience to be at a level 12 TRACON.*

Individual Well-Being

- *Did not like the area I was placed.*
- *Location of facility: no other choice but to go there.*

What work-related factors did you find most difficult to handle during training**?**

Successful

Training Procedures

- *Lack of specific documented training benchmarks/expectations (i.e. equivalent to flight training Practical Test Standards).*
- *Training was often stopped due to staffing issues. About half of the facility was in some point of training with few trainers. It was difficult to get valuable training time and it was often not continuous with having several days without training.*

Facility Culture

- *Hired "off the street" stigma.*

***External factors*.** For item U8, "Were there external circumstances that drove your request for transfer?" a majority of the Transfer Lower group chose "None" (47.5%). The next most frequently selected items for the Transfer Lower group was "Family" (30.5%). For item S8, the Successful group equivalent, the most frequently selected item was "Cost of living" (33.9%), followed by "Family" (26.6%). All group proportions are presented in Figure 3. Since participants were instructed to "Mark all that apply," percentages will not total to 100.

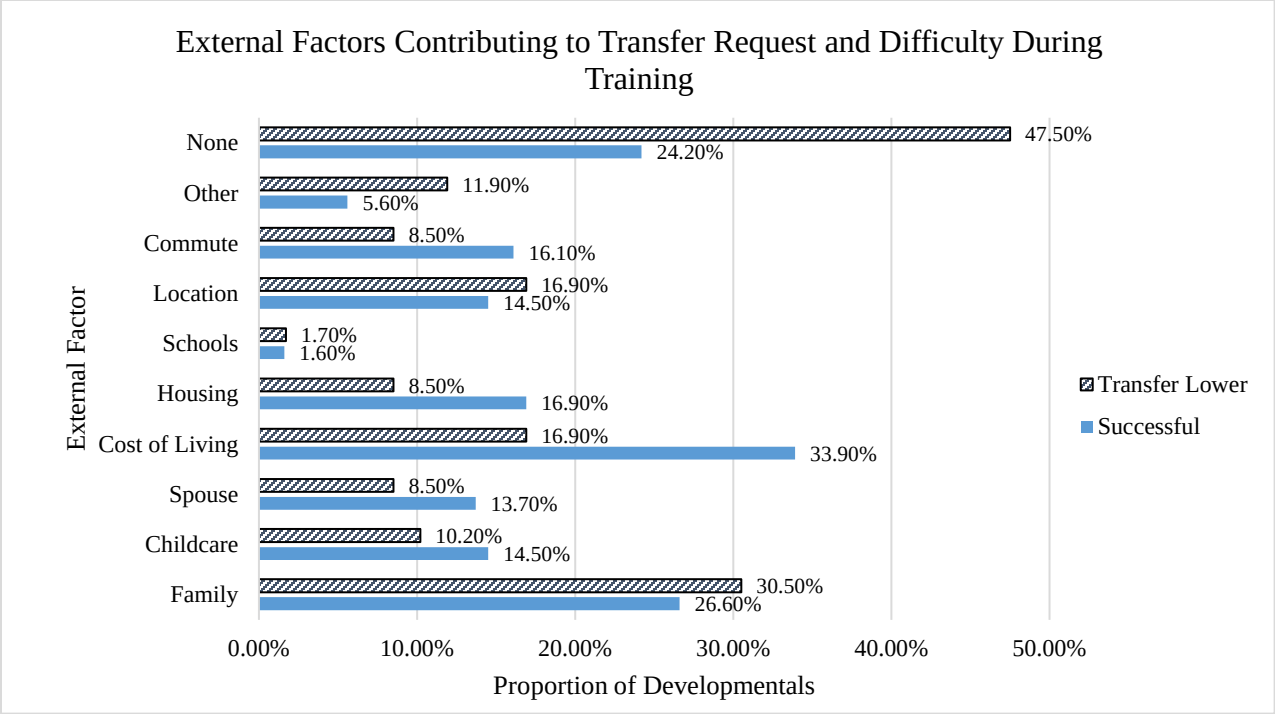

Figure 3. Response Proportions for items U8 and S8.

Additional comments provided when selecting "Other" as a response are listed below. For both groups, the comments focused on issues related to Individual Well-Being.

Were there external circumstances that drove your request for transfer?

Transfer Lower

Individual Well-Being

- *No familial support or presence, couldn't afford daycare, spouse alone with two babies, and a ridiculous commute from anywhere affordable.*

What external factors did you find most difficult to handle during training?

Successful

Individual Well-Being

- *Due to the rotating shift schedule, most of my family members could not understand that I would not be available for routine events (on a Saturday/Sunday for example).*
- *My wife has a good job rooted in another city so I essentially commute every week on my RDO's, and when I asked at facility selection time if there was any way possible to get to a facility closer to home, I was denied, only to find out that the class immediately behind mine had a facility in my home city. This has caused unimaginable strain on me and my family.*
- *Separated from my husband due to his FAA assignment in Alaska, trying to juggle 2 households on developmental income low pay, etc.*

Health factors. On items U-S9 and U-S10, participants in both groups were asked to provide a 1-7 rating (Much Worse to Much Better) for items related to their overall health and levels of stress. Participants from both groups provided mean responses below the midline on each item, with the Successful group providing slightly higher ratings overall. Mean ratings are presented in Table 7.

Table 7. Mean Responses for Health Factors.

Question	Transfer Lower *M* (*SD*)	Successful *M* (*SD*)
(U-S9) During training, did you experience any changes in your overall health and wellbeing?	**2.95 (1.08)**	**3.60 (1.01)**
(U-S10) During training, did you experience any changes to your overall feeling of stress?	**2.23 (1.18)**	**2.77 (1.35)**

Each item provided an opportunity for developmentals to provide additional comments. These comments supported developmental ratings that indicated participants from both groups were experiencing stress. Comments from both items (U-S 9-10) were combined due to similarity and are presented below by training outcome group.

During training, did you experience any changes in your overall health and wellbeing/overall feeling of stress?

Transfer Lower

Training Teams

- *Loss of sleep because of horrible FLM and OJTI practices. Terrible working environment.*

Individual Well-Being

- *Training is extremely draining and knowing that a large percentage of developmentals wash out is stressful.*
- *It was very stressful having to be perfect, but watching other people not do the same thing.*
- *Yes, had sleep issues, lost weight. Had tough time at home with my spouse. Started to genuinely lose love for a career that I've been in since 2008. Spoke with a counselor about stress-coping skills.*
- *During training, I had a lot of external factors going on that I communicated to my instructors and supervisor. It was so stressful I had to call Employee Assistance Program (EAP) to deal with it. No actions or support was taken by my supervisor or instructors.*
- *The facility was a health hazard. Left work every day unable to breathe through my nose.*

During training, did you experience any changes in your overall health and wellbeing/overall feelings of stress?

Successful

Facility Culture

- *Being a trainee can be very stressful, this job has a "wash em out" culture that looms over the head of every trainee.*

Individual Well-Being

- *The training process was a particularly stressful time for me, and I questioned my abilities and life path constantly.*
- *The training and frustration related to it are much more stressful then working the actual traffic itself once certified.*
- *During a bad day of training, I would sometimes find myself thinking about work a lot at home trying to decompress all of the information. This definitely added to stress in my home life.*
- *I was stressed. I definitely had a related health issue that I had to go to the doctors for and try to work through.*
- *Slightly elevated blood pressure, gained 5-10 pounds.*
- *My body had to get used to the constant rotating shifts which prepared me for being a CPC but it left me tired after trying to study and correct mistakes from the day's training. It would have been easier to have a consistent set schedule so I would have been well-rested to receive quality training the next day.*

Training preparation and satisfaction

Items related to training preparation and satisfaction are listed in Table 8.

Table 8. Items from Training and Transfer Sections – Section 2.

Question	Question Type
(U-S11) To what extent did each of the following prepare you to control traffic? Classroom training, Laboratory training, CBI training, On-the-job training (OJT), Training teams (ATM, FLM, Training Manager, Instructors) 1 Not at all – 4 Somewhat – 7 Very great extent	Likert Scale 1-7
(U-S12) How satisfied were you with each of the following? See U-S11 for response options	Likert Scale 1-7
(U-S13) Overall, what was the best part of the classroom, laboratory, and CBI training at your facility? Organizational/facility culture, Opportunity to practice/learn new skills, Classroom/laboratory instructors, Scenario/problem design/realism/accuracy, Completeness/quality of training, Consistency/subjectivity of instructors, Managerial/training policies, Slow training pace, Fast training pace, Other (please list below)	Mark All That Apply
(U-S14) Overall, what was the worst part of classroom, laboratory, and CBI training at your facility? See U-S13 for response options	Mark All That Apply
(U-S15) Overall, what was the best part of OJT at your facility? Organizational/facility culture, Opportunity to practice/learn new skills, OJT instructors/supervisor/CPCs, Completeness/quality of training, Consistency/subjectivity of instructors managerial/training policies, Slow training pace, Fast training pace, Working live traffic, Other (please list below)	Mark All That Apply
(U-S16) Overall, what was the worst part of OJT at your facility? See U-S15 for response options	Mark All That Apply

Training preparation. On items U-S11, "To what extent did each of the following prepare you to control traffic," participants were asked to provide a 1-7 rating (Not at All to Very Great Extent) for the following items: Classroom training, Laboratory training, CBI training, OJT, and Training teams (ATM, FLM, TM, Instructors). The mean ratings for each response item are presented in Table 9. All items were rated near or above the midline, except for CBI training. CBI training received the lowest rating from both the Transfer Lower and Successful groups. Both groups rated OJT as most useful.

Table 9. Mean Ratings for Training Preparation Items (U-S11).

Item	Transfer Lower *M* (*SD*)	Successful *M* (*SD*)
Classroom training	**3.61 (1.55)**	**3.73 (1.83)**
Laboratory training	**4.79 (1.55)**	**4.11 (1.70)**
CBI training	**2.36 (1.62)**	**2.40 (1.45)**
OJT training	**5.57 (1.44)**	**6.57 (0.98)**
Training teams	**3.76 (1.82)**	**5.58 (1.65)**

Additional comments highlighting the ratings are listed below:

To what extent did each of the following prepare you to control traffic?
Transfer Lower

Training Teams

- *Training teams should be more about teaching than just a set of eyes behind you. Obviously, each trainer is more or less involved, but a large focus on helping trainees identify and correct for mistakes should exist.*

Training Procedures

- *Lab problems bear no resemblance to real life traffic, and it's a disservice to the trainees to suggest that this is somehow supposed to prepare you for live traffic. About 20% of what we see on the radar scopes is covered in the lab problem.*
- *The training program needs to be more standardized. At my facility, there were no set standards.*
- *I worked with three primary instructors that all did it "their way." There should be more uniform procedures.*
- *Training needs to focus on weakness and building success on repetitions before moving to the next level.*

To what extent did each of the following prepare you to control traffic?
Successful

Training Teams

- *When I made a mistake during training, my training team (instructors and FLM) most of the time explained what got me into the trouble in the first place. Then they would give me tips to prevent the problem from reoccurring in the future. This helped me multiple times.*
- *Controllers are not trained to teach. An excellent controller may also lack the required skill set to train. I believe OJTIs should be required to have more training on how to effectively instruct their developmentals.*
- *There is a vast difference in ability between most trainers and others. The number of CPCs that should actually be training is 10% of the number that actually conduct training. The others that do want to train need dramatic instruction/guidance of how to teach, train, communicate, and treat trainees.*

Training Procedures

- *The classroom training was extremely poor. My Ground Control certification test included Local Control questions that I was not told to study. The managers told me specifically that the tests needed to be rewritten and to just do the best I could.*
- *The classroom portion was disorganized and does not thoroughly teach regulations.*
- *Classroom training needed more oversight, it often times felt more like self-study versus classroom.*

Training satisfaction. Next, items U-S12 asked participants to provide a 1-7 rating (Very Dissatisfied to Very Satisfied) to identify their level of satisfaction for the same response items presented when rating training preparation (U-S11). For this item, CBI received the lowest rating for both groups, and the largest difference in mean ratings between groups were for response items "OJT training" (Transfer Lower: *M* = 4.3, *SD* = 1.68, Successful: *M* = 6.05, *SD* = 1.20) and "Training teams" (Transfer Lower: *M* = 3.24, *SD* = 1.80, Successful: *M* = 5.48, *SD* = 1.62). The Transfer Lower group indicated less satisfaction with "OJT training" and "Training teams" than did the Successful group. The mean ratings are presented in Table 10.

Table 10. Mean Ratings for Training Satisfaction Items (U-S12).

Item	Transfer Lower *M* (*SD*)	Successful *M* (*SD*)
Classroom training	**4.00 (1.68)**	**4.09 (1.78)**
Laboratory training	**4.48 (1.75)**	**4.20 (1.76)**
CBI training	**2.91 (1.82)**	**2.86 (1.59)**
OJT training	**4.30 (1.68)**	**6.05 (1.20)**
Training teams	**3.24 (1.80)**	**5.48 (1.62)**

Best part of classroom, laboratory, and CBI training. Items U-S13 prompted participants to select the best parts of their classroom, laboratory and CBI training amongst the following items: Organizational/facility culture, Opportunity to practice/learn new skills, Classroom/laboratory instructors, Scenario/problem design/realism/accuracy, Completeness/quality of training, Consistency/subjectivity of instructors, Managerial/training policies, Slow training pace, Fast training pace, Other (please list below).

The most frequently selected items for both groups were "Opportunity to practice learn new skills" (Transfer Lower: 39.0%, Successful: 34.7%) and "Classroom/laboratory instructors" (Transfer Lower: 37.3%, Successful: 22.6%). Table 11 presents the group frequencies and proportions selecting each item.

Table 11. Response Frequencies and Proportions for the Best Part of Classroom, Laboratory, and CBI training (U-S13).*

Item	Transfer Lower		Successful	
	N	%	*N*	%
Organizational/facility culture	**8**	**13.6%**	**19**	**15.3%**
Opportunity to practice/learn new skills	**23**	**39.0%**	**43**	**34.7%**
Classroom/laboratory instructors	**22**	**37.3%**	**28**	**22.6%**
Scenario/problem design/realism/accuracy	**15**	**25.4%**	**24**	**19.4%**
Completeness/quality of training	**5**	**8.5%**	**20**	**16.1%**
Consistency/subjectivity of instructors	**6**	**10.2%**	**23**	**18.5%**
Managerial/training policies	**4**	**6.8%**	**10**	**8.1%**
Slow training pace	**1**	**1.7%**	**8**	**6.5%**
Fast training pace	**5**	**8.5%**	**13**	**10.5%**
Other (See comments)	**10**	**16.9%**	**13**	**10.5%**

* Because respondents selected all applicable items, percentages will not sum to 100.

Participants were given the opportunity to provide additional comments when selecting the item response "Other." On this this item, comments from the Transfer Lower group were similar to previously selected response items and were excluded. Comments from the Successful group, which were not a restatement of the response items, are presented below.

Overall, what was the best part of the classroom, laboratory, and CBI training at your facility?

Successful

Training Procedures

- *Quality of feedback.*
- *I was allowed to progress through the tests at my own rate.*

Worst part of classroom, laboratory, and CBI training. Next, participants from both groups selected from the same items those areas they believed to be the worst part of their classroom, laboratory, and CBI training (U-S14). The most frequently selected item by the Transfer Lower participants were "Scenario/problem design/realism/accuracy" (45.8%), followed by "Consistency/subjectivity of instructors" (44.1%) and "Organizational/facility culture" (44.1%). For the Successful group, the most frequently selected items were "Scenario/problem design/realism/accuracy" (34.7%) and "Slow training pace" (27.1%). Frequencies and proportions from each group are presented in Table 12.

Table 12. Response Frequencies and Proportions for the Worst Part of Classroom, Laboratory, and CBI Training (U-S14).*

Item	Transfer Lower		Successful	
	N	%	*N*	%
Organizational/facility culture	**26**	**44.1%**	**29**	**23.4%**
Opportunity to practice/learn new skills	**9**	**15.3%**	**10**	**8.1%**
Classroom/laboratory instructors	**7**	**11.9%**	**18**	**14.5%**
Scenario/problem design/realism/accuracy	**27**	**45.8%**	**43**	**34.7%**
Completeness/quality of training	**15**	**25.4%**	**25**	**20.2%**
Consistency/subjectivity of instructors	**26**	**44.1%**	**30**	**24.2%**
Managerial/training policies	**17**	**28.8%**	**31**	**25.0%**
Slow training pace	**7**	**11.9%**	**46**	**37.1%**
Fast training pace	**8**	**13.6%**	**4**	**3.2%**
Other (See comments)	**15**	**25.4%**	**8**	**6.5%**

* Because respondents selected all applicable items, percentages will not sum to 100.

Additional comments provided with a selection of "Other" are presented below.

Overall, what was the worst part of classroom, laboratory, and CBI training at your facility?
Transfer Lower

Training Procedures

- *CBI is not helpful to the training process.*
- *CBI training is tedious, which causes a loss of interest and makes the trainee just do anything to make it end as soon as possible. Same situation with classroom. Lab problems are often designed and taught by people who were not very good at controlling traffic and may have not seen live traffic in years.*
- *Classroom and CBI offer nothing but book knowledge. Training on live traffic or a good lab is much better suited to the mentality for this job.*
- *Simulated problems were good, but they used too many rules that did not apply to the real world.*
- *Lab scenarios were not at all like live traffic.*
- *The training needed to be much less subjective.*
- *Very unorganized, the instructors didn't even know what was going on.*

Facility Culture

- *Too technique-based. Too much yelling, intimidation, and ridicule.*

Overall, what was the worst part of classroom, laboratory, and CBI training at your facility?

Successful

Training Procedures

- *It's called "death by PowerPoint" for a reason.*
- *Outdated training materials.*
- *Having additional personnel to operate simulators would have made the process faster.*
- *Simulators were not available at my time of training.*
- *Very slow pace.*
- *Even in the classroom and lab training, our facility is short staffed. Our support specialist did work his tail off trying to get us through the information but he didn't have enough time in his day to do his other tasks as well as train us. A majority of the time was spent via self-study or in collaboration with other developmentals trying to weed through the information…There are not enough bodies to achieve the goals that have been set forward and in the end has diminished training and will effect safety.*

Best part of OJT. Participants followed the same instructions from the previous two items in order to indicate the best parts of OJT at their facility (U-S15). The two most frequently selected items by both the Transfer Lower and Successful groups were "Working live traffic" (Transfer Lower: 62.7%, Successful: 67.7%) and "Opportunity to practice/learn new skills" (Transfer Lower: 28.8%, Successful: 47.6%). Proportions for all items are presented in Table 13.

Table 13. Response Frequencies and Proportions for Best Part of OJT (U-S15).*

Item	Transfer Lower		Successful	
	N	%	*N*	%
Organizational/facility culture	**6**	**10.2%**	**26**	**21.0%**
Opportunity to practice/learn new skills	**17**	**28.8%**	**59**	**47.6%**
OJT Instructors/Supervisor/CPC	**12**	**20.3%**	**58**	**46.8%**
Completeness/quality of training	**4**	**6.8%**	**35**	**28.2%**
Consistency/subjectivity of instructors	**4**	**6.8%**	**25**	**20.2%**
Managerial/training policies	**1**	**1.7%**	**16**	**12.9%**
Slow training pace	**1**	**1.7%**	**4**	**3.2%**
Fast training pace	**5**	**8.5%**	**24**	**19.4%**
Working live traffic	**37**	**62.7%**	**84**	**67.7%**
Other	**6**	**10.2%**	**3**	**2.4%**

*Because respondents selected all applicable items, percentages will not sum to 100.

Additional comments from participants selecting "Other" are presented below.

