Flight Standards Inspector Hiring and Training Guidelines

Purpose: Information
Submitted by: United States
Training Guidelines for ASI’s

• Concept initially developed by FAA through the APEC TPTWG Aviation Safety Sub-Group.

• Now FAA is working with ICAO to develop guidelines applicable worldwide.

• Hiring and Training Guidelines address:
  – the foundation for CAA training;
  – qualifications for recruitment of ASI’s;
  – ASI position descriptions based on job oversight responsibility;
  – Job task analysis (JTA) for inspector job tasks;
  – Classroom training – initial (indoc); specialized, recurrent;
  – On the Job Training (OJT)
  – Examples of PDs; job tasks, classroom Training, OJT

• Guidelines are being patterned after ICAO Circular 298, Training Guidelines for Accident Investigation Inspectors
Need for ASI Training Guidelines

• After a review of Aviation Safety Inspector (ASI) course offerings in various regions and information from ICAO USOAP and FAA IASA, it is clear that many authorities found training and maintaining safety inspectors is an ongoing challenge
• A lot of training is ad hoc and not uniform between CAAs and within CAAs

Technical Personnel Qualification and Training

• ICAO USOAP audits note that, after two rounds of all ICAO Contracting States, of the 8 critical elements of a safety oversight system, Critical Element 4: Qualification and Training of Technical Personnel has been the most challenging for CAA’s to meet.

• Hiring and training guidelines for ASI’s will provide a means to promote a minimum level of technical capabilities of technical personnel providing safety oversight worldwide
8 Critical Elements of a Safety Oversight System
ICAO Document 9734 Part A

Each CE builds upon the other
CE4 must be built upon sound foundational elements CE1-CE3

- CE-1 Primary Aviation Legislation
- CE-2 Specific Operating Regulations
- CE-3 CAA Structure & Oversight Functions
- CE-4 Qualified Technical Personnel & Training
- CE-5 Technical Guidance
- CE-6 Licensing, Certification
- CE-7 Surveillance Obligations
- CE-8 Resolution of Safety Concerns

CE-1 Primary Aviation Legislation
ICAO Doc 9734, Part A

- Par. 3.2.5 - Key to effective safety oversight by the State
- Par. 3.2.4 - Should establish a CAA to proactively supervise and regulate aviation activities:
  - Personnel licensing
  - Operation of aircraft
  - Airworthiness inspection
    - Air traffic
  - Aerodromes
  - Provision of meteorological and search and rescue services
  - Investigation of aircraft accidents/ incidents
CE-2 Specific Operating Regulations  
ICAO Doc 9734, Part A

- Par. 3.3.1.1 –
  - Should be in conformity with ICAO Annexes
  - Should be in sufficient detail to ensure that satisfactory compliance will result in the desired level of safety
  - Must provide for amendment
- Par. 3.3.1.4 - Must be framed in legal phraseology but phrased in a way to be understood and used by the CAA and general public

CE-3 CAA Structure & Safety Oversight Functions  
ICAO Doc. 9734, Part A

- Par. 3.4.2.1.
  - CAA must be properly organized and staffed with qualified personnel capable of accomplishing the required wide range of technical duties involved in safety oversight
  - CAA inspectors should enjoy conditions of service and remuneration consistent with their education, technical knowledge and experience, and comparable to those personnel of the operator whose activities they will inspect and supervise
- Par. 3.4.2.2 - CAA inspectors must possess appropriate credentials of CAA identification which allows unhindered access to inspect aviation persons, entities and facilities.
CE-3 CAA Structure & Safety Oversight Functions
ICAO Doc. 9734, Part A – (con’t)

• Par. 3.4.2.3 - The cost of recruiting, retaining qualified technical personnel who satisfactorily meet the requirements of the profession represents a significant financial commitment and may require revisions to long-standing policies and regulations regarding remuneration for qualified technical personnel

