

Task 14: Improving ATCS Selection from Sources Other than the General Public (Pierce, Bleckley)

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University/Contract Performing Organization:

Project Start Date: 1 October 2010

Anticipated End Date: 30 September 2012

Requirements Statement

Operational Shortfall or Knowledge Gap

The FAA needs to know what prior training and experience leads to success in the air traffic control specialist (ATCS) occupation. This interest extends to all aspects of terminal, en route, and Flight Service (Alaska).

The FAA is re-writing the standards used to determine the basic qualifications that applicants must have to be considered for entry-level ATCS positions. Currently, the basic requirements include either three years of progressively responsible work experience or four years of college leading to a degree. Certain kinds of aviation-related experience may also be substituted, i.e., a control tower operator (CTO) certificate, private pilot's license, air defense intercept experience, etc. The basic qualifications that are used at present are 15 to 30 years old.

Individuals who apply for FAA terminal and en route ATCS jobs based on their prior experience in air traffic control do not take AT-SAT. Instead, they are evaluated based on their prior experience. Examples include former military controllers, former DOD civilian controllers, and individuals who have earned CTO certificates with facility ratings in other work/training situations. We need a scientific basis for determining who is more likely to be successful within these groups.

Air Traffic Collegiate Training Initiative students must pass AT-SAT to be considered for ATCS positions. However, as a group, they pass at a very high rate.

Applicants for the Flight Service option (in Alaska) do not take AT-SAT to be hired. They must pass the older OPM test. However, the knowledge section of the test is probably out of date and it is not clear the test continues to be an appropriate vehicle for examining these applicants.

Benefit in Closing the Shortfall or Gap

Improvement of the FAA's selection system

Description of the Desired Product

Identification of education, work experience, credentials, and or training that will predict success

on the job, by option, and a recommendation about whether any of these can substitute for the current aptitude/ability tests. In addition, to the extent feasible, scoring/ranking suggestions based on these factors.

Schedule
FY12

There are four areas of research within this task, not all of which will be addressed in FY10:

1. Examination of the qualification standards
2. Discover additional predictors of success in civil ATC for those with prior ATC experience.
3. Should AT-CTI students take AT-SAT as part of the hiring process?
4. Are the qualification standards for Flight Service Specialists in AK appropriate?

1. Research Objective

The first objective will examine the appropriateness of qualification standards used to select ATCSs.

Background

The ATCS qualification standards have not been examined since the early 1980s. Since that time, many of the military and civilian aviation qualifying positions have been superseded. Others have changed in ways that may no longer provide the experience needed to be an ATCS in the FAA. Even for those that remain valid, it may be possible to improve the likelihood of success as an ATCS through examining other factors.

Previous Activity on this Task

None.

Proposed or Planned Research

Research on the military and civilian aviation qualifying positions detailed in the standards to ascertain which positions should be retained. Research on new or redefined positions to determine if they should be added as qualifying experience.

Research Question(s)

Since the original ATCS qualification standard was written, military jobs have changed. Should we be considering other military specialties (for example, UAV pilot)?

Technical Approach

Current Year

Detailed examination of the military and civilian aviation positions listed in the qualification standards as qualifying experience.

Detailed examination of new or redefined military positions to determine if they should be added as qualifying experience.

Out-years

Continue examination of new or redefined the military and civilian aviation positions.

Air Traffic Resources Required

None.

Calibration

None.

2. Research Objective

The second objective will examine the relationship between prior ATC experience and success within civil ATC.

Background

Currently, applicants with previous ATC experience are hired on the basis of that experience. However, not all of these applicants successfully transition to civil ATC. Are the current qualification standards appropriate? Are there other predictors that could be considered when making hiring decisions?

Previous Activity on this Task

None.

Proposed or Planned Research

We will examine information available for ATCSs who were hired based on previous ATC experience. We will attempt to determine whether the current qualification standards are appropriate and if there are factors that could improve our ability to predict who will make the transition to civil ATC.

Research Question(s)

Is previous aviation-related or ATC experience a sufficient qualification factor for FAA ATC jobs? Are there work, education, or other predictors of success that could be used in addition to prior ATC experience?

Technical Approach**Current Year**

Identify ATCS who were hired due to prior experience. Examine existing data sources for training and job performance (outcome measures) and identify additional predictors of success in the ATCS occupation.

Air Traffic Resources Required

List of ATCSs hired on the basis of prior experience and access to their field training and job performance data.

Calibration

None.

3. Research Objective

The third objective will examine the question of whether AT-CTI students should take AT-SAT as part of the hiring process.

Background

When the Air Traffic College Training Initiative (AT-CTI) program was first developed, AT-CTI students took the Office of Personnel Management (OPM) test non-competitively as part of the selection process. When the FAA began using AT-SAT as the selection test, AT-CTI students were not included in the testing (for financial reasons). When funding became available, AT-CTI students were required to take AT-SAT non-competitively (2005). Since then, very few AT-CTI students have failed to qualify for employment on the basis of their AT-SAT scores.

Previous Activity on this Task

None.

Proposed or Planned Research

Examine operational AT-SAT scores to determine the proportion of AT-CTI students who were rated “not qualified” on the basis of their scores.

Examine experimental AT-SAT data for AT-CTI student participants. These data may provide sufficient numbers of AT-CTI student scores for analysis of training successes and failures. The experimental data will need to be examined to determine if it is suitable for use in these analyses.

Research Question(s)

What proportion of AT-CTI students are rated “not qualified” on the basis of their AT-SAT scores?

Would those who are rated “not qualified” successfully complete training?

Is PV a sufficient outcome variable?

Will field training data be available and reliable soon enough to be used to address this issue?

Technical Approach

Current Year

Determine if experimental AT-SAT scores for AT-CTI students are similar in distribution to operational AT-SAT scores. Determine if field training data are suitable for use as an outcome measure.

Out-years

Will depend on results of current year activity.

Air Traffic Resources Required

Performance Verification data and field training data will be needed.

Calibration

None

4. Research Objective

The fourth objective will examine the selection of Alaskan Flight Service Station (FSS) specialists. This objective will be addressed in FY11 or FY12.

FY 10 Milestone Schedule		
Description	Proposed Start Date	Proposed Completion Date
Objective 1. Examination of qualification standards	10/01/09	9/30/11
new military qualification categories	10/01/09	9/30/11
CTO qualifications	10/01/09	9/30/11
Draft Technical Report	10/09/10	9/30/11
Objective 2. Relationship between prior ATC experience and civilian success	10/01/09	12/31/10
identify potential predictors	10/01/09	3/31/10
identify data sources	4/01/10	6/30/10
analyses	7/01/10	9/30/10
Draft Technical Report	9/30/10	12/31/10

FY10 Deliverables		
Description	Proposed completion date	Actual completion date
Objective 1. Informal briefing for AHR	09/30/10	
Objective 2. Informal briefing for AHR	09/30/10	
Supporting materials will be provided at the request of the AJP-61 Program Management. These include power point charts and briefing slides for TCRG meetings, abstracts for reports that don't already include them, quarterly reports, and text for the annual report summarizing the year's activities.	As needed	