Overall, what was the best part of OJT at your facility?
Transfer Lower

Training Teams

- *Loved the OJTIs, but my training team was extremely inexperienced.*

Training Procedures

- *OJT is by far the best part of training. The pace and situations are, of course, realistic. The working conditions are better and you get to meet the people you will be working with.*
- *OJT is where everything is learned. Simulation is good but too many rules were applied that did not matter. More real OJT is how to progress.*

Overall, what was the best part of OJT at your facility?
Successful

Training Teams

- *The few people that actually know how to teach it.*

Worst part OJT. Next, participants selected the worst part of OJT training at their facility (U-S16). In the Transfer Lower group, participants most frequently selected "Consistency/subjectivity of instructors" (54.2%) and "Organizational/facility culture" (49.2%). In the Successful group, a higher proportion of developmentals selected "Organizational/facility culture" (25.0%), as well as "Slow training pace" (24.2%) and "Managerial/training policies" (23.4%). Proportions are presented in Table 14.

Table 14. Response Frequencies and Proportions for Worst Part of OJT (U-S16). *

Item	Transfer Lower		Successful	
	N	%	*N*	%
Organizational/facility culture	**29**	**49.2%**	**31**	**25.0%**
Opportunity to practice/learn new skills	**6**	**10.2%**	**1**	**0.8%**
OJT Instructors/Supervisor/CPC	**32**	**54.2%**	**19**	**15.3%**
Completeness/quality of training	**18**	**30.5%**	**11**	**8.9%**
Consistency/subjectivity of instructors	**32**	**54.2%**	**26**	**21.0%**
Managerial/training policies	**20**	**33.9%**	**29**	**23.4%**
Slow training pace	**7**	**11.9%**	**30**	**24.2%**
Fast training pace	**7**	**11.9%**	**5**	**4.0%**
Working live traffic	**1**	**1.7%**	**0**	**0%**
Other	**10**	**16.9%**	**13**	**10.5%**

*Because respondents selected all applicable items, percentages will not sum to 100.

Comments provided with a selection of Other are presented below.

Overall, what was the worst part of OJT at your facility?
Transfer Lower

Training Teams

- *There was no benefit to having OJT with poor management and trainers who didn't know how to manage or instruct a trainee.*
- *Had multiple new OJTIs towards end of training with different ways of instructing which made it difficult.*
- *If they are paying attention, and actually start trying to train you, they only allow you to do it their way. They act like they are the only ones who can do their job and really only seem to want to qualify people they want.*
- *The instructors were not helpful to their trainees.*
- *A supervisor that didn't like it if you did not work traffic his way.*

Facility Culture

- *The facility looks at training failures as if they can't do the job, not that there may be a problem with the training program.*

Overall, what was the worst part of OJT at your facility?
Successful

Training Teams

- *Inconsistency in technique of OJTIs and the inability of some instructors to allow you to apply techniques that you have learned that are not their own.*

Training Procedures

- *Inconsistency. You could go days without training.*
- *Seasonal traffic flows provide either an overload of traffic or a lack of traffic.*
- *Meeting training time quotas when there was no traffic to satisfy management.*
- *Inequitable distribution of training to candidates coming at the same time.*

Facility Culture

- *To piggy back from Facility Culture: some of the older controllers made being a trainee difficult…many have since retired, but if you made a mistake (which happens) you were going to be chastised. Just part of life as a new guy, but it was uncomfortable at times.*
- *Negative attitude of co-workers. Negative comments made by coworkers. Complaining of coworkers.*
- *Coworkers – controllers' jokes, intimidation.*
- *FLM interference and wildly random preferential treatment between developmentals, almost at an "every third trainee gets it rough" pattern.*

Individual Well-Being

- *Being in my own head. Working myself up too much to the point of being anxious.*

OJT factors

The following items referenced additional factors that may have influenced developmentals' experiences regarding the OJT portion of field qualification training. Questions from this portions are presented in Table 15.

Table 15. Questions for OJT Factors (U-S 17-20).

Question	Question Type
(U-S17) Did you work with your OJTI in a simulation prior to controlling live traffic?	Yes/No
(U-S18) If Yes, did you find it helpful?	Yes/No
(U-S19) If not, would you have found it helpful to work with your OJTI in a simulation prior to controlling live traffic? 1 Not at all – 4 Somewhat – 7 Very Great Extent	Likert Scale 1-7
(U-S20) To what extent did the feedback you received during your training help you to improve your performance? 1 Not at all – 4 Somewhat – 7 Very Great Extent	Likert Scale 1-7

For item U-S17, a majority from each group responded that they had not worked with their OJTI in a simulation prior to controlling live traffic (Transfer Lower, 66.1%; Successful, 58.1%). Additionally, 27.1% of the Transfer Lower group and 24.2% of the Successful group responded that they had worked with their OJTI in simulation prior to controlling live traffic and the majority of those (75.0% of the Transfer Lower group and 86.7% of the Successful group) believed it was helpful.

Additionally, participants responding "No" on item U-S17 were asked to provide a 1-7 rating (Not at All to Very Great Extent) concerning how helpful they would have found working alongside their OJTI in a simulation, and both groups rated the usefulness of the feedback they received from their OJTI during training. Mean ratings by group are presented in Table 16.

Table 16. Mean Ratings by Group for U-S 19-20.

Question	Transfer Lower *M* (*SD*)	Successful *M* (*SD*)
(U-S19) If not, would you have found it helpful to work with your OJTI in a simulation prior to controlling live traffic?	**5.26 (1.25)**	**4.1 (2.0)**
(U-S20) To what extent did the feedback you received during your training help you to improve your performance?	**4.24 (1.25)**	**5.83 (1.36)**

Transfer experience. The next sets of items are specifically related to the Transfer Lower group of participants and the transfer process. Each item is presented in Table 17.

Table 17. Items from Training and Transfer Sections – Section 3 (Transfer Only).

Question	Question Type
(U21) Did you want to leave training? 1 Definitely Not – 4 Somewhat – 7 Definitely Yes	Likert Scale 1-7
(U22) What stage of training were you in when you left your facility? En Route: Flight data, Non-radar and Radar Associate, Radar, Completed all en route training Tower or TRACON: Flight data, Clearance delivery, Ground control, Local control, Non-radar, Radar, Completed all tower/TRACON training	Multiple Choice
(U23)Were you a CPC before you left your facility?	Yes/No
(U24) How many Nonradar/Radar Associate positions had you checked out on before leaving your facility?	Open Response
(U25) How many Radar positions had you checked out on before leaving your facility?	Open Response
(U26) Did you feel you were progressing well in training at your facility? 1 Definitely Not – 4 Somewhat – 7 Definitely Yes	Likert Scale 1-7
(U27) Did you go through the National Employee Services Team (Nest) Process? Yes, No, Don't know	Multiple Choice
(U28) During the transfer process (Training Review Board, NEST, etc.) were you treated fairly? 1 Definitely Not – 4 Somewhat – 7 Definitely Yes	Likert Scale 1-7
(U29) How would you change the process used to transfer developmental controllers (Training Review Board, NEST, etc.)?	Open Response

Next, developmentals were asked to indicate which stage of training they were in when they left their facilities. Of those who responded, a majority of developmentals from both types of facilities indicated being in the Radar portion of their training. Proportions of developmentals from both En Route and Tower facilities are presented in Table 18 and Table 19. A proportion of developmentals from both types of training did not report for this item.

Table 18. Frequencies and Proportions for En Route Training Stages (U22).

Training Stage	Transfer Lower	
	N	%
Flight data	**3**	**5.1%**
Non-Radar and Radar Associate Controller	**13**	**22.0%**
Radar	**18**	**30.5%**
Unreported	**25**	**42.5%**

Table 19. Frequencies and Proportions for Tower Training Stages (U22).

Training Stage	Transfer Lower	
	N	%
Flight data	**1**	**1.7%**
Ground control	**2**	**3.4%**
Radar	**15**	**25.4%**
Unreported	**41**	**69.5%**

Additionally, out of the Transfer Lower participants taking the survey, 8.5% had certified or previously certified as a CPC before leaving their facility (U23). The next items asked developmentals to indicate how many Non-Radar/Radar Associate (U24) and Radar (U25) positions they had checked out on before leaving their facility. On average, participants indicated a mean of 3.29 (*SD* = 2.50) Non-Radar/Radar Associate positions completed, and a mean of 0.72 (*SD* = 1.36) Radar positions.

Furthermore, participants in the Transfer Lower group indicated not wanting to leave training at the time of their transfer (U21), and believed they were progressing well in training at their facility (U26) as indicated by mean ratings (1-7 Scale, Definitely not to Definitely yes). Additionally, 79.97% of developmentals indicated going through the NEST process and believed they were treated somewhat fairly as indicated by response ratings. Mean ratings for these items are presented in Table 20.

Table 20. Mean Ratings for Transfer Items

Question	Transfer Lower *M* (*SD*)
(U21) Did you want to leave training?	**3.22 (2.31)**
(U26) Did you feel you were progressing well in training at your facility?	**5.25 (1.34)**
(U28) During the transfer process (Training Review Board, NEST, etc.) were you treated fairly?	**4.27 (2.06)**

Finally, developmentals in the Transfer Lower group were prompted to provide recommendations for changing the developmental transfer process (U29). The recommendations centered on facility selection, the NEST process, individualization of the process, and training review boards (TRBs). The comments were grouped accordingly, and a representative sample is presented below.

How would you change the process used to transfer developmental controllers (Training Review Board, NEST, etc.)?

Transfer Lower

Facility Selection

- *Seems like a fair process. Lots of facilities to choose from.*
- *Overall, I think the process worked fine. My only change would be allowing the developmental controllers more time to make a decision for figuring out what facility they would like to transfer to. In my opinion, 7 days is not enough. Maybe 2-3 weeks. This way it allows the controller to have the opportunity to visit the prospective facilities and get a feel for the surrounding area since he or she would be living there.*
- *Everyone does not receive the same list or amount of choices. That is not fair.*
- *Take employee preference into consideration.*
- *NEST: 1) Consider all experience, not only experience at the losing facility. 2) Try harder to get the employee closer to where they want to be to avoid a later transfer.*

NEST Process

- *More transparency with the NEST. Nobody at my facility knows anything about the process, including the ATM which left me in the dark for months. Controllers on the floor heard the NESTs decision before I did.*
- *The NEST needs to be streamlined into a more efficient process, made electronic and CPC-ITs should be exempt from the NEST with the option to return to the previous facility without HR nonsense.*
- *Speed the process up. My training was suspended about six months before my Oklahoma class began. It was just a lot of uncertainty and waiting.*

Individualization

- *Have a more case-by-case basis of deciding whether to give additional hours to a trainee.*
- *Give return rights to previous facility Why send someone who was successful at one facility to another new facility to just potentially wash out of there as well.*
- *It's catching up…but the federal employee is supposed to be balanced and that includes home life. Take more into consideration for those with family needing help.*

Training Review Board (TRB)

- *I think the training review boards would be best served if they went in with an attitude of "what can we do to get the controller skilled enough to certify?" If someone was assigned two sectors initially and can't get simulator practice for those sectors, the review board should consider would they certify if only one sector was being trained on.*
- *I would have liked to submit my own packet to the TRB for them to consider. My voice was not heard when I spoke up for myself at the TRB. Also/or being able to appeal the TRB to change their decision before it goes to the ATM.*
- *TRB should ask for more info other than current OJTI (ex: previous trainers, supervisors). NEST should try to place unsuccessfuls as close to their home, especially if they were at their original facility for a very long time – don't uproot families.*
- *I think having all outside people come in as opposed to a majority of the TRB being on your panel. Not sure if this is the way it is now, but it is how it was.*

Recommendations for improvement. The last question under this section asks participants to recommend improvements to the training and transfer process. Participants were prompted to provide a 1-7 rating (Definitely Not to Definitely Yes) rating for Item U-S30 (see Table 17). Developmentals in the Transfer Lower had a greater mean rating than developmentals from the Successful group; however, both groups' average scores were above the midpoint, indicating that they believed the training process needed to be improved (Table 21). Participants were given additional space to provide a recommendation based on their response. Comments from both groups of participants are presented below the table.

Table 21. Item from Training and Transfer – Section 6.

Question	Transfer Lower *M* (*SD*)	Successful *M* (*SD*)
(US-30) Do you believe that the training process needs to be improved?	**6.29 (0.99)**	**5.25 (1.77)**

Do you believe that the training process needs to be improved?
Transfer Lower

Training Teams

- *More consistency between training techniques from OJTI to OJTI.*
- *Let me keep instructor's I've been successful with. I had 10-12 instructors in a 4-month period. All feedback I received contradicted another instructor input.*
- *More consistency with OJTIs. I felt like I was tossed around to different trainers too often, and they all had different expectations.*
- *OJTI need to be retrained every so often to ensure knowledge of adult learning techniques and how to help someone to learn instead of just telling them what they did wrong.*

Training Procedures

- *Before going to work live traffic, it is important to get the student ready. I didn't feel prepared when I first worked traffic. My facility could have aided me much better prior to OJT.*
- *Lab work prior to live traffic with CPCs who currently work traffic.*
- *Pair trainees with OJTIs that match their learning/teaching skills. Offer more options for simulations and alternative teaching tools for trainees struggling with their performance. Facilities should make trainee success their #1 priority.*
- *Consider a trainee's personality when pairing them with an instructor. When a trainee asks for new trainers actually switch them.*
- *More streamlined process and a more detailed process for CPCs to become OJTIs not everyone is a good instructor.*
- *Strengthening the process and get CPCs from the area to visit trainees in classroom and review material. Make trainees feel like they're wanted and not a burden.*
- *Training should be more streamlined. Maps and information were incorrect, lots of time to instruct but no one helping before training starts. It is just hurry up to wait.*
- *More effective use of down time when traffic is slow.*

- *Skill enhancement training (SET) should be given more regularly. Supervisors should be changed after every review board. The standard to which developmentals are held to should be uniform.*
- *Remove pass/fail evaluations from lab environment/simulations. They eliminate trainees that could have the potential to become a CPC.*
- *Improve the TRB process, have ATMs take more part in working with FLMs on trainees that seem to be struggling.*

Facility Culture

- *Just be fair. It shouldn't do with personality but skill.*
- *Stop allowing people to intimidate trainees.*
- *Stop expecting people to fail. Take into account trainee's experience level.*
- *The training process was non-existent, different trainees were held to different standards. Trainees were favored for having more prior experience.*
- *Monitor the trainers better. There seems to be no accountability for the way they treat/train trainees. They do whatever they feel like and no one does anything about it.*
- *Instructors should not be allowed to continue acting as an OJTI if they cannot be professional. Trash-talk, feet on console, chit chat, back to scope.*
- *People have preconceptions as to what a trainee is and it is very damaging to modern professionals when those pre-misconceptions aren't met or challenged. It is not the military; you cannot harass or yell or disrespect an individual. Also, technique should not be held against trainees.*

Do you believe that the training process needs to be improved?

Successful

Training Teams

- *Consistent training teams, consistent training.*
- *Having a training team/department that could take a developmental through the classroom and simulation lab would be highly beneficial. That way it is guaranteed that each trainee has received the same quality of training and received the same knowledge.*
- *Finding a training team that matches the developmental early in the game and sticking to that team. Staffing issues can cause a developmental to be on a crew with trainers that don't click well and due to multiple trainees in the same area on other crews – you are stuck.*
- *Try to allocate different trainers with trainees early to find a good match for personality and learning techniques, etc.*

Training Procedures

- *I was very satisfied with the training program. My only complaint would be the classroom/lab time. It took me nearly three and a half months to complete the classroom. There were a number of days when all we did was self-study. It worked out for the best, but I would have liked to work live traffic sooner.*

- *We need better equipment. My facility is using antiquated equipment from the 60's that is unacceptable.*
- *Minimum training hours for a prior rated controller should be lower than that of a new trainee. I had two CTOs prior to joining the FAA and I was treated like a brand new trainee. It was a waste of time for the facility and for me.*
- *Stop delaying training. Call in overtime to accommodate training. Schedule more training days in each pay period. Stop getting so bogged down with more trainees that you can handle.*
- *I believe management needs to communicate better the goals that need to be achieved to certify. Specifically, at my facility certification has more to do with simply reaching 80% of my (or anyone else's) training hours, than any proficiency or lack thereof of demonstrated ability to actually certify. This has led more of my fellow developmentals to simply attempt to run up their hours. I believe that this method completely disregards the point of target hours, and the input of the OJTI team.*
- *Using guidelines and checklists to guide the OJT process. Our FLM set expectations for our training team by breaking down the check list/guidelines of the items he wanted us to focus on. This guided training provided for consistency in the team. At the end of the week and during training team meetings, we used the checklist to ensure that all items were covered and if we had any questions or needed additional emphasis we used the training checklist for skill enhancement.*
- *Identify areas of training that need improvement, and then seek the training team's input on how those areas might be strengthened/corrected.*
- *Spend less time in a classroom environment, and more time working with currently qualified CPCs in simulators/live traffic.*
- *The FAA needs to incorporate simulator training to supplement OJT during times of slow live traffic. Some facilities traffic is very seasonal and it is a disservice to developmentals to wait for seasonally advantageous live traffic when a simulator is available.*

Facility Culture

- *Standardization of OJT and use of questions of the day to keep people engaged and in the books. Trainee attitude, my peers did not appear to have the same commitment to training as some of us did.*
- *Each developmental needs to have an equal opportunity for working traffic. Eliminate favoritism or "pushing people through."*
- *Less focus on simulations, more focus on live traffic. More debrief time after live traffic.*
- *Need specific training outcomes agreed upon collaboratively so that trainers, trainees, and FLM can more objectively gauge training progress and what needs emphasis…*
- *Stop pre-judging people, and stop having favorites.*

Culture

Items taken from the Culture section of the DCQ reference developmentals' perceptions of organizational and facility culture, the level of support received from fellow CPCs and supervisory

personnel, and cultural factors that contributed to their success in training or request for transfer. Relevant items from the Culture section are presented in Table 22.

Table 22. Questions for Culture Section.

Question	Question Type
(U-S31) What was the predominant organizational culture at your facility? Friendly, Competitive, Supportive, Unsupportive/Apathetic, Hostile, Other (Please list below)	Mark All That Apply
(U-S32) Were other controllers at your facility supportive? 1 Definitely Not – 4 Somewhat – 7 Definitely Yes	1-7 Likert Scale
(U-S33) Was the culture/environment at your facility conducive for success? 1 Definitely Not – 4 Somewhat – 7 Definitely Yes	1-7 Likert Scale
(U34) To what extent did the following factors contribute to your transferring to a lower facility? Individual ability/performance, National training policies and procedures, Training instructors, Training methods, Organizational/facility culture, External factors (e.g. family, location, etc.) 1 Not at all – 4 Moderate Extent – 7 Very great extent	1-7 Likert Scale
(S34) To what extend did the following factors contribute to your success in training? See U34 for response options	1-7 Likert Scale
(U-S35) Did any local organizational policies or procedures at your facility make your job more difficult as a developmental controller? 1 Definitely Not – 4 Somewhat – 3 Definitely Yes	1-7 Likert Scale
(U-S36) Did any national organizational policies or procedures at your facility make your job more difficult as a developmental controller? 1 Definitely Not – 4 Somewhat – 3 Definitely Yes	1-7 Likert Scale

Predominant culture

For item U-S31 the Transfer Lower group most frequently indicated *Unsupportive/Apathetic* (30, 50.8%) and *Hostile* (24, 40.7%) as the predominant organizational culture at their facility, while the Successful group most frequently indicated *Supportive* (59, 47.6%) and *Friendly* (52, 41.9%). Proportions from this item are presented in Figure 4.