• Par. 3.4.3 - The Flight Safety Standards Department bears the overall responsibility for the safety oversight-related activities of the CAA – usually personnel licensing, aircraft operation and airworthiness of aircraft

CE-4 Technical Personnel Qualification &Training
Qualification Standards for ASI’s

• ICAO Doc 9734, par. 3.5.2.1 –
  ➢ State authorities must identify the minimum professional qualifications for technical personnel performing safety oversight functions

• ICAO Doc. 8335, Part I, Par. 6.2.6; ICAO Doc 9734, Part A, Par. 3.5.1.2 and ICAO Doc 9760, Part II, Par. 3.1.3 –
  ➢ all speak to the knowledge, skills and abilities of individuals that are required of a successful aviation safety inspector that CAA’s should consider in the recruitment and hiring process.

• ICAO Doc 9379, Part I, Appendix –
  ➢ speaks to responsibilities and some qualifications for CAA experts involved in various aspects of Personnel Licensing

• ICAO Doc 9734, par. 3.5.2.2 –
  ➢ State authorities must be prepared to finance their technical personnel’s initial and recurrent training
ASI Recruitment Requirements

General Requirements for all ASI specialties:

ICAO Doc 8335, Part I, Par. 6.2.3--

• Broad air transport background of five years or more.
• Experience with the problems of operating or maintaining transport aircraft.
• Meteorological and climatological knowledge and experience.
• Experience in technical training including visual aids, training devices and aircraft flight simulators.
• Reputation for possessing qualities of initiative, tact, tolerance and patience.
• Experience in auditing techniques. Note.— The experience in auditing techniques, while required, can be provided by the CAA, using a suitable training course and subsequent supervised practical auditing experience.

Additional Recruitment Requirements

Based on ASI Specialty

Flight Operations Inspector -ICAO Doc. 8335, Part I, Par. 6.2.4

• 5000 hours as a pilot-in-command of transport type civil or military aircraft.
• Note: The flight experience of new hire inspectors should be commensurate with their intended duties. For instance, inspectors who will work only in general aviation would not require flight time in transport type aircraft.
• Current Airline Transport Pilot’s licence if inspector is to be conducting line or flight crew checks.
• Previous appointments either in operational management, as an airline pilot or training instructor, or as a military pilot where experience in air transport operations would have been acquired.
Additional Recruitment Requirements
Based on ASI Specialty

Airworthiness – ICAO Doc 8335, Part I, Par. 6.2.3; 6.2.5.1; 6.2.5.2

- Hold an aircraft mechanic/aviation maintenance technician licence with relevant airframe and powerplant ratings.
- Knowledge, background and experience in continuing airworthiness management including:
  - aircraft maintenance programme development, approval and control, including applicable reliability programmes;
  - approval of modifications and repairs;
  - maintenance release;
  - applicability of airworthiness directives and operational directives with a continuing airworthiness impact

Additional Recruitment Requirements
Based on ASI Specialty (con’t)

- Knowledge, background and experience in continuing airworthiness management including (con’t):
  - correction or deferment of defects;
  - coordination of scheduled maintenance, the application of airworthiness directives, the replacement of life-limited parts and the inspection of components;
  - management of continuing airworthiness records;
  - mass and balance statement management;
  - airworthiness requirements of relevant parts of operations specifications; and
  - knowledge of quality systems
Additional Recruitment Requirements based on ASI specialty – Personnel Licensing Inspector
ICAO Doc 9379, 2.4

General Requirements for All Licensing Inspectors --
• Hold an appropriate grade and level of license relevant to the assigned examination topic or training organization.
• Knowledge, background and experience in personnel licensing including:
  – Thorough knowledge of the licensing system
  – Ability to apply and interpret the regulations, policies and guidance of the State
  – Strong background in training and assessment
  – Excellent written language skills

Additional for Flight Crew Licensing --
• Class 1 medical certificate
• A minimum of 200 hours of flight instruction in an aircraft.
• Professional flying skill as demonstrated in a flight check to the skill standards of a commercial pilot with instrument rating.

