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North American, Central American and Caribbean Office (NACC)
**Thirteenth Meeting of Directors of Civil Aviation of the Central Caribbean
(C/CAR/DCA/13)**
Havana, Cuba, 28 - 31 May 2013

Agenda Item 5:   **Air Navigation Matters**
  5.2   **Review of the implementation of Performance Based Navigation (PBN), Aeronautical Information Management Quality Management System (AIM QMS), Meteorology Quality Management System (MET QMS) and Aerodrome Certification**

REVIEW OF FAA AIRPORT CERTIFICATION SAFETY INSPECTOR TRAINING AND QUALIFICATION PROGRAMS

(Presented by United States)

SUMMARY
Aerodrome inspectors are charged with ensuring that airports are complying with certification and safety as detailed in Annex 14, Volume I, and with specific Civil Aviation Authorities (CAA) aerodrome standards. Thus, CAAs need skilled, highly qualified, and professional aerodrome inspectors. Inspectors must possess the correct skill set and be adequately trained and qualified. This paper provides information on the U.S. Federal Aviation Administration's (FAA) review of the training process and qualification of its Airport Certification Safety Inspectors (ACSI).

References:
• U.S. FAA Order, 5280.5, *Airport Certification Program Handbook*   • 14 Code of Federal Regulations, Part 139, *Certification of Airports*   • International Civil Aviation organization (ICAO) Document 9774, *Manual on the Certification of Aerodromes*.   • ICAO Annex 14, Volume I, *Aerodrome Design and Operations*

Strategic Objective	*This information paper is related to Strategic Objective:* *A. Safety – Enhance global civil aviation safety*

1.   Introduction

1.1   The FAA has initiated a complete review of the training process and qualification requirements for its ACSI cadre. Using instructional systems design (ISD), the agency hopes to develop criteria for training and qualification that will better reflect the needs of the industry and incorporate the enforcement tools necessary to ensure compliance with current safety and design standards. All Civil Aviation Authorities may benefit from the data developed during this FAA study and we will share all pertinent data as it is developed.

2.   **Discussion**

2.1   *The FAA Airport Certification Program:* In the United States, there are currently 546 certificated airports. To oversee the requirements of certification there are 44 Credentialed ACSIs working from nine (9) Regional Offices. These ACSIs and Headquarters Airports Division management, work to ensure that airports comply with the requirements of 14 Code of Federal Regulations (CFR) Part 139 (*Certification of Airports*). It is a demanding job that requires skill in a wide variety of topics. In addition, the position of ACSI requires that inspectors apply compliance and enforcement program tools, including the provision of both administrative and civil penalty actions to ensure that airports remain in compliance with the regulation.

2.2   *Aerodrome Inspector Selection, Qualification and Professional Development*: ICAO Document 9774, *Manual on the Certification of Aerodromes*, states that Civil Aviation Authorities (CAAs) may consider the Civil or Electrical Engineer with experience in planning, operations, and maintenance. It further states that CAAs may consider hiring other persons with relevant backgrounds, but that all must have adequate knowledge of Annex 14, Volume I, all other relevant guidance, and state standards. As the FAA ACSI position requires wide ranging skills the current FAA airport inspector cadre come from varying backgrounds. The FAA has not made an engineering background a requirement, however, there are engineers amongst the group and their skills add to the quality of the workforce.

2.3   The FAA has taken the approach that the aerodrome inspector position, as it is wide-ranging, can be capably filled by a number of backgrounds. That philosophy is reflected in the most recent Position Description for an FAA ACSI. It lists the following functional responsibilities:

-   Responsible for conducting inspections of airports of varying size and complexity.
-   Evaluates airport sponsor compliance with airport certification in all areas of the regulation.
-   Applies compliance and enforcement measures in all cases of sponsor non-compliance and violation.
-   Reviews safety phasing construction plans and contractor safety compliance plans.
-   Conducts reviews of wildlife hazards assessments and approvals of wildlife hazard management plans.
-   Investigates potential regulatory violations and supports investigations of aircraft accidents/incidents.
-   Participates in Safety Management Systems (SMS) activities.
-   Works in collaboration with other offices, other lines-of-business, and other agencies.
-   Supports training outreach efforts to provide agency information and support industry safety efforts.

2.4   That same position description includes the following essential eligibility element: *To be eligible, applicant must demonstrate the skills necessary to inspect large and/or complex Part 139 certificated airports for deficiencies and/or unsafe conditions*. It also includes knowledge, skill and abilities qualifiers such as experience in airport operations, and ability to convey technical information to varying audiences. Finally, the position description includes the caveat that new hires will have to be physically capable of attending and completing a resident Basic Aircraft Rescue Firefighting (ARFF) course.