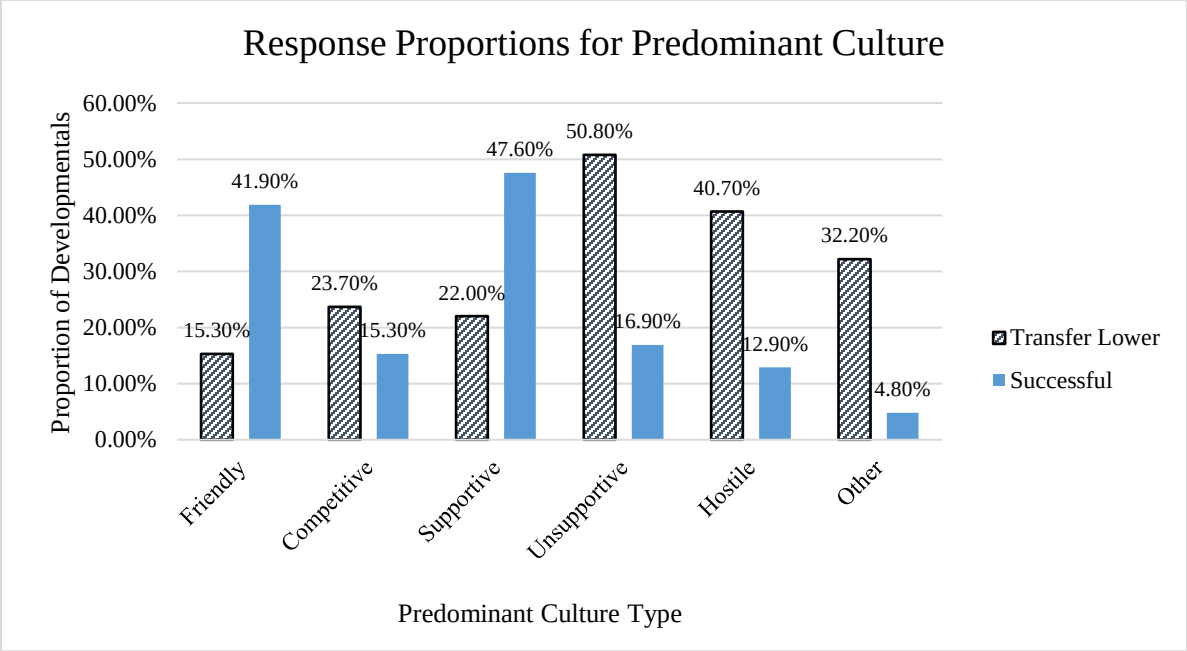

Figure 4. Response Proportions for Predominant Culture.

Each participant selecting "Other" provided an additional comment to their response; responses from both groups are presented below.

What was the predominant organizational culture at your facility?

Transfer Lower

- *Everyone acted as if they were better than anyone who was not a CPC at their center. Even to CPC's from other centers or TRACONS.*
- *Poor working environment contributed to poor training and being able to learn in that type of environment.*
- *If you don't fit in, training is going to suck.*
- *It depended on who you were.*
- *An "old boy club."*
- *Isolating, sometimes no one would talk to you, cliquish, offensive, fake.*
- *There was a clique that if you were liked they made you a training priority.*
- *There was a supervisor who out in the open would make fun of one of the controllers for being homosexual. He made racist remarks out loud and no one said or did anything about it. Overall, the culture was bad.*
- *Several hostile work environment complaints were filed.*
- *I wouldn't say unsupportive, but they always let you know you probably would not make it.*
- *Management lets controllers run the show in many instances.*
- *It seemed to be the most important that you were "liked" by your OJTI's/FLM and then performance was secondary. Someone well liked was given way more benefit of the doubt than someone not liked…*

What was the predominant organizational culture at your facility?

Successful

- *A majority of this depended on who you trained with. There were many great supportive people along the way and then there were the grumpy, unsupportive, rude, people who didn't care if you washed out or signed off.*
- *Different areas and crews seemed to have different cultures that ranged from good to bad. Depending on who you are working with a particular day, you can be in a good supportive environment or in a negative unsupportive environment.*
- *My first en route facility was unsupportive and even hostile at times. My current facility seemed supportive and minds their business.*

Cultural factors for success

Next, developmentals provided 1-7 ratings (Definitely No to Definitely Yes) regarding how supportive they found the other controllers at their facility, as well as their facility's conduciveness for success. Both groups found the other controllers at their facility to be at least somewhat supportive; however, participants in the Successful group provided a higher rating overall. Additionally, the Transfer lower group had a lower mean rating than the Successful group when asked if their facility's culture/environment was conducive for success. Mean ratings for both items are presented in Table 23.

Table 23. Mean Ratings per Group for U-S 32-33

Question	Transfer Lower *M* (*SD*)	Successful *M* (*SD*)
(U-S32) Were other controllers at your facility supportive?	**4.17 (1.63)**	**5.30 (1.57)**
(U-S33) Was the culture/environment at your facility conducive for success?	**2.76 (1.66)**	**5.02 (1.67)**

Finally, participants were given the option to provide a comment based on their ratings. Sample comments from both groups are presented below.

Was the culture/environment at your facility conducive for success?

Transfer Lower

- *Other than a supervisor with issues of people not working traffic his way, everyone is and was very supportive.*
- *I didn't personally have issues but witnessed other trainees being treated poorly for not being part of "the cool guys." Trainers would make assumptions on people's abilities just by how they looked/dressed.*
- *Most felt like they wanted us to fail to bolster their ego. There was also a lot of talk amongst CPCs about keeping numbers low so they could get overtime.*
- *A hostile culture that writes off trainees upon first meeting them is not conducive to success.*
- *Felt very dull. Environment was stressful.*
- *Culture of hostility and failure. Controllers pride themselves in washing out trainees.*
- *You were told numerous times you probably wouldn't make it when you checked in.*
- *They constantly talk about who they think is going to wash out before they even see them control. Other instructors bad mouth their trainees to everyone else before anyone can see for themselves.*
- *There was complaining about the facility being understaffed, but the success rate of the facility was extremely low. Many people were very capable, and went on to certify at other facilities and could have certified at the center.*
- *Low morale with a combative stance against training. No real support while in classroom, felt isolated and unprepared from the start. Very difficult to establish working relationship/friendships.*
- *Favoritism and discrimination.*
- *The environment is negative. OJTI's aren't supportive and everyone expects developmentals to fail. Very few people want to see you succeed. The training department felt like it wanted to fail you.*
- *Some people were very supportive. Most weren't until you were over 75% done.*

Was the culture/environment at your facility conducive for success?

Successful

Training Teams

- *Management was very supportive of my success through training. OJTIs always tried to help with anything I needed to succeed.*
- *I had a great supervisor and two great instructors. I was surrounded by supportive controllers.*
- *In my experience, I never received any negative feedback or felt like anyone was trying to hold me back from being successful.*
- *Finding a good fit with the right OJTI for the developmental has a huge impact on success. It is also important to have a FLM who recognizes good and bad matches for OJTI/ developmental. We had supervisors who would hinge someone's success on whether or not they liked a developmental. We have OJTIs who don't teach, but mock developmentals or refuse to answer questions and then yell.*
- *All depends on who your trainers were. Some of the people go above and beyond some people leave on the developmental. It truly depends on who the trainers were.*
- *Some trainers were very good, but most of them didn't want to put forth any effort in assuring I received adequate training time. They would take long breaks and refuse to shorten them if we had very low manning for the day. If I received no training, they didn't really care.*

Facility Culture

- *Overall most people in the building want to see you succeed and will do their best to help when they can. There are some controllers that are just negative and will criticize and make fun of developmentals, making it hard for them to do well or even want to. There is a tendency to turn a blind eye to the negative things happening rather than address the issues.*
- *While the recent trainee success rate at my facility is close to 100%, the process could be much more efficient and is much harder than it needs to be.*
- *There's a 50/50 washout rate among new developmentals with no experience. It's about a 90% success rate for prior experience. There was a mentality around here of "this is how we've always done it" and not open to change for the better.*
- *Like I mentioned earlier, some team members really want to contribute and help you throughout training, while others are apathetic, and a select few are even hostile and try to make you look bad in front of others. People and politics should not be interfering with a student's training progress.*
- *They don't care about us.*
- *There are many people that are helpful etc. But they are limited and hard to reach. Furthermore, we have staffing shortages that cause problems with the culture.*
- *The lack of diversity is very prominent and affected my way of life tremendously. Not being able to choose my location where there would be more diversity and people like me to assist me through the training program gave me a very unfair disadvantage.*
- *Coworkers were so unhappy and uncooperative.*
- *The culture at the time I arrived was a combination of hostile and apathetic.*

- *We are set up and given every opportunity they are able to give us. They are unable to control the magnitude and complexity of traffic, which became an issue from time to time.*
- *Depending on the developmental's mindset, working around people that are (at least seemingly) apathetic or unsupportive as well as those that are more competitive natured can be extra stressful.*

Next, participants from the Transfer Lower group were asked to rate factors on a 1-7 Scale (Not At All to Very Great Extent) that contributed to them being transferred to a lower level facility (U34), while participants in the Successful group were asked to rate the extent to which various factors contributed to their success in training (S34). Transfer Lower participants rated the culture of the facility, training methods, and instructors as contributing highly to their transfer to a lower-level facility, but rated individual ability as low contributor to their transfer. For the Successful group, individual ability was the highest rated contributor to their success. Table 24 presents mean ratings for the Transfer Lower group, and Table 25 presents mean ratings for the Successful group.

Table 24. Mean Ratings for Factors Contributing to Transfer (U-S34).

Item	Transfer Lower *M* (*SD*)
Individual ability/performance	**3.74 (2.05)**
Local training policies and procedures	**3.52 (2.44)**
National training policies and procedures	**3.13 (2.47)**
Training instructors	**4.98 (2.33)**
Training methods	**5.04 (2.27)**
Organizational/facility culture	**5.20 (2.09)**
External factors (e.g. family, location, etc.)	**3.83 (2.78)**

Table 25. Mean Ratings for Factors Contributing to Success (U-S34).

Item	Successful *M* (*SD*)
Individual ability/performance	**6.18 (1.21)**
Local training policies and procedures	**4.20 (1.63)**
National training policies and procedures	**4.02 (1.63)**
Training instructors	**5.82 (1.44)**
Training methods	**5.27 (1.49)**
Organizational/facility culture	**4.44 (1.82)**
External factors (e.g. family, location, etc.)	**4.85 (2.11)**

Policies and procedures

For items U-S35 and U-S36, participants gave 1-7 ratings (Definitely No to Definitely Yes) to indicate the level of difficulty they experienced during training due to local and national policies. Local organizational policies or procedures were rated higher than were national organizational policies or procedures as making the job of a developmental controller more difficult, but both items were rated below the midline of the scale. These results, combined with those for questions U-S34, indicate that local and national training policies and procedures were not perceived as having a high impact on training outcomes. Mean ratings are presented in Table 26. Comments from both groups are listed below the table.

Table 26. Mean Ratings for Policies and Procedures.

Question	Transfer Lower *M* (*SD*)	Successful *M* (*SD*)
(U-S35) Did any local organizational policies or procedures at your facility make your job more difficult as a developmental controller?	**3.32 (1.87)**	**3.03 (1.89)**
(U-S36) Did any national organizational policies or procedures at your facility make your job more difficult as a developmental controller?	**2.50 (1.24)**	**2.49 (1.49)**

Did any local/national organizational policies or procedures at your facility make your job more difficult as a developmental controller?

Transfer Lower

Training Procedures

- *There was a disconnect between the training department and going to the floor. I was told I was trained improperly in the lab and there seemed to be open hostility towards the lab instructor by my OJTI.*
- *Having to wait 3 weeks for a TRB and not getting extra hours to compensate for lost training is backwards.*

Did any local/national organizational policies or procedures at your facility make your job more difficult as a developmental controller?

Successful

Training Procedures

- *The FAA minimum training hours need to be adjusted to allow prior rated controllers the ability to achieve a rating at their own pace.*
- *The training practices, traditions, standards and structure which has been in place for years at my current facility have failed to adapt to new traffic patterns and volume (which is generally much lower than past years).*
- *Local policies: scheduling developmentals shifts not consistent with trainer, or only scheduling a certain morning shift even though there could be traffic earlier and then trainer having to help developmental get a different shift.*

Performance

The performance section of the DCQ briefly references themes regarding developmentals' expectations and difficulties with tasks. Items from this section are listed in Table 27.

Table 27. Items from Performance Section.

Question	Question Type
(U-S37) Is/Was the job of a controller at your facility what you expected? Do you have any additional comments on your response?	1-7 Likert Scale
(U-S38) How difficult did you find the following tasks while in training? Separating aircraft using non-radar procedures, Separating aircraft using radar procedures, Coordinating with other controllers, Communicating with pilots, Performing multiple tasks at the same time, Remembering everything that needs to be done	1-7 Likert Scale
(U-S39) Please list any other tasks that were especially difficult for you to learn.	Open Response

First, for item U-S37, "Is/Was the job of a controller at your facility what you expected," developmentals from the Transfer Lower group gave a mean rating of 3.88 (*SD* = 1.74) on a 1-7 Scale (Definitely Not to Definitely Yes); while developmentals from the Successful group had a mean rating of 4.85 (*SD* = 1.39). Additional comments are listed for both groups below.

Transfer Lower

Training Procedures

- *I had no idea how stressful centers made OJT. It inhibited me to work traffic.*

Facility Culture

- *I expected to be treated as a person. I also expected those responsible for training to do their job to help me learn and succeed.*
- *More stressful, compounded by dealing with issues with OJTI and supervisor.*
- *I have worked as an Air Traffic Controller for over 15 years, and never have I ever been treated as badly as when I worked at this facility.*
- *I know there will be conflict and perception issues at any job. Though, this being modern professional times I had hoped for some change from the militaristic, ego-induced, "mean-girl" – "good-ol-boy" system found in previous decades.*
- *I expected the job to be difficult, but having to deal with the controllers i.e., their "good ol' boy" club, "trainees are not real people" mentality was a challenge I did not expect.*
- *I was well advised about the nature of the work, hours, and that my career would depend on my ability to certify. I was not well advised on what the training experience would be like.*
- *I thought things would be more supportive. I thought that the main goal was to try to help a developmental be successful. It was not the case with me at my first facility.*

Successful

Training Procedures

- *Delay of OJT due to mismanagement of classroom and lab facilities caused several developmentals to perform duties that may or may not have been within the scope of expected duties.*

Facility Culture

- *The challenge it posed socially was much greater than I had anticipated. Social politics played a great role in my training.*
- *The job of a developmental controller at my current facility seemed to receive much less respect than the same job at my first facility. It seems to be changing, but the facility overall seems to have a morale problem.*
- *Management doesn't care about controllers, all they do is sit back and yell and make you feel undeserving to be here.*
- *I thought the people outside of the training team would be much more supportive.*
- *I entered the program with the understanding that I was going to be taught how things were done at this facility. I transferred from a facility that was completely different, however the training department thought that since I was a controller somewhere else, that this would be easy for me. I tried to explain to them that the equipment was new, but they acted like I would be able to pick it up in no time. This created stress and affected my ability to focus on the separation and overall traffic flow at my facility.*

Next, for item U-S38, "How difficult did you find the following tasks while in training," participants provided 1-7 ratings (Not at all to Very Difficult) based on the difficulty of various tasks while in training. The Transfer Lower group rated "Separating aircraft using nonradar procedures" as higher in difficulty than the other tasks and as more difficult than did the Successful group. Mean ratings for both the Transfer Lower and Successful group are presented in Table 28.

Table 28. Mean Ratings per Group for Task Difficulty (U-S38).

Item	Transfer Lower *M* (*SD*)	Successful *M* (*SD*)
Separating aircraft using nonradar procedures	**4.42 (2.74)**	**2.96 (1.89)**
Separating aircraft using radar procedures	**2.84 (1.52)**	**2.73 (1.63)**
Coordinating with other controllers	**2.63 (1.50)**	**2.94 (1.85)**
Communicating with pilots	**2.40 (1.86)**	**2.28 (1.43)**
Performing multiple tasks at the same time	**2.89 (1.56)**	**3.16 (1.83)**
Remembering everything that needs to be done	**2.96 (1.51)**	**3.44 (1.78)**

For this item, participants explained additional tasks that presented difficulty. Responses are listed by group below.

Please list any other tasks that were especially difficult for you to learn.

Transfer Lower

Training Teams

- *Each task was not difficult. It was difficult because of the pressure of OJT.*

Training Procedures

- *Being able to control radar aircraft with limited use of strips. My last facility used strips exclusively for radar. My current facility uses minimal strips.*
- *No training at facility, just at the Academy.*
- *Conditional/Seasonal operations.*
- *Learning how to train with 14+ different trainers a month.*

Facility Culture

- *Interacting with other controllers, dealing with harassment.*
- *Coordinating became a problem when I'd work with certain trainers/CPCs that seemed to dislike me (flat out and confirmed by 3rd party trainers/other developmentals).*

Individual Ability

- *Nothing was all that difficult. The problem was not having enough time to season and develop to be able to work at a fast enough pace to keep up with the highest volume of traffic that comes and goes sporadically at this facility*
- *Scanning techniques.*
- *Scanning was the biggest challenge I faced in training.*
- *Managing multiple sectors combined.*

Individual Well-Being

- *How to deal with stress/anxiety in a healthy way.*

Please list any other tasks that were especially difficult for you to learn.

Successful

Training Teams

- *You had to learn how each controller around you likes things and how different trainers want to see you do things. You may be correct one day but wrong the next depending on who is watching you.*

Training Procedures

- *Aircraft perform differently in the simulators than in real life, and even pilots fly the same types of aircraft differently.*

Individual Ability

- *How to use the User Request Evaluation Tool (URET).*
- *Prioritizing.*
- *Applied proper priority of work/transmissions; learning frequency control; using applied separation; separating visual flight rules (VFR) traffic in Class B.*

Individual Well-Being

- *Overall confidence due to previously washing out of a facility led to doubts and hesitation.*
- *Multitasking and my own stress management were the most difficult for me to learn.*

Feedback

The Feedback portion of the DCQ obtains developmentals' overall perception of ATC, time spent as a developmental controller, and personal beliefs regarding ability and ATC.

Transfer Lower feedback

Two feedback items were only asked of Transfer Lower developmentals and are presented in Table 29; the remaining items are listed in Table 30.

Table 29. Items from Feedback Section – Transfer Lower Only.

Question	Question Type
(U39) Do you think you could have certified as a controller if you had stayed at your facility? (Mark N/A if CPC before you left) 1 Definitely Not – 4 Somewhat – 7 Definitely Yes	1-7 Likert Scale
(A) If so, how much longer do you think it would have taken you to certify? Less than 1 month, 1-3 months, 4-6 months, 7-9 months, 10-12 months, 1-2 years, More than two years Do you have any additional comments on your response?	Multiple Choice
(U40) Do you think you think you could have certified as a controller at a different facility of the same type? 1 Definitely Not – 4 Somewhat – 7 Definitely Yes	1-7 Likert Scale

On Item U39, developmentals from the Transfer Lower group had a mean rating of 6.02 (*SD* = 1.15) on a 1-7 Scale (Definitely No to Definitely Yes) indicating that many thought they could have certified at their current facility given more time. When asked how much more time they believed was needed to certify 63.3% (49) of the responding participants believed they would have certified in one year or less. Proportions are presented in Figure 5. Additionally, when responding

to item U40 participants in the Transfer Lower group had a mean response of 6.43 (*SD*=0.99) on a 1-7 scale (Definitely Not to Definitely Yes) indicating that they many thought they could have certified at a different facility of the same type.