Additional Recruitment Requirements based on ASI specialty – Personnel Licensing Inspector
ICAO Doc 9379, 2.4 (con’t)

Additional for Mechanic Licensing –
• Aircraft mechanic licence with relevant airframe and powerplant ratings
• Experience involving the maintenance of and repair of airframes, powerplants, and aircraft systems with responsibility for certifying airworthiness;
• Maintenance experience with aircraft 5,700 kg or more max certificated takeoff weight;
• Aircraft maintenance experience in an approved maintenance organisation, or air carrier repair facility or military repair facility; aircraft maintenance work experience within the last three years
Additional ASI Specialization

Within the basic ICAO inspector specialties of Flight Operations, Airworthiness and Personnel Licensing, there may be further specialization, as follows:

**Flight operations** –
- Dispatch,
- Simulation,
- Cabin Safety

**Airworthiness** –
- Avionics,
- Cabin Safety

**Personnel Licensing** –
- Examiner (testing),
- Training Organizations

- Once hired, each CAA employee, including ASI’s, should have a position description listing their area of responsibility.

---

Example of Position Description

**Flight Operations Inspector**

1a. Flight Operations Inspector - Principal Operations Inspector

I. POSITION SUMMARY

The Principal Operations Inspector functions as the primary operations interface between assigned air operators and the Civil Aviation Authority (CAA). Has programme responsibility to assure that assigned air operators meet Civil Aviation Regulations with respect to operations programmes. Determines the need for and establishes work programmes for surveillance and inspection of assigned organisations within manpower and budget limitations to assure adherence to the applicable regulations.

II. DUTIES AND RESPONSIBILITIES

A. Technical Administration

Assures on a continuing basis that assigned organisations are properly and adequately organized, staffed, and equipped, have and conduct an adequate training programme, including an acceptable record keeping system; and have facilities and procedures that meet all regulatory requirements. Chairs joint CAA-industry meetings; maintains regular contact with organisations assigned, and coordinates with top management officials. Requires or directs correction of any deficiencies/discrepancies and refuses or withdraws approval if they cannot be resolved.

Is responsible for the conduct of enforcement investigations and preparation of final reports and recommendations. Performs or supervises the emergency suspension of certificates or cancellation of operations specifications.
Training of ASIs once hired by the CAA

- ICAO Doc 8335: 6.3.1, provides some basic guidelines for training of aviation safety inspectors. Included in the guidance are specific recommendations regarding initial, practical (on the job [OJT]) and continuation training.

- The classroom and OJT training should cover the job tasks in the inspector’s assigned area of responsibility.

Initial ASI training

ICAO Doc 8335:

- 6.3.1.1 The initial training of CAA inspectorate staff should consist of a competency-based instruction with respect to CAA regulations and procedures. Newly engaged inspectors should accompany experienced staff on inspections for a practical introduction to the tasks.

- 6.3.1.2 The initial training should also cover at least the following:
  - auditing techniques and CAA auditing procedures;
  - safety management systems and quality systems;
  - human factors principles; and
  - training for the specific role and tasks of the inspector, with emphasis on those areas requiring an approval by the CAA.
Initial ASI training

ICAO Doc 8335:

• In application, the CAA may have a series of courses for newly hired inspectors that focus on both CAA administrative procedures and inspector technical competencies. The courses focusing on the inspector technical competencies will likely address each of the four areas as noted in 6.3.1.2.

• The following five areas should be covered in inspector initial employment training courses:
  – Orientation/ Administrative and General Technical functions;
  – Air Operations, including air operator certification and approvals;
  – Personnel Licensing;
  – Surveillance; and
  – Resolution of Safety Concerns

• A CAA may have one course that covers each of these topic areas. However it is more likely that the CAA will have more than one course in each of the areas to fully cover the subject matter.