2.5   Once hired, a FAA ACSI begins the training and qualification process, which is detailed in FAA Order 5280.5 and supplemented by regional division requirements. Qualification requirements include a combination of formal training and on-the-job-training (OJT) experience. The minimum mandated coursework and OJT includes:

- Resident training at the FAA Academy in Oklahoma City, Oklahoma.
- Resident Basic Aircraft Rescue Firefighting school (various approved sites across the country)
- Certain recommended courses (correspondence and others).
- Minimum On-The-Job Training Requirements (time on-duty and number of inspections).
- Recurrent Training and Currency Requirements.
- Regional Requirements added by FAA regions to meet specific regional needs.

2.6   *Measurement of Need*:   As the airport industry and airports themselves become busier and more complex, the demands placed on ACSIs have also become more onerous. This has spurred the FAA to begin a review of the training and qualification of its ACSIs.

2.7   This initiative will begin with an extensive survey/questionnaire divided into measurable segments. It will address specific job duties/tasks and specialized knowledge elements. It will include:

1. Identification of job duties, tasks, knowledge and specialized skills.
   a.   We will ask participants to evaluate duties/tasks in terms of frequency of use, task importance, difficulty to learn, and the risk of not performing the task correctly.
   b.   Specialized skill requirements such as knowledge of FAA Orders, will then be evaluated using the criteria from 'a' above.
   c.   Finally, using 75 skill/abilities/attributes qualifiers we will ask participants to evaluate the need for other qualities in an ACSI such as objectivity and problem solving ability.

2. ACSI proficiency and performance gaps. This is field input about how they view their current proficiency of the tasks and requirements addressed in the three sections of #1 above. We know there are skill set gaps that must be improved, but we first need to know precisely where the gaps are. Using the data from above, we will ask participants to rate their current proficiency. This will determine gaps in current skills and performance.

3. Quality and adequacy of the initial ACSI training curriculum. Following the determination of the most critical tasks and the determination of performance gaps the data will be used to redesign the training curriculum.

4. Professional Development Training. Inspectors must remain knowledgeable of not just airport topics, but broader industry trends that affect airports and airport safety as well. To address this need we are asking the field about their recurrent training and professional development, what they would add, and why.

5. Employee selection and ACSI Qualification. This is field input on what they view to be the ideal ACSI, the qualities of a new hire, what education and background is best suited, and what qualification criteria applies before an inspector is credentialed.

2.8   *Program Design Workshop and Instructional Roadmap*: Following the Field Survey and data collection, we will identify a 'Program Design Group'. Using ISD theory this group will meet to evaluate the data available, and to develop a roadmap for redesign of ACSI programs. Their work will be captured in a Program Design Document that will be used to determine needs and future projects.

2.9   *Instructional Systems Design (ISD)*: ISD is well suited to aiding an organization in identifying training, curriculum and professional-development needs. We have recently hired a full-time instructional design specialist with experience in conducting high-level ISD reviews. In coordination with our ISD specialist we are currently incorporating ISD in all aspects of our review of the ACSI position.

2.10   The survey/questionnaire detailed above, and the forming of a Program Design SME group, are all in accordance with the principles of ISD and we are planning on utilizing ISD during all work. The use of ISD will also facilitate integration with existing FAA Academy ISD and ISO9000 processes.

2.11   *Training Methodologies*: Finally, modern training methodologies have changed dramatically in recent years. We understand the need to incorporate technologies for our training and professional development to remain effective and interesting to modern tech-savvy students. In the survey/questionnaire, we will query the field about their needs and desires for training formats and technologies. We will strive to incorporate new technologies and methodologies wherever possible.

2.12   *Anticipated Outcomes*: Our ACSI workforce is critical to ensuring that the 546 certificated airports in the U.S remain in compliance with all applicable safety standards and requirements. However, their job is becoming more difficult and more complex. We owe them the level of training and professional development that will ensure their success. We anticipate that using the process described above will result in the following:

>   1.   A complete redesign of the initial training curriculum for ACSI inspector staff.
>   2.   Identification of performance gaps that need to be addressed.
>   3.   A re-evaluation of professional development needs.
>   4.   Data that can be used by management to consider future training and
>   development initiatives.

3.   **Conclusion**

3.1   The position of aerodrome inspector is one of the most challenging in aviation. As such, the training and qualifying of aerodrome inspectors must be one of the primary concerns of Civil Aviation Authorities. This paper offers a glimpse at the FAA airport certification program and at an on-going study of inspector skills, training and qualification designed to improve inspector selection, qualification and training. The results of this study and effort will have worldwide applicability. We encourage C/CAR Member States to consider adoption or implementation of the processes discussed to determine the skill and training needs of CAA aerodrome safety inspectors.

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