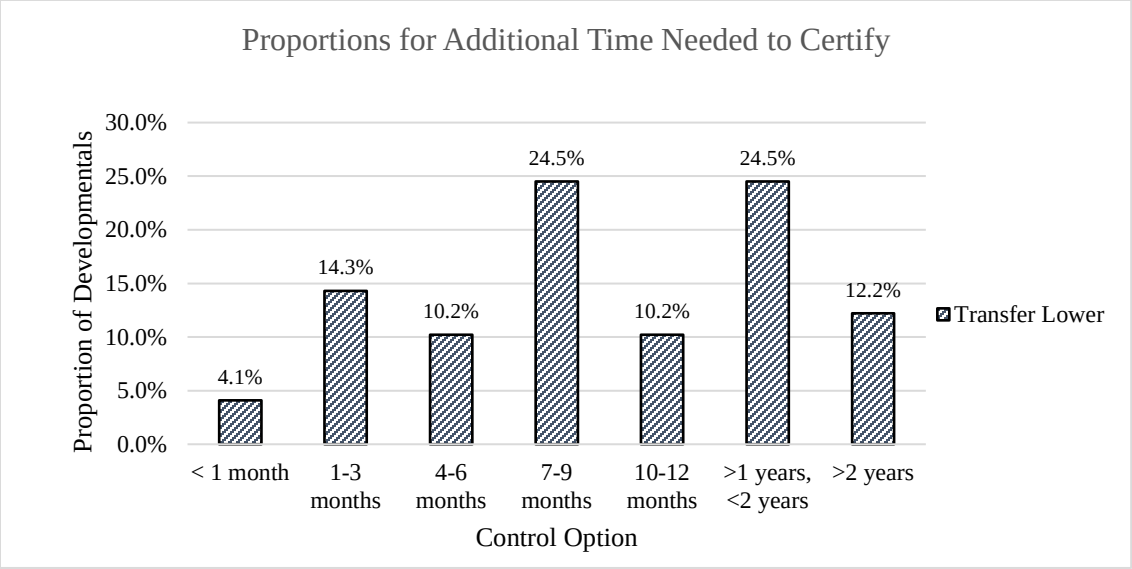

Figure 5. Proportions for U39

A proportion of additional comments from item U39 are listed below.

Do you think you could have certified as a controller if you had stayed at your facility?
Transfer Lower

Training Teams

- *Having different OJTIs and/or an easier initial floor assignment could very easily have led me to certifying at the center.*
- *If I had been given a supervisor who was supportive and a more experienced, encouraging training team, I would have been able to certify.*

Training Procedures

- *I do not think I was far. I ended up doing very little for six years as I waited to go to Oklahoma. I would have been able to pass the part I was having trouble with in that time.*
- *Being allotted more training hours, having worthwhile skill enhancement and working with different trainers would have helped.*
- *It takes so long due to staffing along with the right traffic with quality training, and prime time leave.*

Individual Ability

- *I felt that it took me a long time to make good habits, was always confident I would make it.*

Overall feedback

Table 30 presents items taken from the *Feedback* portion of the DCQ and were given to both groups of developmentals. The items pertain to the individual needs of developmentals, as well as their perceptions on controlling air traffic and working as a developmental controller.

Table 30. Items from Feedback Section – Part One.

Question	Question Type
(U-S41) What could have been done to help you succeed (more easily) as a developmental controller at your facility? Nothing, More training, Better training, Better OJT instructor(s), Better managers, More feedback, More supportive environment, Other (Please list below)	Mark All That Apply
(U-S42) How satisfied were you with the quality of the supervision you received at your facility during training? 1 Very Dissatisfied – 4 Somewhat Satisfied – 7 Very Satisfied	1-7 Likert Scale
(U-S43) What do you like best about controlling air traffic? Controlling traffic, pay, Work hours/schedule/shift work/status, Excitement/challenge, Physical environment, Organizational culture, Managerial policies, Co-workers, Trainer(s)/instructor(s), Other (please list below)	Mark All That Apply
(U-S44) What do you like least about controlling air traffic? Controlling traffic, Pay, Work hours/schedule/shiftwork, Status, Excitement/challenge, Physical environment, Organizational culture, Managerial policies, Co-workers, Trainer(s)/instructor(s), Other (please list below)	Mark All That Apply
(U-S45) What was most satisfying about your work as a developmental controller?	Open Response
(U-S46) What was least satisfying about your work as a developmental controller?	Open Response
(U-S47) Based on your experience, what do you think it takes to succeed as a controller?	Open Response
(U-S48) Is there any cognitive or personal attribute that we could look for in new applicants that you think would have helped you succeed in controller training?	Open Response

On item U-S41, "What could have been done to help you succeed (more easily) as a developmental controller at your facility," both groups most frequently selected "More supportive environment" (Transfer Lower: 36, 61%, Successful: 32, 25.8%). For the Transfer Lower group this was followed by "Better OJT instructors" (32, 54.2%), and for the Successful group, "Better training" (26, 21.0%). Responses frequencies and proportions for this item are presented in Table 31.

Table 31. Response Frequencies and Proportions for Help to Succeed (U-S41).*

Item	Transfer Lower		Successful	
	N	%	*N*	%
Nothing	**1**	**1.7%**	**22**	**17.7%**
More training	**23**	**39.0%**	**19**	**15.3%**
Better training	**30**	**50.8%**	**26**	**21.0%**
Better OJT instructor(s)	**32**	**54.2%**	**19**	**15.3%**
Better managers	**24**	**40.7%**	**20**	**16.1%**
More feedback	**15**	**25.4%**	**10**	**8.1%**
More supportive environment	**36**	**61.0%**	**32**	**25.8%**
Other	**15**	**25.4%**	**18**	**14.5%**

* Because respondents selected all applicable items, percentages will not sum to 100.

Participants from both groups provided additional comments to accompany their item selection for U-S41; comments from both groups are presented below.

What could have been done to help you succeed (more easily) as a developmental controller at your facility?

Transfer Lower

Training Teams

- *Accountability for the instructors. Accountability towards the work environment from the front line managers. They are equal.*
- *Change my trainer since I made it known multiple times it wasn't working out.*
- *If my supervisor and trainers were not changed after radar dynamic simulation (DYSIM) training, I would have certified. Many of the younger OJTIs need to be retrained annually.*

Training Procedures

- *Lots of time was wasted that could be used to slowly make sure everything is understood and training would be more of a success.*
- *Eliminate simulation training from automatic training failure. An option to leave it to the FLM's/OJTI's judgement whether or not to continue training as opposed to being automatically failed by a simulator evaluation.*
- *More time and consistency in the simulator labs.*

Facility Culture

- *A more supportive environment with trained instructors would have been beneficial.*

What could have been done to help you succeed (more easily) as a developmental controller at your facility?

Successful

Training Teams

- *Once it was determined that my original supervisor would be performing Operation Manager duties, my training supervisor should have been changed. I was often not trained by the other supervisors.*
- *More consistent training techniques between all trainers.*

Training Procedures

- *Less time between training classes.*
- *More consistent training on local.*
- *The lack of consistent time was aggravating but without certified controllers there was nothing that could be done. We are just super short staffed.*
- *More OJT simulator time, less classroom time.*

Facility Culture

- *There is a culture of not preaching technique to new developmentals, but this can be very useful in helping to develop initial skills and understanding of the operation. OJTIs should feel more confident in giving "best practices" methods to developmentals.*

Next, participants were asked to rate the quality of supervision received at their facilities (U-S42) (Very dissatisfied to Very satisfied), before moving on to indicate which factors they like best and least about controlling air traffic. For this item, participants in the Transfer Lower group provided a lower mean rating than participants in the Successful group (see Table 32).

Table 32. Mean Ratings by Group for Satisfaction of Supervision Received

Question	Transfer Lower *M* (*SD*)	Successful *M* (*SD*)
(U-S42) How satisfied were you with the quality of the supervision you received at your facility during training?	**3.82 (1.71)**	**5.35 (1.74)**

Like best and like least. Next, both groups of participants were asked to identify what factors they liked best about controlling air traffic (U-S43, U-S44). For both groups "Controlling traffic" and "Excitement/challenge" were the two most frequently chosen items. Response proportions for item U-S43 are presented in Table 33.

Table 33. Response Frequencies and Proportions for Like Best About Controlling Air Traffic (U-S43).*

Item	Transfer Lower		Successful	
	N	%	*N*	%
Controlling traffic	**52**	**88.1%**	**84**	**67.7%**
Pay	**33**	**55.9%**	**65**	**52.4%**
Work hours/schedule/shiftwork	**16**	**27.1%**	**20**	**16.1%**
Status	**15**	**25.4%**	**31**	**25.0%**
Excitement/challenge	**49**	**83.1%**	**77**	**62.1%**
Physical environment	**7**	**11.9%**	**10**	**8.1%**
Organizational culture	**9**	**15.3%**	**13**	**10.5%**
Managerial policies	**1**	**1.7%**	**2**	**1.6%**
Coworkers	**24**	**40.7%**	**50**	**40.3%**
Trainers/instructors	**4**	**6.8%**	**20**	**16.1%**
Other	**4**	**6.8%**	**6**	**4.8%**

*Because respondents selected all applicable items, percentages will not sum to 100.

Additional comments provided with an item response of Other are presented by group below.

What do you like best about controlling air traffic?
Transfer Lower:

Individual Well-Being

- *It is a great job that offers rewards for doing well! Every day is a new challenge.*
- *It is a fun job, very challenging and satisfying.*
- *I LOVE to train others. It is my passion. I have done if for years and love seeing someone make it.*
- *A great and fun job.*

What do you like best about controlling air traffic?
Successful

Individual Well-Being

- *My daughter's eyes and excitement of her voice when she watched me control traffic and when she tells people what job I have and that she is a baby Air Traffic Controller.*
- *I enjoy working for the FAA and enjoy feeling like I am a part of something larger than myself. I love being a civil servant.*
- *Benefits (healthcare, retirement).*
- *Pay after certification, not before.*

Furthermore, for items U-S44 the most commonly selected factors both groups of participants liked the least was work hours/schedule/shiftwork, managerial policies, and organizational culture, respectively. Response proportions are presented in Table 34.

Table 34. Frequencies and Proportions for Like Least About Controlling Air Traffic (U-S44).*

Item	Transfer Lower		Successful	
	N	%	*N*	%
Controlling traffic	**1**	**1.7%**	**4**	**3.2.%**
Pay	**1**	**1.7%**	**2**	**1.6%**
Work hours/schedule/shiftwork	**26**	**44.1%**	**59**	**47.5%**
Status	**0**	**0%**	**1**	**0.8%**
Excitement/challenge	**0**	**0%**	**2**	**1.6%**
Physical environment	**7**	**11.9%**	**16**	**12.9%**
Organizational culture	**14**	**23.7%**	**26**	**21.0%**
Managerial policies	**20**	**33.9%**	**45**	**36.3%**
Coworkers	**11**	**18.6%**	**17**	**13.7%**
Trainers/instructors	**27**	**28.8%**	**5**	**4.0%**
Other	**10**	**16.9%**	**4**	**3.2%**

***** Because respondents selected all applicable items, percentages will not sum to 100.

Additional comments given with an item response of other are presented by group below.

What do you like least about controlling air traffic?
Transfer Lower

Training Procedures:

- *Going through the training process.*

Facility Culture

- *Environment caused by individuals with bad attitudes. One bad apple spoils the whole bunch.*
- *"Mean-girls" the movie = [Facility].*
- *The job is GREAT. The people at [Facility] were awful (with some exceptions).*
- *The "us against them" attitude between management and controllers.*
- *I know not all places are like what I came from.*

Individual Well-Being

- *Pay is still not enough. I can barely afford an apartment with a roommate.*

What do you like least about controlling air traffic?
Successful

Facility Culture

- *People complaining and so unhappy when we are doing the best job in the world.*
- *The schism between management and the union.*

Individual Well-Being

- *The shift work is really taking its toll on all of us. Most are working overtime every week. This is a serious issue and fatigue mitigation should be one of the top priorities.*

Most and least satisfying. Next, participants were given the chance to provide an open response about the most and least satisfying parts of their career as an air traffic controller (U-S45, U-S46) (See Table 30). A proportion of participant responses by group are presented below.

What was most satisfying about your work as a developmental controller?

Transfer Lower

Training Teams

- *Seeing how much my trainers believed in me.*

Facility Culture

- *There were good friendly CPCs who really would try and help you.*
- *Challenges and working in a fast-paced environment.*
- *The other controllers were fun to work with. Plus, working heavier traffic made you feel like you were doing more for the National Airspace System (NAS).*

Individual Well-Being

- *Learning something new every session and seeing yourself develop and gain knowledge and experience every day.*
- *Getting through a busy session with no discrepancies on my critique.*
- *Learning all the new things and actually applying them and working to be a CPC.*
- *Working positions (RA) that I had been certified at. It gave me a sense of pride after enduring such stress and trouble with training.*
- *Keeping the flying public safe/assisting pilots.*
- *Working with seasoned veterans of ATC.*

What was most satisfying about your work as a developmental controller?

Successful

- *Once I was assigned a new supervisor, training became easier and more objective.*
- *Seeming to do well at it. Being encouraged by trainers.*
- *My trainers' knowledge and excitement to pass along their knowledge to make a better controller.*
- *Succeeding and making progress during training.*
- *The challenge of learning the job and the sense of accomplishment that I felt once I had completed training.*
- *My last supervisor while I was training was very supportive and helped to foster training, etc.*
- *Noticing improvement in ability.*
- *Becoming a CPC and helping other developmentals.*
- *What I accomplished despite the surroundings.*
- *Overcoming adversity and strife.*
- *Knowing that I was training in a job that made a difference and one that I could take great pride in.*
- *The ability to learn a new skill and the enjoyment and excitement of certification.*
- *There is little satisfying about work when you are in training. The only thing satisfying is certifying on each position.*
- *Learning how to be a controller and finally getting the hang of what I was doing. I loved becoming comfortable in my decision-making and abilities.*
- *I was able to get decent skills checks with the supervisor when there was traffic.*

Next, a proportion of responses regarding the least satisfying parts of being a developmental controller are presented by group.

What was least satisfying about your work as a developmental controller?
Transfer Lower

Training Teams

- *Working with a lot of different instructors that did everything differently.*
- *Dealing with unqualified OJTI and management that get worked over by employees.*
- *Working with the team that I had and supervisor. Training with as many different controllers on a monthly basis as I did. Not being treated or looked upon fairly.*
- *Dealing with certain instructors and managers. Stress.*

Facility Culture

- *Being chastised and written up for things that everybody else in the room does on a daily basis but somehow because you're certified that makes it okay.*
- *Dealing with people who didn't want you to be a CPC.*
- *Personality conflicts, feeling bad about myself, being singled out and harassed.*
- *Being told I was probably going to fail the moment I walked in the door.*
- *Constant reminders of the failure rate - "If you make it".*
- *The amount of sheer negativity.*
- *Training with people who had no care to your future. Trying to prove to people that you deserved to be there when they have already decided your future.*
- *How abusive OJTI's were. Physically and mentally.*
- *Training. Good sessions were few and far between.*
- *Making mistakes on skill checks/check rides.*
- *The culture of failure in training department. Very little help with that process.*

What was least satisfying about your work as a developmental controller?
Successful

Training Teams

- *Not having my initial direct supervisor completely involved in the process.*
- *The OJTIs that are not trained on how to instruct.*
- *The rigidness in some instructors' inability to understand that their technique is not the only way and then harshly criticizing when you are using a technique that another instructor just taught you. There is so much to learn and I think that this issue is the most detrimental to any trainee's progress.*
- *Dealing with differing opinions to a fault and being made to change training teams by management.*
- *My immediate supervisor was hardly in the cab. He never performed a Local Control skill check on me. It was always the other supervisor that was there.*

- *Feeling like you are spinning your wheels sometimes with different OJTI's. Part of the team training should exclude the developmental and allow the supervisor and the OJTI's discuss "this is the standard we want for this segment of training and this is how we want him/her to accomplish this type of task" and that should be re-visited on a very consistent basis to make sure the developmental isn't trying to do one thing a certain way for one OJTI and a different way for the other. That is a huge barrier to success.*
- *Frustration in trying to appease trainers as opposed to focusing on controlling traffic.*

Training Procedures

- *The length of time it took to certify due to local and managerial decisions.*
- *Management making meeting my military obligations difficult and stressful. Training process was drawn out for administrative reasons, not performance reasons.*
- *Overall training is hard and stressful. It's a long grind and knowing that going into the process can help greatly. There is no getting around this fact, it's simply part of one of the greatest jobs on earth.*
- *The organizational structure of the FAA and local policies often hinder your progress and success as a trainee, in other words the FAA tends to get in the way rather than help you succeed, your trainers are really the ones that provide for your success and combat the obstacles that the FAA puts in front of you.*

Facility Culture

- *Low pay, begging for training time, being looked down on and talked down to by controllers who feel they are superior.*
- *Some coworkers weren't always supportive of someone learning and making mistakes.*
- *Previous supervisors other than my last one were apathetic, the culture of training in the facility was generally apathetic, as a developmental you constantly get mixed messages regarding performance and technique.*
- *Constantly being told you are wrong.*
- *Training is not fun at all. It is sometimes humiliating.*
- *Being harassed and nitpicked by your trainer or having your decisions second-guessed "after the fact."*
- *The constant criticism and feeling of never being good enough and never knowing if you were going to make it through training.*
- *Being a trainee can sometimes make you feel like you're a second-class citizen.*

Individual Well-Being

- *I feel that the hours negatively impacted me most, in my family and personal affairs.*
- *Lack of diversity! Working across the country with no family support waiting to get done training just to transfer back where I am from, when the FAA should have just sent me there to begin with!*

Perspectives. The final portion of the feedback section asked developmentals to provide their personal perspective on what traits, cognitive, and personal attributes it takes to become an air traffic controller. Developmentals from both groups provided responses in an open responses format on each item. Responses for the question are presented by group below.

Based on your experience, what do you think it takes to succeed as a controller?

Transfer Lower

Training Teams

- *OJTIs that foster growth.*

Training Procedures

- *Studying and knowledge is great, but seeing the application of the rules is way more effective.*

Facility Culture

- *A good training environment and culture, supportive coworkers/trainers/supervisors, trainers that know how to teach not just do.*
- *Dedication, good work environment, helpful instructors and preference of location for better morale.*
- *A system that helps you succeed and be fully prepared to start training. Patient, well rested. Good trainers willing to train.*
- *Having a mentor, outside the OJTI process, who could help guide you to resources and understand situations.*
- *Become friends with the people that have the most say (ex. your trainers).*
- *Realistic expectations, patience, and a hostile-free environment.*
- *It takes three parties, the developmental, the trainers and management to be on the same page, and going in the same direction at the same pace. Expectations must be reasonable, and unless there is a culture of positivity, failure could be a possibility.*
- *The right environment that tailors training to the trainee. It should never be one size fits all.*

Individual Ability

- *Hard work, dedication, studying, an open mind, quick thinking, thick skin.*
- *Keep your head down, don't say anything unless asked.*
- *Speaking up when something is wrong or doesn't seem right.*
- *Quickly solving problems, friendly disposition.*

Based on your experience, what do you think it takes to succeed as a controller?

Successful

Training Teams

- *An encouraging and motivational training and support team and to know you can ask however many questions you need to and it is never too many. The team is all of your co-workers not just the training team. To know that everyone you work with is willing to help however they need to in order to make sure you are successful.*
- *An instructor willing to go through the orders/letters of authorizations (LOAs) to ensure understanding, willing to discuss the previous scenario. Sharing techniques that ensure separation and organization.*

Individual Ability

- *Strong will, attention to detail, confidence, good attitude, friendliness towards others.*
- *Patience, the ability to learn from OJTIs who teach differently, and being able to learn from your mistakes and how not to make them again.*
- *Effort. If you work at it and make sure you keep showing you are trying hard, I believe the trainers who care will be willing to help you make it.*
- *Confidence was a huge factor, willingness to learn and correct mistakes and patience.*
- *It takes the ability to adapt to rapidly changing situations, making snap calls that are reasonable/safe/efficient in a timely manner, and understanding how to accomplish a task with and without the use of the equipment.*
- *Projection, scan, listening, awareness, assertiveness, ability to separate traffic, and (1-3) most importantly (1) a trainer that can teach, (2) management that can oversight, (3) environment that will allow you to succeed. Without the last three, you will not succeed even if you have the others.*
- *Coming into work every day and putting your abilities on display to be judged and criticized is not for everyone, but I did enjoy "stepping up to the plate." There were days where you just feel mentally and physically battered after work but those were the days that you actually learned most from the mistakes. Confidence plays a huge role in how you approach the following session, day, and week after perhaps getting written up for multiple things. One must have a short emotional memory when it comes to training but a seasoned long-term memory when it comes to acquiring and learning the new skills to apply going forward.*
- *Hard work and determination. It's as simple as that. No matter your experience or ability, if you put the required effort in and accept the help from people who truly want you to succeed, then success will be found. Hard work and an apt for the job. Not everyone can do this. Even some of the current CPCs here should not have made it. A good solid foundation of map knowledge, quality information being provided, explanation of why things work and don't work.*

Individual Well-Being

- *There is a ton of stress thrown at developmental to hurry and get certified when some or most have a lot of stress at home including kids. Also for most, this is their first time away from home. Breaks...they need breaks from training. Look at the trainers! Every time I see it, there is regret when they are told they have to train that day. We all hated training because of the stress. These developmentals need a break after they get their first couple D sides or positions they can work by themselves.*
- *Your mental fortitude better be up to par.*
- *A very thick skin and a tolerance of incompetent training pipeline that is selective to people it shouldn't be. A capacity to adapt to different to situations (and people) rather quickly.*

Next, responses for the item "Is there any cognitive or personal attribute that we could look for in new applicants that you think would have helped you succeed in controller training?" are presented by group.