ASI Continuation Training

ICAO Doc 9734, Part A –

• 3.5.2.2. Training should include continuing development of knowledge and skills related to respective responsibilities, accomplished through periodic training and refresher courses in all disciplines for which the ASI’s are responsible

• 3.5.2.3 – Training should include supervisory courses

• 3.5.2.4 – Training should also be provided on subjects such as applicable CAA regulations, inspectors’ skills, knowledge, duties, responsibilities and CAA procedures
ASI Continuation Training

- Continuous inspector training may generally be grouped into the following eight functional areas:
  - Administrative/General Technical;
  - Air operations – certification and approvals
  - Airworthiness, including Approved Maintenance Organisations
  - Personnel Licensing, including Designees and Approved Training Organisations
  - Emerging technologies (eg. Remotely powered aircraft; powered-lift)
  - Specialised job skills (eg. Flight technologies, aircraft evaluation group approvals)
  - Surveillance
  - Resolution of Safety Issues (compliance and enforcement).

- Continuous training should include recurrent and specialised tasks

ASI Classroom Training

- The initial and continuation training is conducted in a classroom with formal course instruction.
- The types of courses an ASI would take throughout the ASI’s career will depend on their area of assigned responsibility.
- However, for each area of responsibility, the classroom training should be standardized for all ASI’s in the CAA.
- Thus for standardization, ease of reference and recordkeeping, the classroom training courses applicable to an ASI are typically compiled into a list, commonly referred to as a Training Profile.
- An example of an ASI Training Profiles for a Flight Operations Inspector is contained in the following slides.
Example of Flight Operations
Inspector Training Profile

ASI On the Job Training (OJT)

ICAO Cir 298: 3.3

- Following the initial instruction the Flight Standards Inspectorate should provide on the job training for a new inspector. During this time, the new inspector will practice the procedures and tasks covered in the initial training and gain familiarity with inspector techniques. The provision of on the job training should involve experienced inspectors who have been approved by the Flight Standards Inspectorate to perform the particular job task(s) without supervision.

- From FAA OJT Guide, OJT is presented in three stages or Levels of learning.
  - **Level I** is the basic background and knowledge of a task,
  - **Level II** is a further understanding of the function and conduct of the task, including observation or assistance of the task being performed, and
  - **Level III** is where trainees actually perform the task themselves.

  These three levels provide for a progressive and structured field training experience for anyone who has a need to learn a new job task.
Relationship Between Classroom and OJT Training

• Classroom training is based on specific inspector tasks.
• Classroom training is usually considered OJT Level 1 training.
• For example, the ICAO GSI Personnel Licensing Course 18710, provides basic knowledge in certain Inspector Tasks that for our example are listed in the Operations Inspector OJT work sheet at items 4.001-4.019; 4.511; 4.701-4.723.
Relationship Between Classroom and OJT Training

Thus the Inspector’s OJT worksheet would have
• the 18710 course entered by the appropriate job tasks;
• Under the level one column by the appropriate job tasks –
  – The date the course was completed
  – And a sign-off by the inspector’s OJT instructor.

OJT Level II Training

• Before an inspector begins Level II OJT, there is usually some type of knowledge review before the practical aspects of observing/assisting in performance of a job task begins.
• This is especially important if:
  – There has some a time lapse between the Level I training, and the undertaking of Level II training, or
  – If the inspector has taken the knowledge course from another CAA, where the regulations are different from those used by the CAA
• A Job Task Analysis Worksheet can be used to assist the inspector’s Level II review
Example of a Job Task Analysis Worksheet

Aviation Safety Inspector Training

Next Steps:
- Finalize Hiring and Training Guidelines
- Share progress with the international community on inspector training profiles development
- Update FAA ITS and WTS courses with new inspector job task numbers
- Complete JTA worksheets, first for ICAO GSI courses, and later for other tasks as time permits
- Discuss possible workshop on aviation safety profiles use and corresponding course development (in-house, and regional courses)
Thank you. Any questions?