Is there any cognitive or personal attribute that we could look for in new applicants that you think would have helped you succeed in controller training?

Transfer Lower

Individual Ability

- *Open minded, accepting of criticism, multi-tasker, easy-going.*
- *Good problem solving abilities, ability to see things in 3D.*
- *Experience.*
- *Need to be able to make decisions quickly and helps to have type "A" personality.*
- *Awareness, both situational and non-situational.*
- *Willingness to work hard and never stop learning.*
- *Confident. Works well as an individual and with a team. Thick-skinned.*

Individual Well-Being

- *Not sure how you could assess it but seek candidates with thick skin.*
- *Perseverance and a positive attitude.*
- *Willing attitude and a resilient personality to bounce back from hard days when you feel like you can't do anything right. Speaking up when something is wrong or doesn't seem right.*
- *A great attitude. It's hard to struggle at work and have to put on "the face", the face that everything is ok, when really you are worried about your job and your future. I was told that despite all I went through, my positive attitude, even in failure, would help me later in my career.*

Is there any cognitive or personal attribute that we could look for in new applicants that you think would have helped you succeed in controller training?

Successful

Individual Ability

- *Confidence, good work ethic, thick skin, calm under pressure*
- *Being able to follow through on tasks, and having patience.*
- *Aggressive. Leaders. Self-motivated, organized, "squared-away".*
- *A solid background in aviation. Being a team player (sports). Having an eagerness to learn and not expect that they will get checked out if they study. This being their primary job and understanding the importance of serving the public and providing them with a safe efficient way to travel.*
- *I was a pilot and believe it helps a lot having a very crude understanding of what controllers do.*
- *A background in hard work. I have worked plenty of hard jobs, -40 weather, outside all day. I will go to any facility and train, get yelled at, and it will still be a better day at work then previous jobs I have had. If you hire somebody with no real life experience (i.e. school only, easy job that does not test them) you will be dealing with them whining all the time.*

Individual Well-Being

- *Flexibility, humility, and sense of humor.*
- *Someone who does not stop when things get tough. Must be determined.*
- *Someone who enjoys working with other people. Compassion. Critical thinking skills.*
- *Find people who excel under pressure and smart people with common sense.*
- *You want to look for people with positive attitudes and that are willing to work hard every day.*
- *The willingness to learn. Positive and humble attitudes.*
- *Personalities and work ethic differ widely for air traffic controllers. There is no personality test that can determine success or fail prior to going through the training process.*
- *Someone that has common sense. Someone that is self-confident. Someone that has very solid self-study skills.*
- *The most important attribute is being able to strike a balance between collaborative and assertive. Working with other controllers while executing a safe an expeditious service to NAS customers.*
- *Someone willing to learn from their mistakes and the mistakes of others.*

Next Phase

Next Phase is the final section of the DCQ. This section references developmentals' overall opinions on moving forward in a career in ATC. Items from this section are presented in Table 35.

Table 35. Questions from Next Phase Section.

Question	Question Type
(U-S49) Are you looking forward to controlling traffic at your (next) facility? 1 Definitely No – 4 Somewhat – 7 Definitely Yes	1-7 Likert Scale
(U-S50) Would you recommend air traffic control as a career choice to your family and friends? 1 Definitely No – 4 Somewhat – 7 Definitely Yes	1-7 Likert Scale
(U-S51) Do you have any other comments that would help us improve selection, placement, or train controllers?	Open Response

In response to items U-S49 and U-S50, both groups had high mean ratings indicating they were looking forward to controlling traffic at their next facility and would recommend ATC as a career choice to their family and friends (see Table 36).

Table 36. Mean Responses for Next Phase by Group.

Question	Transfer Lower *M* (*SD*)	Successful *M* (*SD*)
(U-S49) Are you looking forward to controlling traffic at your (next) facility?	**6.73 (0.73)**	**6.35 (1.19)**
(U-S50) Would you recommend air traffic control as a career choice to your family and friends?	**5.88 (1.62)**	**6.05 (1.60)**

Next, developmentals provided open responses with additional information they believed might help to improve selection, placement, and training in ATC (U-S51). Responses are presented by group below.

Do you have any other comments that would help us improve selection, placement, or train controllers?

Transfer Lower

Training Teams

- *The career is rewarding enough that people should be willing to take the location they are offered initially. With that said there should be some assurances in place that you aren't going to lose your job because of the opinion of some supervisor or manager. The training is much too subjective.*

Training Procedures

- *Have someone responsible for stepping in when a developmental is struggling sooner. Maybe someone from the outside so all parts of the team are evaluated from the FLM to the trainers. A lot of money goes into the whole training process beginning with pre-employment, to OKC, to training at your facility. To me it makes more sense to protect that asset.*

- *Place controllers with terminal experience in terminal.*
- *Send controllers to places they want to go initially. I was not given a choice, and I was sent to an area I have never been and did not care for.*
- *Placement - put people in areas they desire, do not put new hires at high-level facilities or those with low success rates (11% at [facility]). Training - revamp programs with low success rates to model those with high ones, and give OJTIs better instruction to teach trainees with different learning styles.*
- *Look at where they want to go and then the experience level.*
- *Place controllers near their requested facilities to the maximum extent possible. Having a support network near a developmental can greatly improve their ability to handle the stresses of training.*
- *I think letting people decide on where/what part of the country they want to go to would have a positive impact!*
- *Place new hires where they want to be rather than the other side of the country with no time to plan and at personal cost.*
- *Let potential-hires know the facility ahead of time before the academy.*
- *Ask and give en route or tower to those that want a type of facility.*
- *Put people where they WANT to be, or let them WORK for where they want to be and employment numbers will rise as people retire. The job is, in my opinion, the best in the world, but people have families, homes etc. To be a world-class agency, these factors must be taken into account. Treat your people like people.*
- *Improve the placement process, if someone is very unhappy at their location, their training will suffer.*
- *Let them choose the facility from the outset. I would have tried harder if my old facility had been my choice rather than something forced on me in order for me to be a controller.*
- *Stop putting people with 6 or more years of experience at low facilities. It is that experience that will give people a higher chance of success at higher levels.*

Individual Well-Being

- *Consider the whole person concept - family, support, and security outweighs job life.*

Do you have any other comments that would help us improve selection, placement, or train controllers?

Successful

Training Teams

- *I believe trainees should have a say as to who their trainers are instead of just being assigned. Everyone has a different personality and learning/teaching styles and it's very helpful when they are in sync regarding trainees and trainers.*
- *In terms of training, I think more effort should be placed into properly training OJTIs to teach properly and not to lose their tempers.*
- *Hire more instructors so the training process doesn't take so long.*

Training Procedures

- *I would consider placing people at lower level facilities first and having them work their way to bigger facilities. Especially new hires with no experience.*
- *Don't send prior rated controllers to boring level 5 towers.*
- *Help get people placed at facilities they want to be at. This will help with retention.*
- *Pick up the CTI graduates. Let people go somewhat where they want - let them swap for similar level facilities before starting training. Don't start someone out at the highest-level facility - go back to starting out at a lower level facility and working your way up.*
- *Place off the street new hires at 4, 5 and 6 level towers only. Try to place applicants as close to their home as possible even NEST trainees. Get this new Employee Requested Reassignment (ERR) process worked out so people like me and my coworkers can move on instead of being stuck.*
- *Let students go to their home facility or allow them to swap instead of making them certify then transfer.*
- *Not letting a developmental drag out the training process forever in terms of training hours used especially when it is identified that the developmental isn't improving, but management has made a paperwork oversight so the person continues to train. Continue to stick with people like myself who had multiple life events, but never needed an extension of training hours and certified with low OJT hours overall. I will be forever grateful to the FAA and NATCA for helping me easily overcome those hurdles while training especially because I continue to deal with them today even as a CPC.*

Facility Culture

- *Hire more controllers fast. Increase controller pay. Pay OJTIs more and train them to instruct. Promote a culture where OJTIs are honored and respected. Foster respect from the top down to encourage teamwork and discipline.*

Individual Ability

- *Find people who have managed hectic retail oriented small businesses. They already generally know how to relate to people and quickly multi-task.*
- *More preference to people who have had training, schooling in this field. Knowledge of aircraft and general aviation knowledge. A love for aviation should be standard.*

- *I think that prior OJT experience from the military can greatly increase an individual's chance at success, but is not a given with any one individual. Certain military facilities and, in more depth, the qualifications or ratings achieved at those facilities can give great insight as to who already has what it takes to succeed in an FAA facility.*
- *Previous real ATC experience should always take precedence when hiring.*
- *Yes, pick up, previous CPCs that left the agency, then military controllers, CTI's then off the street. Make the FAA what it once was.*

Individual Well-Being

- *I think the employee's desires about location should be taken into account. I was hired for ZDC and really wanted to be close to home and asked many times if I could go to ZTL instead. HR said absolutely not. The class after mine at the academy had 7 people going to ZTL. They could've easily accommodated me. Now, I'll spend the first 7 years of my career trying to swap and trying to ERR to a new facility, where I will have to train again, just because my needs were not taken into account at all. I'll also have to use more leave for travel home, etc.*
- *The fact that I was in my own city I feel helped me be successful, as I did not have to accommodate to new living arrangements, new city, climate, culture. Many new trainees are from out of town and different parts of the country - they are learning a new high-paced job, moving, and dealing with all the personal emotional changes of relocating to an unknown place. Some people do not deal very well with so much change at once.*
- *People should be placed geographically where they want to be. Facility level should be determined by their performance during qualification training. The added stress and challenges posed with relocation do not promote a happy and successful work life.*

DISCUSSION

Despite meeting strict FAA selection criteria and successfully completing ATC training at the FAA Academy, many developmentals fail to certify in field qualification training. The DCQ was administered to developmentals as they completed field qualification training to determine what factors they thought affected their chances of succeeding in training. The DCQ was developed to tap both internal and external factors perceived as playing a role in the training experiences of developmentals. Our primary intent was to understand which components of field qualification training developmental's perceived as successful, as well as identify issues they may have experienced during training in order to provide useful recommendations for intervention. By using the attribution framework developed by Weiner et al. (1972), we were able to identify how attributions made for success and failure within training may be affecting developmental experiences.

The results were presented using five themes, which were found consistently among developmental responses: *Training Teams, Training Procedures, Facility Culture, Individual Ability, and Individual Well-Being.* Many of the comments associated with Training Teams were also related to Facility Culture. Thus, these two themes are grouped in the discussion. Using these

themes, we summarize the major findings below, followed by recommendations for addressing issues raised by the participants.

Finally, notwithstanding issues raised by participants, many developmentals indicated positive components of the field qualification training process. For instance, participants from both groups valued the OJT experience in regard to skill development. Additionally, multiple developmentals from the Successful group indicated positive relationships with their OJTIs, especially in the event where training techniques were focused on confidence building. Overall, both groups highly regarded the job of air traffic control.

Perceptions of Field Training

Training Teams and Facility Culture

When marking items related to Training Teams and Facility Culture, developmentals from the Transfer Lower group typically raised more concerns than did the Successful group. This may be due to the propensity of individuals to assign the cause of personal failure to situational factors (Steiner, Dobbins, & Trahan, 1991); however, additional comments made by the Transfer Lower and Successful groups across multiple items suggest that both Training Teams and Facility Culture pose a major difficulty for all developmentals. For instance, the most difficult work-related factor for both groups was "Did not like My trainer(s)/instructor(s)," with one developmental from the Successful group stating:

> "Most people were very helpful and wanted to guide me throughout my training phases. However, there was always one or two CPCs who always felt the need to make negative or degrading remarks in front of the entire area and put me down unnecessarily. The problem is that when supervisors or other controllers who are not members of your normal team hear these comments, they tend to believe them whether they are hearsay or not, due to them not knowing much about you yet. This is a systemic problem, and training teams should be somewhat more isolated from the negative opinion of others (especially during the RADAR Controller training portion)."

Sharing negative comments about the training performance of a developmental with his or her training team and coworkers will have an impact on how others perceive the developmental. Furthermore, based on the fundamental attribution error, it is likely that the comments made about the developmental will relate to internal, dispositional characteristics of the developmental, rather than environmental factors which also may have affected the developmental's performance (Nisbett & Ross, 1980). The result may be that others come to believe that the developmental does not have what it takes to be an air traffic controller, which could alter how they interact with the developmental in the future. Negative comments could also have an impact on developmentals' persistence in the face of failure. Persistence is more likely if failure is attributed to factors over which the developmental has control, such as effort (Weiner, 1985).

In regard to Training Teams, developmentals believed many of the instructors and trainers needed additional guidance on how to properly train and treat controllers in field qualification

training, specifically during the OJT portion of training. Many commented on the difference in expectations between trainers, stating that many trainers expected traffic to be controlled their way; therefore, leading to inconsistency in what developmentals were told they needed to do in order to succeed. Multiple developmentals recounted having various trainers throughout OJT, with different perspectives on how and what to teach.

Furthermore, developmentals from both groups indicated their coworkers and training teams were a part of what they liked least about field qualification training, and stated differences in trainer expectations and unfair treatment provided additional stress during training. Both groups referenced a "good ol' boy" type of work environment when discussing Facility Culture; wherein factors such as personality or a developmental's ATC background may have more influence on the developmental's chance of success than ability or performance. Therefore, interpersonal conflict may be affecting trainer attributions for developmental behavior and lead to unfair treatment and an increase in developmental failures. This potentially explains the noticeable differences in perceptions of OJTI effectiveness, descriptions of facility culture, and satisfaction ratings related to trainers and instructors between the Successful and Transfer Lower group.

For instance, when asked to rate the various factors that contributed to their training outcome, developmentals from the Transfer Lower group indicated items related to Training Teams and Facility Culture as having the greatest impact on their inability to succeed in field qualification training, while giving less weight to items related to their individual performance or ability. Developmentals from the Successful group, however, gave the greatest weight to their own ability/performance in regard to their successes. This is consistent with attribution theory in that failures are most often attributed to external causes and successes to internal factors (Steiner, Dobbins, & Trahan, 1991).

Training Procedures

While identifying components related to Training Procedures, many developmentals commented on the need for more consistency, standardization, and transparency in regard to field qualification training. Overall, OJT training was seen as the most helpful for preparing developmentals to control air traffic, although many developmentals experienced difficulty with lack of consistency in approach and standardization of expectations between OJTIs. Both groups believed they received helpful feedback during OJT even though the Transfer Lower group provided a lower rating for this item. Given the ratings, it seems developmentals believed they were utilizing the feedback they received from instructors and trainers.

Furthermore, compared to OJT, developmentals from both groups expressed less satisfaction with classroom, CBI training, and laboratory training, suggesting the lack of realism during this portion of training leads to boredom and inefficient learning. Some developmentals identified outdated training materials to be a barrier to success, stating many of the training materials used during the classroom, CBI, and laboratory portion of training needed an update in order to be useful.

Throughout the questionnaire, developmentals in both groups commented on the general lack of standardization across various training processes. Some developmentals believed there were unfair and disorganized procedures regarding the hours necessary to certify, and a lack of specific benchmarks and expectations for moving forward in training. In addition, developmentals believed their facilities were understaffed in regard to training teams, and the lack of staffing led to inconsistency in their training. In some cases, developmentals remarked they would go days without training due to understaffing. For other developmentals, gaps in training were predominantly due to seasonal traffic. Regardless, not all developmentals seem to be receiving the same amount of attention and access to training resources. For instance, only 25% of both groups received access to simulation training with their OJTI before working live traffic, although most developmentals believed receiving simulation training with their OJTI would benefit them.

Some questions were asked only of the Transfer lower group, and a portion of responses to these items were in relation to Training Procedures and the overall transfer process. The need for transparency between NEST personnel, management, and developmentals was frequently mentioned by developmentals when commenting on the transfer process. Some developmentals felt their voices went unheard when it came to the NEST decision process, as well as feeling as if they were not well informed about the process. Additionally, some felt they needed more time to evaluate placement choices in order to make more clearly informed decisions about which facility may suit them best. Finally, developmentals believed both the decision and placement process should be more individualized, allowing developmentals to pick the facility and type of traffic they would like to control.

Individual Factors

***Individual well-being*.** Myriad factors were related to Individual Well-Being, as seen in developmental responses. Developmentals described issues regarding lack of family support or presence, low pay, and lifestyle stressors such as commuting and childcare to be factors that added difficulty to their experiences in field qualification training. While these factors are external to the training program and unstable in nature, facilities may make efforts to mitigate the effects of stress on developmentals.

In addition to stressors external to the training environment, comments from both groups identified various training circumstances as major sources of stress during training. Developmentals from both groups recounted how inefficient training practices, poor work attitudes of coworkers and training personnel, and adverse relationships with their training teams added unnecessary stress to the work environment and, in some cases, led to negative effects on developmentals' physical health and turmoil within their personal lives. Additionally, while both groups experienced high levels of stress throughout training, developmentals in the Transfer Lower group may have experienced more stress in relation to their training teams. For example, some developmentals discussed the unfair advantages and treatment certain coworkers received from their trainers. Thus, mitigating stress related to Training Teams, Training Procedures, and Facility Culture may lead to more positive responses with regard to Individual Well-Being.

***Individual ability*.** Finally, Individual Ability was addressed quite differently between the Transfer Lower and Successful groups. For instance, when asked what factors contribute to successfully completing field qualification training, many developmentals from the Transfer Lower group indicated items related to Facility Culture. Overall, developmentals in this group believed that Individual Ability was important to becoming an air traffic controller, but that having a "hostile-free" work environment that fosters positivity and support was necessary in order to succeed. Developmentals from the Successful group, however, most frequently commented on factors related to Individual Ability and Individual Well-Being, indicating hard work, effort, personal ability, and mental stability in relation to stress were paramount to becoming a successful controller.

How Would Participants Improve Training?

Training Teams and Facility Culture

In regard to Training Teams, both groups reported similar experiences. For instance, both groups mentioned the need for consistency and less subjectivity during the training process. Specifically, multiple developmentals mentioned the disparate techniques being used by trainers and how a developmental's success in training may be tied to an individual instructor's belief of proper technique versus an adequate performance. For instance, one developmental explained, "I had two trainers who did things completely opposite and would argue about it while I was trying to train. Example: I'm training on approach and the other trainer is working final and arguing from there." To mitigate a portion of this issue, developmentals recommended assigning the same training team personnel to a developmental throughout the entirety of their training process. This way, developmentals might be able to focus on developing their expertise without receiving contrasting ideas on what may be the "right way" to control traffic. Additionally, some developmentals believed their OJT staff needed additional training on how to guide adult learners appropriately versus using the aggressive techniques currently being employed by some OJTIs. In particular, one developmental from the Successful group commented, "I think that there needs to be more emphasis on training the OJTIs on how to train, how to be consistent, and proper ways to constructively criticize."

Many comments related to Training Teams carried into Facility Culture. For instance, many developmentals believed their training team experiences negatively affected their work environments. Noticing preferential treatment of more experienced developmentals, or those with prior ATC education, many trainees believed this type of unfair advantage needed to be eliminated from the workplace. Additionally, a majority of developmentals believed the teaching strategies of their training teams were hostile and antagonistic and recommended a change in training style that fostered confidence building and positivity. Many stated their facility's culture promoted an environment that was not supportive of new trainees, and preconceptions of developmentals led to poor treatment and the assumption of failure from fellow CPCs and training teams alike. Finally, multiple developmentals believed there needed to be a form of accountability for their training

teams to prevent preferential treatment, personal biases, and interpersonal conflict within the training areas.

Training Procedures

Many developmentals thought the OJT process should be standardized through the introduction of guidelines and benchmarks in order to assure everyone is following the same protocol and receiving the same type of training for certification. Trainees believed expectations were varied from trainer to trainer, which led to differing levels of ability and achievement for developmentals who certified. It was thought standardizing the training process would prevent "pushing people through" as well as assuring each developmental reached a certain level of ability before moving forward. For example, one developmental from the Transfer Lower group added, "Training needs to focus on weakness and building success on repetitions before moving to the next level." Additionally, developmentals believed these goals needed to be communicated thoroughly by their management staff, both prior to and during the training process, so trainees understood exactly what they needed to achieve in order to successfully certify.

Multiple comments suggested more carefully matching developmentals to instructors based on factors such as training style or personality. As seen in one developmental's comment:

> "Have supervisors pay close attention to the developmental training style and adjust their training team accordingly. I have had some trainers that were ineffective due to the style in which they trained. I think positive feedback and confidence building helped me the most and I responded best when I was grouped with the type of trainers that had that style. Finding the right OJTI for the individual is the single most important step in successful training."

Additionally, some developmentals believed allowing the trainee to have a say in their training team assignments might also alleviate conflict and mismatched personalities within their training teams. For instance, multiple developmentals mentioned requesting a change in training teams after experiencing difficulties with their OJTIs, only to have their requests denied.

Further recommendations focused on classroom, CBI, and laboratory training, the use of time during training, and the facility placement process. Developmentals suggested decreasing the amount of time spent in the classroom, and increasing the amount of time for laboratory and simulation training. This was especially so for those developmentals that did not receive the opportunity to work with their OJTI in a simulation before training on live traffic. Developmentals believed more opportunities for simulation practice, with updated materials, would better prepare them for OJT. Additionally, developmentals believed there was too much down time and delay between training periods. To alleviate this issue, developmentals requested more training staff or the use of additional learning resources during times of training delay.

Finally, developmentals across both groups recommended allowing trainees to pick both the type and location of the facility to which they are assigned. Some believed this would decrease the number of employees transferring after certification, and also the number of training failures due to placement in a facility outside their expertise or level of ability.

Individual Factors

Individual well-being. There were few comments directly related to Individual Well-Being, as most comments in regard to Training Teams, Facility Culture, and Training Procedures were aimed at relieving stress and improving training circumstances for developmental controllers. Additionally, the comments that were tied to this theme mirrored those from Training Procedures wherein developmentals believed allowing trainees to pick their facilities and remain closer to home would improve factors related to health and wellness. However, some developmentals thought a more stable training schedule would mitigate issues related to stress and overexertion. Developmentals believed that a more individualized process that considered the developmental as a whole (i.e. education, work history, family, location of residence, etc.) would allow for a better quality of life for many developmentals during training.

Individual Ability. Comments concerning Individual Ability were closely related to Training Procedures. However, some developmentals from the Successful group believed facilities should recruit individuals with prior experience or education in ATC before selecting developmentals from "off the street." However, on one occasion a developmental suggested finding individuals with a work history founded in multi-tasking, and not necessarily just those with ATC relations.

Recommendations

Based on the information provided by developmentals recently engaged in field qualification training at an ATC facility and a review of selected, relevant literature, we are recommending five key areas for intervention. The areas are (1) development of training standards for OJT, (2) use of simulation training for developmentals with their OJTIs prior to OJT, (3) implementation of methods to improve interpersonal dynamics and facility culture, (4) training for developmentals in stress management, and (5) greater involvement of developmentals in option selection and facility placement. Each area is briefly described below.

Development of Training Standards for OJT

Based upon the frequency of developmental comments concerned with inconsistency among training operations, we recommend that the FAA develop performance standards for OJT for use by both the developmental and the OJTI. The standards should be designed to supplement the evaluation report (3120.4-25) and the job subtasks and indicators checklist currently used to assess developmental performance (FAA, 2015). Although the evaluation report, which includes a listing of job tasks, job subtasks, and indicators of those tasks, explains what developmentals must master to reach certification, developmentals' comments seem to indicate they need more information on the specific behaviors they must be able to perform and what level of proficiency they are expected to meet at each stage of training. They want the OJTIs to use these standards to guide training and provide feedback on their performance. This suggestion is supported by the fact that many in the Transfer Lower group indicated (see question A26) and made comments that they believed they were progressing well in training at the time of their termination. Furthermore, developmentals in both groups commented on perceived variability in the evaluation of developmentals. An effort to

develop and use performance standards in conjunction with the evaluation report is in progress at the New York TRACON (N90) facility. It is possible that the effort at N90 could be revised for implementation across ATC facilities.

Use of Simulation Training for Developmentals with their OJTIs Prior to OJT

As part of any potential initiatives to standardize field qualification training, we further recommend assuring each developmental has the opportunity to work with one of the OJTIs in a simulation setting before working live traffic. Only a quarter of each group had the opportunity to work in a simulation with a member of their training team prior to controlling live traffic, although a majority of developmentals believed this would be helpful. Additionally, many developmentals from the Transfer Lower group commented on not being properly prepared before beginning the OJT portion of training, and it is possible the opportunity to practice in a simulation environment alongside their OJTI will improve performances of those developmentals who may have been unsuccessful otherwise. For example, one developmental commenting on the experience during OJT stated, "Before going to work live traffic, it is important to get the student ready. I did not feel prepared when I first worked traffic. My facility could have aided me much better prior to OJT."

Additionally, simulation training alongside an OJTI prior to working live traffic may help developmentals to become more confident in their performance during OJT wherein displaying confidence has been found to be an important component of successful training (Owen, 2009). It is understood that access to materials and resources varies from facility to facility; however, any effort to provide developmentals with simulation training alongside their training personnel prior to OJT is recommended. It is also possible that interacting with OJTIs in simulations prior to working live traffic could facilitate development of a positive relationship between the OJTI and the developmental that would be conducive for learning. Furthermore, in the event facilities are unable to provide additional simulation training alongside OJTIs, making an effort to update and improve current CBI materials may promote more positive reactions from developmentals, as well as better prepare them prior to OJT.

Improving Interpersonal Dynamics and Facility Culture

Many developmentals believed there needed to be more individualized procedures surrounding the selection of the training team such as an emphasis on matching individual learning styles (ILS). Typically, the term *learning styles* refers to the belief that individuals learn in various ways (Pasher, McDaniel, Rohrer, & Bjork, 2009), such that there may be *visual* learners who may benefit more from picture-driven presentations and hands-on methods, or *verbal* learners who may excel in lecture-type situations and talking material through. However, research in the field of ILS has not provided sufficient evidence that instructing an individual in their preferred style of learning has a significant effect on learning outcome (Pasher, McDaniel, Rohrer, & Bjork, 2009). However, recent research has shown that individuals achieve greater learning outcomes when presented information in various forms (Scudellari, 2015).

While developmentals often mentioned ILS in their comments, they were primarily referring to the interpersonal dynamic between the trainer and developmental. The interpersonal dynamic between trainers and developmentals appeared to be a primary source of stress and difficulty for many developmentals. Comments from both groups mentioned the negative effects brought on from being taught by OJTIs using disparate training techniques, having poor relationships with training personnel and, in some cases, a facility culture driven by hostility. For instance, one developmental stated "I expected the job to be difficult, but having to deal with the controllers i.e., their 'Good Ol' Boy' Club 'trainees are not real people' mentality was a challenge I did not expect." Comments such as this were made by developmentals in both the Transfer Lower and Successful groups.

To combat such issues, facilities might make an effort to provide additional training for OJTIs, and possibly instructors, concerning training techniques, effective forms of feedback, how personal biases effect the workplace (e.g., the fundamental attribution error), and how these biases can be prevented in training. While the current training for OJTIs provides information necessary for conducting OJT (FAA, 2015), given the importance of the role of the OJTI in the success of the developmental, additional preparation may be warranted. In a report prepared for the FAA, Thomas (2015) identified a number of best practices in professional skill development for the OJTI. In her review, she highlighted the training culture and the importance of OJTI attitudes in OJT.

It is possible that the best practices recommended by Thomas (2015), which are focused on a single high-level facility, may have relevance across facilities, given that many of the comments made by developmentals in both groups related directly to the attitudes of OJTIs. For instance, one developmental from the Transfer Lower group reported, "They are heavily technique based. No relationships were established. They use intimidation, public ridicule, embarrassment, gossip & yelling or condescension." Comments such as this were corroborated by developmentals from the Successful group wherein one developmental describing OJT stated, "A majority of this depended on who you trained with. There were many great, supportive people along the way, and then there were the grumpy, unsupportive, rude people who didn't care if you washed out or signed off."

In the workplace study by Owen (2009), she found that "ATC instructors need to be encouraged to examine critically their knowledge and beliefs about trainees and their learning. Instructors also need support as they learn new instructional approaches and change their existing understandings in the emerging community of practice" (p. 491). She suggested that this be done by having current OJTIs evaluate their beliefs against those of controllers who hold opposing beliefs as a way to help controllers consider contrasting training models (Owen, 2009); helping refashion trainer beliefs that there is "one right way" to control traffic, as stated in developmentals' comments. Furthermore, such experiences may prove to be more effective than standard training models providing information on instructional strategies.

The same form of learning experiences may be necessary to assist OJTIs and other instructors in identifying their own personal biases when evaluating a diverse group of developmental controllers, and recognizing how these biases affect their attitudes toward developmentals, as well

as the instructional strategies they choose to employ. As many developmentals raised concern over the aggressive and berating training tactics used by multiple OJTIs and instructors, it will be important for incoming developmentals to be placed with training teams that recognize and value effort when evaluating and providing criticism on their abilities. Additionally, while it is recognized there are certain procedures around the selection of who becomes an OJTI, it may become necessary to place more stringent guidelines around the OJTI selection process to ensure proper training tactics and more positive trainer-trainee relationships in an effort to increase the number of successful developmentals.

Training for Developmentals in Stress Management

Developmentals from both groups recounted experiencing increased levels of stress during field qualification training and, in some cases, this stress had negative effects on trainees' physiological, emotional, and mental health. We may assume that due to the nature of the work stress will remain a part of the field qualification training experience; therefore, we recommend providing developmentals with some form of stress management training at the commencement of their program.

This training should identify internal and external stressors common among developmentals in field qualification training and outline coping mechanisms and resources developmentals may use in order to combat them appropriately. Coping mechanisms range from physical activity, deep breathing, and relaxation techniques to self-talk and access to outside resources. Additionally, the training should outline the consequences of stress in order to call attention to the importance of successful stress management for optimal performance in field qualification training. Research is needed to determine the best strategy for implementing the training that has the most benefit to the developmental.

Greater Involvement by Developmentals in Option Selection and Facility Placement

Our final recommendation is to consider the perspective of the developmental in option selection and facility placement. First, we recognize that there are a number of factors that influence both option selection and facility placement decisions of incoming controllers. However, there may be an opportunity to reconsider certain components of the process. For example, one developmental commented, "Hires from the military/experienced bid should be placed at a facility where they have the most experience. Otherwise, the new hire should have the option to attend the Academy. I had only carrier and military en route experience and was given a list of all Level 12 TRACONs to choose from." Thus, in instances where controllers hired with prior military experience have experience in only one type of ATC facility, placing the developmental in an option/facility in line with their experience may prevent a situation in which the developmental washes out due to inexperience. As one developmental recommended, "Place controllers with terminal experience in terminal."

Therefore, when considering potential changes to option selection, factors to be considered may include military and prior ATC background. In terms of facility location, we understand it

may not be reasonable to allow developmentals full freedom in picking their field facilities based on the number of vacancies that must be filled at certain facilities. However, allowing developmentals more time to investigate their available choice of facilities may ease certain stress factors many developmentals face such as relocating families, finding appropriate housing, and financial planning. This is especially true for developmentals in the midst of the transfer process wherein one developmental from the Transfer Lower group stated

> "Overall, I think the process worked fine. My only change would be allowing the developmental controllers more time to make a decision for figuring out what facility they would like to transfer to. In my opinion, 7 days is not enough. Maybe 2-3 weeks. This way it allows the controller to visit the prospective facilities and get a feel for the surrounding area since he or she would be living there."

Although some developmentals reported stress and hardship due to option and facility placements outside their preferred assignments and location, it is possible that changes in other areas might mitigate these effects. For example, making efforts to improve the trainer-trainee relationship or having a welcoming committee at the new facility that provides information and support to the new developmental or transfer may help controllers feel comfortable in a new environment, even in instances where they must relocate to unfamiliar locations. Additionally, by standardizing procedures, it is likely fewer developmentals will view the field qualification training process as unfair. Finally, training in stress management should help provide developmentals with coping mechanisms especially in instances where they are separated from friends and family.

CONCLUSION

The recommendations made to improve field qualification training and ultimately increase the number of developmentals achieving CPC status were derived from information provided by 183 developmentals who had just completed training either unsuccessfully (59) or successfully (124). We derived our recommendations from the responses and comments of our sample, and, in many cases, by other research efforts in ATC (e.g., Owen, 2009; Thomas, 2015). Clearly, however, our research would benefit from input from additional developmentals as well as from facility training team members, including facility managers, OJTIs, and NATCA representatives. We believe this effort represents a first step in understanding the field qualification training process from the perspective of the developmental. Given our small, restricted sample, it may be necessary to gather additional information to expand on and refine the areas of concern identified in this study, however, the consistency of the observations leads us to conclude that the recommendations should be discussed among the ATC training community and strategies for their implementation should be considered.

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APPENDIX A

Developmental Controller Questionnaire – Successful

This questionnaire is to help us better understand the reasons some developmental controllers succeed and some fail in training at a first facility. To do so, we need input from both successful and unsuccessful developmental controllers about experiences at their first facility. You were selected to participate in this research because you recently made CPC at your first facility.

There are five sections (Entry, Training, Performance, Culture, and Feedback) addressing your previous experiences as a developmental controller, one section (Next Phase) assessing your expectations as you begin your career as a controller, and four demographic items.

Please do not put any identifying information on this questionnaire. Your responses are completely anonymous. Our aim is to use this information to improve the selection, placement, and training of air traffic controllers. Thank you!

ENTRY

1. In which type of facility were you successful?
   - ❑ En route
   - ❑ Small tower (Level 4-6)
   - ❑ Medium tower (Level 7-9)
   - ❑ Large tower (Level 10-12)
   - ❑ Combined tower/TRACON
   - ❑ TRACON only
   - ❑ CERAP

2. How long were you in training at your facility before becoming a CPC?
   - ❑ Less than 6 months
   - ❑ 6-12 months
   - ❑ 13-18 months
   - ❑ 19-24 months
   - ❑ 2-3 years
   - ❑ 4 or more years

3. Was this your first facility?
   - ❑ Yes ❑ No

4. Which type of controller did you want to be when you originally applied for a job as an FAA controller?
   - ❑ En route ❑ Tower ❑ Either

5. Was your first assigned facility in one of the states and/or the service area you indicated as a preference on your application?
   - ❑ Yes ❑ No

6. During the selection process, did you have a good understanding of what your job would be like as a controller?

❑	❑	❑	❑	❑	❑	❑
1=Definitely not	2	3	4=Somewhat	5	6	7=Definitely yes

7. What work-related factors did you find most difficult to handle during training? (Mark all that apply.)
   - ❑ The work itself
   - ❑ The work hours/schedule/shiftwork
   - ❑ My co-workers
   - ❑ My trainer(s)/instructor(s)
   - ❑ My managers
   - ❑ The facility
   - ❑ Other (Please list below.)

   If *Other* please list.

   _____

   _____

TRAINING

8. What external factors did you find most difficult to handle during training? (Mark all that apply.)
   - ❑ Family
   - ❑ Childcare
   - ❑ Spouse
   - ❑ Cost of living
   - ❑ Housing
   - ❑ Schools
   - ❑ Location (city/state)
   - ❑ Commute
   - ❑ Other (Please list below.)

If *Other* please list.

9. How do you believe your immediate front-line manager felt about your success in training?

❑	❑	❑	❑	❑	❑	❑
1=Unhappy	2	3	4=Neutral	5	6	7=Happy

Do you have any additional comments on your response?

10. Did you feel your training progressed at a reasonable rate?

❑	❑	❑	❑	❑	❑	❑
1=Definitely Not	2	3	4=Somewhat	5	6	7=Definitely Yes

11. Was your training interrupted for more than 30 days?

❑ Yes ❑ No

If *Yes* please explain why it was interrupted (e.g., medical, too many trainees, etc.).

12. To what extent did each of the following <u>prepare you to control traffic</u>?

	Not at all 1	2	3	Moderate extent 4	5	6	Very great extent 7
a. Classroom training	❑	❑	❑	❑	❑	❑	❑
b. Laboratory training	❑	❑	❑	❑	❑	❑	❑
c. CBI training	❑	❑	❑	❑	❑	❑	❑
d. On-the-job training (OJT)	❑	❑	❑	❑	❑	❑	❑
e. Training team (ATM, FLM, Training Manager, Instructors)	❑	❑	❑	❑	❑	❑	❑

Do you have any additional comments on your responses?

13. How satisfied were you with each of the following?

	Very dissatisfied 1	2	3	Somewhat satisfied 4	5	6	Very satisfied 7
a. Classroom training	❑	❑	❑	❑	❑	❑	❑
b. Laboratory training	❑	❑	❑	❑	❑	❑	❑
c. CBI training	❑	❑	❑	❑	❑	❑	❑
d. On-the-job training (OJT)	❑	❑	❑	❑	❑	❑	❑
e. Training team (ATM, FLM, Training Manager, Instructors)	❑	❑	❑	❑	❑	❑	❑

Developmental Controller Questionnaire – Successful

14. Overall what was the best part of the classroom, laboratory, and CBI training at your facility? (Mark all that apply.)

- ❑ Organizational/facility culture
- ❑ Opportunity to practice/learn new skills
- ❑ Classroom/laboratory instructors
- ❑ Scenario/problem design/realism/accuracy
- ❑ Completeness/quality of training
- ❑ Consistency/subjectivity of instructors
- ❑ Managerial/training policies
- ❑ Slow training pace
- ❑ Fast training pace
- ❑ Other (Please list below.)

If *Other* please list.

_____

_____

15. Overall what was the best part of OJT at your facility? (Mark all that apply.)

- ❑ Organizational/facility culture
- ❑ Opportunity to practice/learn new skills
- ❑ OJT Instructors/Supervisor/CPCs
- ❑ Completeness/quality of training
- ❑ Consistency/subjectivity of instructors
- ❑ Managerial/training policies
- ❑ Slow training pace
- ❑ Fast training pace
- ❑ Working live traffic
- ❑ Other (Please list below.)

If *Other* please list.

_____

_____

16. Overall what was the worst part of the classroom, laboratory, and CBI training at your facility? (Mark all that apply.)

- ❑ Organizational/facility culture
- ❑ Opportunity to practice/learn new skills
- ❑ Classroom/laboratory instructors
- ❑ Scenario/problem design/realism/accuracy
- ❑ Completeness/quality of training
- ❑ Consistency/subjectivity of instructors
- ❑ Managerial/training policies
- ❑ Slow training pace
- ❑ Fast training pace
- ❑ Other (Please list below.)

If *Other* please list.

_____

_____

17. Overall what was the worst part of OJT at your facility? (Mark all that apply.)

- ❑ Organizational/facility culture
- ❑ Opportunity to practice/learn new skills
- ❑ OJT Instructors/Supervisor/CPCs
- ❑ Completeness/quality of training
- ❑ Consistency/subjectivity of instructors
- ❑ Managerial/training policies
- ❑ Slow training pace
- ❑ Fast training pace
- ❑ Working live traffic
- ❑ Other (Please list below.)

If *Other* please list.

_____

_____

18. Did you work with your OJTI in a simulation prior to controlling live traffic?

❑ Yes ❑ No

If *Yes*, did you find it helpful?

❑ Yes ❑ No

19. If not, would you have found it helpful to work with your OJTI in a simulation prior to controlling live traffic?

❑	❑	❑	❑	❑	❑	❑
1=Not at all	2	3	4=Moderate extent	5	6	7=Very great extent

20. To what extent did the feedback you received during your training help you to improve your performance?

❑	❑	❑	❑	❑	❑	❑
1=Not at all	2	3	4=Moderate extent	5	6	7=Very great extent

21. Do you believe that the training process needs to be improved?

❑	❑	❑	❑	❑	❑	❑
1=Definitely not	2	3	4=Somewhat	5	6	7=Definitely yes

Do you have any recommendations for improving the training process?

_____

_____

_____

_____

22. During training, did you experience any changes to your overall health/well-being?

❑	❑	❑	❑	❑	❑	❑
1=Much worse	2	3	4=No change	5	6	7=Much better

Do you have any additional comments on your response?

_____

_____

_____

_____

23. During training, did you experience any changes to your overall feelings of stress?

❑	❑	❑	❑	❑	❑	❑
1=Much greater	2	3	4=No change	5	6	7=Much less

Do you have any additional comments on your response?

_____

_____

_____

_____

PERFORMANCE

24. Is the job of controller at your facility what you expected?

❑	❑	❑	❑	❑	❑	❑
1=Definitely not	2	3	4=Somewhat	5	6	7=Definitely yes

Do you have any additional comments on your response?

_____

_____

_____

_____

25. How difficult did you find the following tasks while in training?

	Not at all			Somewhat difficult			Very difficult	N/A
	1	2	3	4	5	6	7	N/A
a. Separating aircraft using nonradar procedures.	❑	❑	❑	❑	❑	❑	❑	❑
b. Separating aircraft using radar procedures.	❑	❑	❑	❑	❑	❑	❑	❑
c. Coordinating with other controllers.	❑	❑	❑	❑	❑	❑	❑	❑

d. Communicating with pilots.	❑	❑	❑	❑	❑	❑	❑	❑
e. Performing multiple tasks at the same time.	❑	❑	❑	❑	❑	❑	❑	❑
f. Remembering everything that needs to be done.	❑	❑	❑	❑	❑	❑	❑	❑

26. Please list any other tasks that were especially difficult for you to learn.

CULTURE While in Training

27. What was the predominant organizational culture at your facility? (Mark all that apply.)

❑ Friendly
❑ Competitive
❑ Supportive
❑ Unsupportive/apathetic
❑ Hostile
❑ Other (Please list below.)

If *Other* please list.

28. Did any local organizational policies or procedures at your facility make your job more difficult as a developmental controller?

❑	❑	❑	❑	❑	❑	❑
1=Definitely not	2	3	4=Somewhat	5	6	7=Definitely yes

Do you have any additional comments on your response?

29. Did any national organizational policies or procedures at your facility make your job more difficult as a developmental controller?

❑	❑	❑	❑	❑	❑	❑
1=Definitely not	2	3	4=Somewhat	5	6	7=Definitely yes

Do you have any additional comments on your response?

30. Was the culture/environment at your facility conducive for success?

❑	❑	❑	❑	❑	❑	❑
1=Definitely not	2	3	4=Somewhat	5	6	7=Definitely yes

Please explain the reasoning behind your rating.

31. Were other controllers at your facility supportive?

❑	❑	❑	❑	❑	❑	❑
1=Definitely not	2	3	4=Somewhat	5	6	7=Definitely yes

32. To what extent did the following factors contribute to your success in training?

	Not at all			Moderate Extent			Very great extent	N/A
	1	2	3	4	5	6	7	N/A
a. Individual ability/performance	❑	❑	❑	❑	❑	❑	❑	❑
b. Local training policies and procedures	❑	❑	❑	❑	❑	❑	❑	❑
c. National training policies and procedures	❑	❑	❑	❑	❑	❑	❑	❑
d. Training instructors	❑	❑	❑	❑	❑	❑	❑	❑
e. Training methods	❑	❑	❑	❑	❑	❑	❑	❑
f. Organizational/facility culture	❑	❑	❑	❑	❑	❑	❑	❑
g. External factors (e.g., family, location, etc.)	❑	❑	❑	❑	❑	❑	❑	❑

Were there any other factors that contributed to your training outcome?

_____

_____

_____

_____

33. Were you treated fairly while in training?

❑	❑	❑	❑	❑	❑	❑
1=Definitely not	2	3	4=Somewhat	5	6	7=Definitely yes

If not, how were you treated unfairly?

_____

_____

_____

_____

FEEDBACK

34. What could have been done to help you succeed more easily as a developmental controller at your facility? (Mark all that apply.)

- ❑ Nothing
- ❑ More training
- ❑ Better training
- ❑ Better OJT instructor(s)
- ❑ Better managers
- ❑ More feedback
- ❑ More supportive environment
- ❑ Other (Please list below.)

If *Other* please list.

_____

_____

35. What do you like best about controlling air traffic? (Mark all that apply.)

- ❑ Controlling traffic
- ❑ Pay
- ❑ Work hours/schedule/shiftwork
- ❑ Status
- ❑ Excitement /challenge
- ❑ Physical environment
- ❑ Organizational culture
- ❑ Managerial policies
- ❑ Co-workers
- ❑ Trainer(s)/Instructor(s)
- ❑ Other (Please list below.)

If *Other* please list.

_____

_____

Developmental Controller Questionnaire – Successful

36. What do you like least about controlling air traffic? (Mark all that apply.)

❑ Controlling traffic	❑ Excitement/challenge	❑ Co-workers
❑ Pay	❑ Physical environment	❑ Trainer(s)/Instructor(s)
❑ Work hours/schedule/shiftwork	❑ Organizational culture	❑ Other (Please list below.)
❑ Status	❑ Managerial policies	

If *Other* please list.

37. How satisfied were you with the quality of the supervision you received at your facility during training?

❑	❑	❑	❑	❑	❑	❑
1=Very dissatisfied	2	3	4=Somewhat satisfied	5	6	7=Very satisfied

38. What was most satisfying about your work as a developmental controller?

39. What was least satisfying about your work as a developmental controller?

40. Based on your experience, what do you think it takes to succeed as a controller?

41. Is there any cognitive or personal attribute that we could look for in new applicants that you think would have helped you succeed in controller training?

NEXT PHASE

42. Are you looking forward to controlling traffic at your facility?

❑	❑	❑	❑	❑	❑	❑
1=Definitely Not	2	3	4=Somewhat	5	6	7=Definitely Yes

43. Would you recommend air traffic control as a career choice to your family and friends?

❑	❑	❑	❑	❑	❑	❑
1=Definitely Not	2	3	4=Somewhat	5	6	7=Definitely Yes

44. Do you have any other comments that would help us improve selection, placement, or training of air traffic controllers?

_____

_____

_____

_____

45. How long do you intend to stay at your current facility?
- ❑ Less than 1 year
- ❑ 1-5 years
- ❑ More than 5 years

DEMOGRAPHICS (Optional)

46. What is your age? _____ Yrs.

47. Are you:
- ❑ Male
- ❑ Female

48. What is your race/national origin? (Mark all that apply.)
- ❑ American Indian or Alaskan Native
- ❑ Asian or Pacific Islander
- ❑ Black or African American
- ❑ Hispanic
- ❑ White

Thank you!

Developmental Controller Questionnaire – Termination

This questionnaire is to help us better understand the reasons developmental controllers fail to succeed in field training. We understand that this is a difficult time for you and are sorry that your career as a controller at the FAA is not going to work out. We are asking you to answer these questions so that others do not have to go through the same thing.

There are six sections (Entry, Termination, Training, Performance, Culture, and Feedback) addressing your previous experiences as a developmental controller, one section (Next Phase) that asks about your overall perception of air traffic control as a profession and your future plans, and four demographic items.

Please do not put any identifying information on this questionnaire. Your responses are completely anonymous. Our aim is to use this information to improve the selection, placement, and training of air traffic controllers. Thank you!

ENTRY

1. Which type of facility were you terminated from?
   - ❑ En route
   - ❑ Small tower (Level 4-6)
   - ❑ Medium tower (Level 7-9)
   - ❑ Large tower (Level 10-12)
   - ❑ Combined tower/TRACON
   - ❑ TRACON only
   - ❑ CERAP

2. How long were you in training at your facility before being terminated?
   - ❑ Less than 6 months
   - ❑ 6-12 months
   - ❑ 13-18 months
   - ❑ 19-24 months
   - ❑ 2-3 years
   - ❑ 4 or more years

3. Which type of controller did you want to be when you originally applied for a job as an FAA controller?
   - ❑ En route
   - ❑ Tower/Terminal
   - ❑ Either

4. Was your first assigned facility in one of the states and/or the service area you indicated as a preference on your application?
   - ❑ Yes
   - ❑ No

5. During the selection process, did you have a good understanding of what your job would be like as a controller?

❑	❑	❑	❑	❑	❑	❑
1=Definitely not	2	3	4=Somewhat	5	6	7=Definitely yes

TERMINATION

6. Were there work-related reasons for termination of your training? (Mark all that apply.)
   - ❑ Could not do the work
   - ❑ Did not like the work
   - ❑ Did not like the work hours/schedule/shiftwork
   - ❑ Did not like my co-workers
   - ❑ Did not like my trainer(s)/instructor(s)
   - ❑ Did not like my managers
   - ❑ Did not like the facility
   - ❑ Other (Please list below.)

   If *Other* please list.

   _____

   _____

7. Were there external circumstances that influenced termination of your training? (Mark all that apply.)
   - ❑ Family
   - ❑ Childcare
   - ❑ Spouse/Significant Other
   - ❑ Cost of living
   - ❑ Housing
   - ❑ Schools
   - ❑ Location (city/state)
   - ❑ Commute
   - ❑ Other (Please list below.)

   If *Other* please list.

   _____

   _____

Developmental Controller Questionnaire – Termination

8. How do you believe your immediate front-line manager felt about your termination?

❑	❑	❑	❑	❑	❑	❑
1=Unhappy	2	3	4=Neutral	5	6	7=Happy

Do you have any additional comments on your response?

_____

_____

_____

_____

9. Did you want to leave training?

❑	❑	❑	❑	❑	❑	❑
1=Definitely Not	2	3	4=Somewhat	5	6	7=Definitely Yes

10. Did you go through the National Employee Services Team (NEST) process?

❑ Yes ❑ No ❑ Don't know

11. During the termination process (Training Review Board, NEST, etc.), were you treated fairly?

❑	❑	❑	❑	❑	❑	❑
1=Definitely Not	2	3	4=Somewhat	5	6	7=Definitely Yes

12. How would you change the process used to terminate developmental controllers (Training Review Board, NEST, etc.)?

_____

_____

_____

_____

TRAINING

13. What stage of training were you in when you left your facility?

a. En route

❑ Flight data
❑ Non-Radar/Radar Associate
❑ Radar
❑ Completed all en route training

b. Tower or TRACON

❑ Flight data
❑ Clearance delivery
❑ Ground control
❑ Local control
❑ Non radar
❑ Radar
❑ Completed all tower/TRACON training

14. On how many Nonradar/Radar Associate positions had you checked out on before your training was terminated?

_____ Number of positions (enter whole number)

15. On how many Radar positions had you checked out on before your training was terminated?

_____ Number of positions (enter whole number)

16. Did you feel you were progressing well in training at your facility?

❑	❑	❑	❑	❑	❑	❑
1=Definitely Not	2	3	4=Somewhat	5	6	7=Definitely Yes

Developmental Controller Questionnaire – Termination

17. Was your training interrupted for more than 30 days?
    ❑ Yes ❑ No

    If yes, please explain why it was interrupted (e.g., medical, too many trainees, etc.).

    _____

    _____

18. To what extent did each of the following prepare you to control traffic?

	Not at all 1	2	3	Moderate extent 4	5	6	Very great extent 7
a. Classroom training	❑	❑	❑	❑	❑	❑	❑
b. Laboratory training	❑	❑	❑	❑	❑	❑	❑
c. CBI training	❑	❑	❑	❑	❑	❑	❑
d. On-the-job training (OJT)	❑	❑	❑	❑	❑	❑	❑
e. Training team (ATM, FLM, Training Manager, Instructors)	❑	❑	❑	❑	❑	❑	❑

    Do you have any additional comments on your responses?

    _____

    _____

    _____

    _____

19. How satisfied were you with each of the following?

	Very dissatisfied 1	2	3	Somewhat satisfied 4	5	6	Very satisfied 7
a. Classroom training	❑	❑	❑	❑	❑	❑	❑
b. Laboratory training	❑	❑	❑	❑	❑	❑	❑
c. CBI training	❑	❑	❑	❑	❑	❑	❑
d. On-the-job training (OJT)	❑	❑	❑	❑	❑	❑	❑
e. Training team (ATM, FLM, Training Manager, Instructors)	❑	❑	❑	❑	❑	❑	❑

20. Overall what was the best part of the classroom, laboratory, and CBI training at your facility? (Mark all that apply.)
    ❑ Organizational/facility culture
    ❑ Opportunity to practice/learn new skills
    ❑ Classroom/laboratory instructors
    ❑ Scenario/problem design/realism/accuracy
    ❑ Completeness/quality of training
    ❑ Consistency/objectivity of instructors
    ❑ Managerial/training policies
    ❑ Slow training pace
    ❑ Fast training pace
    ❑ Other (Please list below.)

    If *Other* please list.

    _____

    _____

21. Overall what was the best part of OJT at your facility? (Mark all that apply.)
    ❑ Organizational/facility culture
    ❑ Opportunity to practice/learn new skills
    ❑ OJT Instructors/Supervisor/CPCs
    ❑ Completeness/quality of training
    ❑ Consistency/objectivity of instructors
    ❑ Managerial/training policies
    ❑ Slow training pace
    ❑ Fast training pace
    ❑ Working live traffic
    ❑ Other (Please list below.)

If *Other* please list.

22. Overall what was the worst part of the classroom, laboratory, and CBI training at your facility? (Mark all that apply.)

- ❑ Organizational/facility culture
- ❑ Opportunity to practice/learn new skills
- ❑ Classroom/laboratory instructors
- ❑ Scenario/problem design/realism/accuracy
- ❑ Completeness/quality of training
- ❑ Inconsistency/subjectivity of instructors
- ❑ Managerial/training policies
- ❑ Slow training pace
- ❑ Fast training pace
- ❑ Other (Please list below.)

If *Other* please list.

23. Overall what was the worst part of OJT at your facility? (Mark all that apply.)

- ❑ Organizational/facility culture
- ❑ Opportunity to practice/learn new skills
- ❑ OJT Instructors/Supervisor/CPCs
- ❑ Completeness/quality of training
- ❑ Inconsistency/subjectivity of instructors
- ❑ Managerial/training policies
- ❑ Slow training pace
- ❑ Fast training pace
- ❑ Working live traffic
- ❑ Other (Please list below.)

If *Other* please list.

24. Did you work with your OJTI in a simulation prior to controlling live traffic?

❑ Yes ❑ No

If *Yes*, did you find it helpful?

❑ Yes ❑ No

25. If not, would you have found it helpful to work with your OJTI in a simulation prior to controlling live traffic?

❑	❑	❑	❑	❑	❑	❑
1=Not at all	2	3	4=Moderate extent	5	6	7=Very great extent

26. To what extent did the feedback you received during your training help you to improve your performance?

❑	❑	❑	❑	❑	❑	❑
1=Not at all	2	3	4=Moderate extent	5	6	7=Very great extent

27. Do you believe that the training process needs to be improved?

❑	❑	❑	❑	❑	❑	❑
1=Definitely not	2	3	4=Somewhat	5	6	7=Definitely yes

28. Do you have any recommendations for improving the training process?

29. During training, did you experience any changes to your overall health/well-being?

❑	❑	❑	❑	❑	❑	❑
1=Much worse	2	3	4=No change	5	6	7=Much better

Do you have any additional comments on your response?

30. During training, did you experience any changes to your overall feelings of stress?

❑	❑	❑	❑	❑	❑	❑
1=Much greater	2	3	4=No change	5	6	7=Much less

Do you have any additional comments on your response?

PERFORMANCE

31. Was the job of controller at your facility what you expected?

❑	❑	❑	❑	❑	❑	❑
1=Definitely not	2	3	4=Somewhat	5	6	7=Definitely yes

Do you have any additional comments on your response?

32. How difficult did you find the following tasks?

	Not at all			Somewhat difficult			Very difficult	N/A
	1	2	3	4	5	6	7	N/A
a. Separating aircraft using nonradar procedures.	❑	❑	❑	❑	❑	❑	❑	❑
b. Separating aircraft using radar procedures.	❑	❑	❑	❑	❑	❑	❑	❑
c. Coordinating with other controllers.	❑	❑	❑	❑	❑	❑	❑	❑
d. Communicating with pilots.	❑	❑	❑	❑	❑	❑	❑	❑
e. Performing multiple tasks at the same time.	❑	❑	❑	❑	❑	❑	❑	❑
f. Remembering everything that needs to be done.	❑	❑	❑	❑	❑	❑	❑	❑

32. Please list any other tasks that were especially difficult for you to learn.

CULTURE

33. What was the predominant organizational culture at your facility? (Mark all that apply.)

- ❑ Friendly
- ❑ Competitive
- ❑ Supportive
- ❑ Unsupportive/apathetic
- ❑ Hostile
- ❑ Other (Please list below.)

If *Other* please list.

34. Did any local organizational policies or procedures at your facility make your job more difficult as a developmental controller?

❑	❑	❑	❑	❑	❑	❑
1=Definitely not	2	3	4=Somewhat	5	6	7=Definitely yes

Do you have any additional comments on your response?

35. Did any national organizational policies or procedures at your facility make your job more difficult as a developmental controller?

❑	❑	❑	❑	❑	❑	❑
1=Definitely not	2	3	4=Somewhat	5	6	7=Definitely yes

Do you have any additional comments on your response?

36. Was the culture/environment at your facility conducive for success?

❑	❑	❑	❑	❑	❑	❑
1=Definitely not	2	3	4=Somewhat	5	6	7=Definitely yes

Please explain the reasoning behind your rating.

37. Were other controllers at your facility supportive?

❑	❑	❑	❑	❑	❑	❑
1=Definitely not	2	3	4=Somewhat	5	6	7=Definitely yes

38. To what extent did the following factors contribute to your termination?

	Not at all			Moderate extent			Very great extent	N/A
	1	2	3	4	5	6	7	N/A
a. Individual ability/performance	❑	❑	❑	❑	❑	❑	❑	❑
b. Local training policies and procedures	❑	❑	❑	❑	❑	❑	❑	❑
c. National training policies and procedures	❑	❑	❑	❑	❑	❑	❑	❑
d. Training instructors	❑	❑	❑	❑	❑	❑	❑	❑
e. Training methods	❑	❑	❑	❑	❑	❑	❑	❑
f. Organizational/facility culture	❑	❑	❑	❑	❑	❑	❑	❑
g. External factors (e.g., family, location, etc.)	❑	❑	❑	❑	❑	❑	❑	❑

Were there any other factors that contributed to your training outcome?

39. Were you treated fairly while in training?

❑	❑	❑	❑	❑	❑	❑
1=Definitely not	2	3	4=Somewhat	5	6	7=Definitely yes

If not, how were you treated unfairly?

FEEDBACK

40. Do you think you could have certified as a controller if you had stayed at your facility? (Mark N/A if CPC before you left.)

❑	❑	❑	❑	❑	❑	❑	❑
1=Definitely not	2	3	4=Maybe	5	6	7=Definitely yes	N/A (CPC)

If so, how much longer do you think it would have taken you to certify?

41. Do you think you could have certified as a controller at a different facility of the same type?

❑	❑	❑	❑	❑	❑	❑
1=Definitely not	2	3	4=Maybe	5	6	7=Definitely yes

If so, how much longer do you think it would have taken you to certify?

- ❑ Less than 1 month
- ❑ 1-3 months
- ❑ 4-6 months
- ❑ 7-9 months
- ❑ 10-12 months
- ❑ 1-2 years
- ❑ More than two years

Do you have any additional comments on your response?

42. What could have been done to help you succeed as a developmental controller at your facility? (Mark all that apply.)

- ❑ Nothing
- ❑ More training
- ❑ Better training
- ❑ Better OJT instructor(s)
- ❑ Better managers
- ❑ More feedback
- ❑ More supportive environment
- ❑ Other (Please list below.)

If *Other* please list.

Developmental Controller Questionnaire – Termination

43. What did you like best about controlling air traffic? (Mark all that apply.)

- ❑ Controlling traffic
- ❑ Pay
- ❑ Work hours/schedule/shiftwork
- ❑ Status
- ❑ Excitement /challenge
- ❑ Physical environment
- ❑ Organizational culture
- ❑ Managerial policies
- ❑ Co-workers
- ❑ Trainer(s)/Instructor(s)
- ❑ Other (Please list below.)

If *Other* please list.

_____

_____

44. What did you like least about controlling air traffic? (Mark all that apply.)

- ❑ Controlling traffic
- ❑ Pay
- ❑ Work hours/schedule/shiftwork
- ❑ Status
- ❑ Excitement/challenge
- ❑ Physical environment
- ❑ Organizational culture
- ❑ Managerial policies
- ❑ Co-workers
- ❑ Trainer(s)/Instructor(s)
- ❑ Other (Please list below.)

If *Other* please list.

_____

_____

45. How satisfied were you with the quality of the supervision you received at your facility?

❑	❑	❑	❑	❑	❑	❑
1=Very dissatisfied	2	3	4=Somewhat satisfied	5	6	7=Very satisfied

46. What was most satisfying about your work as a developmental controller?

_____

_____

_____

_____

47. What was least satisfying about your work as a developmental controller?

_____

_____

_____

_____

48. Based on your experience, what do you think it takes to succeed as a controller?

_____

_____

_____

_____

49. Is there any cognitive or personal attribute that we could look for in new applicants that you think would have helped you succeed in controller training?

_____

_____

_____

_____

NEXT PHASE

50. Would you recommend air traffic control as a career choice to your family and friends?

❑	❑	❑	❑	❑	❑	❑
1=Definitely Not	2	3	4=Somewhat	5	6	7=Definitely Yes

51. Do you have any other comments that would help us improve selection, placement, or training of air traffic controllers?

52. What are your plans for the future?

DEMOGRAPHICS (Optional)

53. What is your age? _____ Yrs.

54. Are you:
- ❑ Male
- ❑ Female

55. What is your race/national origin? (Mark all that apply.)
- ❑ American Indian or Alaskan Native
- ❑ Asian or Pacific Islander
- ❑ Black or African American
- ❑ Hispanic
- ❑ White

Thank you!

Developmental Controller Questionnaire – Transfer

8. Were there external circumstances that drove your request for transfer? (Mark all that apply.)

❑ Family	❑ Housing	❑ Other (Please list below.)
❑ Childcare	❑ Schools	❑ None
❑ Spouse	❑ Location (city/state)	
❑ Cost of living	❑ Commute	

If *Other* please list.

9. How do you believe your immediate front-line manager felt about your transfer?

❑	❑	❑	❑	❑	❑	❑
1=Unhappy	2	3	4=Neutral	5	6	7=Happy

Do you have any additional comments on your response?

10. Did you want to leave training?

❑	❑	❑	❑	❑	❑	❑
1=Definitely Not	2	3	4=Somewhat	5	6	7=Definitely Yes

11. Did you go through the National Employee Services Team (NEST) process?

❑ Yes ❑ No ❑ Don't know

12. During the transfer process (Training Review Board, NEST, etc.), were you treated fairly?

❑	❑	❑	❑	❑	❑	❑
1=Definitely Not	2	3	4=Somewhat	5	6	7=Definitely Yes

13. How would you change the process used to transfer developmental controllers (Training Review Board, NEST, etc.)?

TRAINING

14. Were you CPC before you left your facility?

❑ Yes (Skip to item 18) ❑ No

Developmental Controller Questionnaire – Transfer

15. What stage of training were you in when you left your facility?

a. **En route**

- ❑ Flight data
- ❑ Non-Radar and Radar Associate Controller
- ❑ Radar
- ❑ Completed all en route training

b. **Tower or TRACON**

- ❑ Flight data
- ❑ Clearance delivery
- ❑ Ground control
- ❑ Local control
- ❑ Non radar
- ❑ Radar
- ❑ Completed all tower/TRACON training

16. How many Nonradar/Radar Associate positions had you checked out on before leaving your facility?

_____ Number of positions (enter whole number)

17. How many Radar positions had you checked out on before leaving your facility?

_____ Number of positions (enter whole number)

18. Did you feel you were progressing well in training at your facility?

❑	❑	❑	❑	❑	❑	❑
1=Definitely Not	2	3	4=Somewhat	5	6	7=Definitely Yes

19. Was your training interrupted for more than 30 days?

❑ Yes ❑ No

20. To what extent did each of the following prepare you to control traffic?

	Not at all 1	2	3	Moderate extent 4	5	6	Very great extent 7
a. Classroom training	❑	❑	❑	❑	❑	❑	❑
b. Laboratory training	❑	❑	❑	❑	❑	❑	❑
c. CBI training	❑	❑	❑	❑	❑	❑	❑
d. On-the-job training (OJT)	❑	❑	❑	❑	❑	❑	❑
e. Training team (ATM, FLM, Training Manager, Instructors)	❑	❑	❑	❑	❑	❑	❑

Do you have any additional comments on your responses?

_____

_____

_____

_____

21. How satisfied were you with each of the following?

	Very dissatisfied 1	2	3	Somewhat satisfied 4	5	6	Very satisfied 7
a. Classroom training	❑	❑	❑	❑	❑	❑	❑
b. Laboratory training	❑	❑	❑	❑	❑	❑	❑
c. CBI training	❑	❑	❑	❑	❑	❑	❑
d. On-the-job training (OJT)	❑	❑	❑	❑	❑	❑	❑
e. Training team (ATM, FLM, Training Manager, Instructors)	❑	❑	❑	❑	❑	❑	❑

Developmental Controller Questionnaire – Transfer

22. Overall what was the best part of the classroom, laboratory, and CBI training at your facility? (Mark all that apply.)

- ❑ Organizational/facility culture
- ❑ Opportunity to practice/learn new skills
- ❑ Classroom/laboratory instructors
- ❑ Scenario/problem design/realism/accuracy
- ❑ Completeness/quality of training
- ❑ Consistency/subjectivity of instructors
- ❑ Managerial/training policies
- ❑ Slow training pace
- ❑ Fast training pace
- ❑ Other (Please list below.)

If *Other* please list.

_____

_____

23. Overall what was the best part of OJT at your facility? (Mark all that apply.)

- ❑ Organizational/facility culture
- ❑ Opportunity to practice/learn new skills
- ❑ OJT instructors/supervisor/CPCs
- ❑ Completeness/quality of training
- ❑ Consistency/subjectivity of instructors
- ❑ Managerial/training policies
- ❑ Slow training pace
- ❑ Fast training pace
- ❑ Working live traffic
- ❑ Other (Please list below.)

If *Other* please list.

_____

_____

24. Overall what was the worst part of the classroom, laboratory, and CBI training at your facility? (Mark all that apply.)

- ❑ Organizational/facility culture
- ❑ Opportunity to practice/learn new skills
- ❑ Classroom/laboratory instructors
- ❑ Scenario/problem design/realism/accuracy
- ❑ Completeness/quality of training
- ❑ Consistency/subjectivity of instructors
- ❑ Managerial/training policies
- ❑ Slow training pace
- ❑ Fast training pace
- ❑ Other (Please list below.)

If *Other* please list.

_____

_____

25. Overall what was the worst part of OJT at your facility? (Mark all that apply.)

- ❑ Organizational/facility culture
- ❑ Opportunity to practice/learn new skills
- ❑ OJT instructors/supervisor/CPCs
- ❑ Completeness/quality of training
- ❑ Consistency/subjectivity of instructors
- ❑ Managerial/training policies
- ❑ Slow training pace
- ❑ Fast training pace
- ❑ Working live traffic
- ❑ Other (Please list below.)

If *Other* please list.

_____

_____

26. Did you work with your OJTI in a simulation prior to controlling live traffic?

❑ Yes ❑ No

27. If *Yes*, did you find it helpful?

❑ Yes ❑ No

28. If not, would you have found it helpful to work with your OJTI in a simulation prior to controlling live traffic?

❑	❑	❑	❑	❑	❑	❑
1=Not at all	2	3	4=Moderate extent	5	6	7=Very great extent

29. To what extent did the feedback you received during your training help you to improve your performance?

❑	❑	❑	❑	❑	❑	❑
1=Not at all	2	3	4=Moderate extent	5	6	7=Very great extent

30. Do you believe that the training process needs to be improved?

❑	❑	❑	❑	❑	❑	❑
1=Definitely not	2	3	4=Somewhat	5	6	7=Definitely yes

Do you have any recommendations for improving the training process?

31. During training, did you experience any changes to your overall health/well-being?

❑	❑	❑	❑	❑	❑	❑
1=Much worse	2	3	4=No change	5	6	7=Much better

Do you have any additional comments on your response?

32. During training, did you experience any changes to your overall feelings of stress?

❑	❑	❑	❑	❑	❑	❑
1=Much greater	2	3	4=No change	5	6	7=Much less

Do you have any additional comments on your response?

PERFORMANCE

33. Was the job of developmental controller at your facility what you expected?

❑	❑	❑	❑	❑	❑	❑
1=Definitely not	2	3	4=Somewhat	5	6	7=Definitely yes

Do you have any additional comments on your response?

34. How difficult did you find the following tasks?

	Not at all 1	2	3	Somewhat difficult 4	5	6	Very difficult 7	N/A
a. Separating aircraft using nonradar procedures.	❑	❑	❑	❑	❑	❑	❑	❑
b. Separating aircraft using radar procedures.	❑	❑	❑	❑	❑	❑	❑	❑
c. Coordinating with other controllers.	❑	❑	❑	❑	❑	❑	❑	❑
d. Communicating with pilots.	❑	❑	❑	❑	❑	❑	❑	❑
e. Performing multiple tasks at the same time.	❑	❑	❑	❑	❑	❑	❑	❑
f. Remembering everything that needs to be done.	❑	❑	❑	❑	❑	❑	❑	❑

35. Please list any other tasks that were especially difficult for you to learn.

CULTURE

36. What was the predominant organizational culture at your facility? (Mark all that apply.)

- ❑ Friendly
- ❑ Competitive
- ❑ Supportive
- ❑ Unsupportive/apathetic
- ❑ Hostile
- ❑ Other (Please list below.)

If *Other* please list.

37. Did any local organizational policies or procedures at your facility make your job more difficult as a developmental controller?

❑	❑	❑	❑	❑	❑	❑
1=Definitely not	2	3	4=Somewhat	5	6	7=Definitely yes

Do you have any additional comments on your response?

38. Did any national organizational policies or procedures at your facility make your job more difficult as a developmental controller?

❑	❑	❑	❑	❑	❑	❑
1=Definitely not	2	3	4=Somewhat	5	6	7=Definitely yes

Do you have any additional comments on your response?

39. Was the culture/environment at your facility conducive for success?

❑	❑	❑	❑	❑	❑	❑
1=Definitely not	2	3	4=Somewhat	5	6	7=Definitely yes

Please explain the reasoning behind your rating.

40. Were other controllers at your facility supportive?

❑	❑	❑	❑	❑	❑	❑
1=Definitely not	2	3	4=Somewhat	5	6	7=Definitely yes

41. To what extent did the following factors contribute to your being transferred to a lower level ATC facility?

	Not at all			Moderate extent			Very great extent	N/A
	1	2	3	4	5	6	7	N/A
a. Individual ability/performance	❑	❑	❑	❑	❑	❑	❑	❑
b. Local training policies and procedures	❑	❑	❑	❑	❑	❑	❑	❑
c. National training policies and procedures	❑	❑	❑	❑	❑	❑	❑	❑
d. Training instructors	❑	❑	❑	❑	❑	❑	❑	❑
e. Training methods	❑	❑	❑	❑	❑	❑	❑	❑
f. Organizational/facility culture	❑	❑	❑	❑	❑	❑	❑	❑
g. External factors (e.g., family, location, etc.)	❑	❑	❑	❑	❑	❑	❑	❑

Were there any other factors that contributed to your training outcome?

42. Were you treated fairly while in training?

❑	❑	❑	❑	❑	❑	❑
1=Definitely not	2	3	4=Somewhat	5	6	7=Definitely yes

If not, please describe.

FEEDBACK

43. Do you think you could have certified as a controller if you had stayed at your facility? (Mark N/A if CPC before you left.)

❑	❑	❑	❑	❑	❑	❑	❑
1=Definitely not	2	3	4=Maybe	5	6	7=Definitely yes	N/A (CPC)

If so, how much longer do you think it would have taken you to certify?

- ❑ Less than 1 month
- ❑ 1-3 months
- ❑ 4-6 months
- ❑ 7-9 months
- ❑ 10-12 months
- ❑ 1-2 years
- ❑ More than two years

Do you have any additional comments on your response?

44. Do you think you could have certified as a controller at a different facility of the same type?

❑	❑	❑	❑	❑	❑	❑
1=Definitely not	2	3	4=Maybe	5	6	7=Definitely yes

45. What could have been done to help you succeed as a controller at your facility? (Mark all that apply.)

- ❑ Nothing
- ❑ More training
- ❑ Better training
- ❑ Better OJT instructor(s)
- ❑ Better managers
- ❑ More feedback
- ❑ More supportive environment
- ❑ Other (Please list below.)

If *Other* please list.

46. What did you like best about controlling air traffic? (Mark all that apply.)

- ❑ Controlling traffic
- ❑ Pay
- ❑ Work hours/schedule/shiftwork
- ❑ Status
- ❑ Excitement/challenge
- ❑ Physical environment
- ❑ Organizational culture
- ❑ Managerial policies
- ❑ Co-workers
- ❑ Trainer(s)/instructor(s)
- ❑ Other (Please list below.)

If *Other* please list.

47. What did you like least about controlling air traffic? (Mark all that apply.)

- ❑ Controlling traffic
- ❑ Pay
- ❑ Work hours/schedule/shiftwork
- ❑ Status
- ❑ Excitement/challenge
- ❑ Physical environment
- ❑ Organizational culture
- ❑ Managerial policies
- ❑ Co-workers
- ❑ Trainer(s)/instructor(s)
- ❑ Other (Please list below.)

If *Other* please list.

48. How satisfied were you with the quality of the supervision you received at your facility?

❑	❑	❑	❑	❑	❑	❑
1=Very dissatisfied	2	3	4=Somewhat satisfied	5	6	7=Very satisfied

Developmental Controller Questionnaire – Transfer

49. What was most satisfying about your work as a developmental controller?

50. What was least satisfying about your work as a developmental controller?

51. Based on your experience, what do you think it takes to succeed as a developmental controller?

52. Is there any cognitive or personal attribute that we could look for in new applicants that would help them to succeed in controller training?

NEXT PHASE

53. Are you looking forward to controlling traffic at your next facility?

❑	❑	❑	❑	❑	❑	❑
1=Definitely Not	2	3	4=Somewhat	5	6	7=Definitely Yes

54. Would you recommend air traffic control as a career choice to your family and friends?

❑	❑	❑	❑	❑	❑	❑
1=Definitely Not	2	3	4=Somewhat	5	6	7=Definitely Yes

55. Do you have any other comments that would help us improve selection, placement, or training of developmental controllers?

DEMOGRAPHICS (Optional)

56. What is your age? _____ Yrs.

57. Are you:
❑ Male ❑ Female

58. What is your race/national origin? (Mark all that apply.)
- ☐ American Indian or Alaskan Native
- ☐ Asian or Pacific Islander
- ☐ Black or African American
- ☐ Hispanic
- ☐ White

Thank you!

APPENDIX B

Developmental Controller Questionnaire

WHEN	**Survey Period –** Open until January 31, 2017.
WHY	The ATO is conducting this survey/questionnaire to better understand the reasons developmental controllers succeed or fail training at their **first facility**.
HOW	Surveys will be conducted online. To access the questionnaire, either scan the QR code using your mobile device or from a web browser type the following into the address bar: **www.tiny.cc/ATCQUEST**
TARGET	All previous developmentals who attained CPC status or whose training was terminated whether referred to the NEST or not (FLMs will distribute this document to the developmental).
HOW WILL THIS INFORMATION BE USED?	This information will be used to develop strategies to increase the likelihood that developmental controllers will succeed in field qualification training. Our aim is to ensure that everyone who can control air traffic is successful in field qualification training. ALL data will be used in research only in aggregate form. We will collect no personal or facility identifiable information.
AM I REQUIRED TO PARTICIPATE	While your participation in this process is entirely **voluntary**, the insight you provide will help us in that we do not lose developmentals in training due to factors other than ability to control traffic. You will be allowed 30 minutes of duty time to complete this survey.

Developmental Controller Questionnaire

Linda Pierce and Cristina Byrne (researchers from the Federal Aviation Administration (FAA), Civil Aerospace Medical Institute (CAMI) Human Factors Research Division NAS Human Factors Safety Research Laboratory (AAM-520) request your participation in a study to better understand the reasons developmental controllers succeed or fail to succeed in training at their first facility. We are seeking input from air traffic control (ATC) training developmentals. We will use the feedback we receive to develop strategies to increase the likelihood that developmental controllers will succeed in field qualification training. Our aim is to ensure that everyone who can control air traffic is successful in field qualification training.

This research is sponsored by Terry Craft (terry.craft@faa.gov) from the FAA, Air Traffic Organization (ATO) Management Services in Washington, D.C. In addition, this research has been coordinated with and is supported by NATCA (Tom Adcock, tradcock@icloud.com). Only summary results will be briefed to the ATO and NATCA after sufficient data have been collected regarding developmentals' perceptions of the positive and negative aspects of field qualification training.

Completion of the questionnaire will take approximately 30 minutes. The information you provide will be used for research purposes only and your responses to this questionnaire will be anonymous. No personally identifying information is requested. All data collected will be stored at CAMI and will be kept completely confidential. No one outside the CAMI research team will ever have access to your individual responses.

By accessing the questionnaire, you acknowledge that you have read this document, understand its contents, and freely consent to participate in this study under the conditions described here. You also understand that you are free to withdraw your consent and discontinue participation at any time, for any reason without jeopardizing your employment status with the Department of Transportation, FAA or the ATO.

To access the questionnaire, either scan the QR code using your mobile device or from a web browser type the following into the address bar:

www.tiny.cc/ATCQUEST

**You must type the address directly into the Internet browser address bar. The survey cannot be found using a search engine.*

If you decide to participate, we thank you. We highly value your feedback and believe strongly that, if a process is to be improved, those involved in the process must be consulted. If you have comments or questions, please contact the researchers, Linda Pierce at 405-954-6835, Linda.Pierce@FAA.Gov or Cristina Byrne at 405-954-0336, Cristina.Byrne@FAA.Gov.