Availability and Competence of Technical and Inspection Personnel in Civil Aviation Administrations

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Director, Air Navigation Bureau
International Civil Aviation Organization (ICAO)

Council Informal Briefing
6 October 2017
Required Training for **Service Providers**

- Several ICAO Annexes mandate training for aviation professionals:
  - Pilots
  - Controllers
  - Aircraft maintenance personnel
  - Cabin crew
  - MET personnel
  - Rescue and firefighting personnel
  - Personnel involved with AIS functions
  - Personnel involved in the transport of DG by air
  - Personnel in approval of training organizations

- Other ICAO Docs contain provisions related to training:
  - PANS-OPS (8168)
  - PANS-TRG (9868),
  - PANS-AERO (9981)
  - Technical Instructions for DG (9284)
  - Manual on Competencies of Civil Aviation Safety Inspectors (10070)
Required Training for CAA technical personnel

- **Qualified technical personnel (CE-4) is one of the 8 critical elements of an effective safety oversight system**
  - ICAO USOAP CMA Protocol Questions address EI of CE-4 (108 PQs)

- **Doc 9734 Part A contains guidance on:**
  - Staffing requirements
  - Qualification of technical personnel
  - Training of technical personnel, including:
    - Minimum *professional qualifications for personnel performing safety oversight*
    - Training necessary to effectively accomplish duties and responsibilities
    - Periodic training and refresher courses
**Required Training for CAA technical personnel (continued)**

- **Annex 19 requirement:**
  
  "The State shall establish **minimum qualification requirements** for the technical personnel performing safety oversight functions and **provide for appropriate initial and recurrent training** to maintain and enhance their competence at the desired level."

- **SARPs do not specifically address detailed staffing and training requirements** within State civil aviation system
ICAO USOAP CMA Report
EI by CE (end of 2012 vs end of 2015)

ICAO USOAP CMA Report (continued)

As of end 2015, CE-4 remains the CE with the lowest EI rate at global level.

The low EI results from a number of factors:

- a deterioration of the safety oversight system was observed in some States, where the system established showed not to be sufficiently sustainable.
  - States had not been able to retain some of its qualified and experienced technical staff.

- some States had gone through periods of instability
  - This has impacted the system established within the CAA.

- some States had seen a significant increase of their level of aviation activity
  - CAA not being sufficiently staffed to effectively perform all necessary additional certification, surveillance and enforcement activities.
USOAP Process

- Mandatory Information Request (MIR)
- PQ Finding (Not Satisfactory)
- Develop and submit Corrective Action Plan (CAP)
- Assesses CAP
- Monitors implementation
- Validates
GLOBAL

STATE

NEEDS ANALYSIS

SOLUTION

(INSIDE CAA)

(OUTSIDE CAA)

USOAP Corrective Action Plan (CAP)

Solution Center

CAA Human Resource (HR) Tool

Civil Aviation Safety Inspector (CASI) Baseline

Delegation of Tasks and Functions

Global Aviation Safety Oversight System (GASOS)

Next Generation of Aviation Professionals (NGAP)

Civil Aviation Safety Inspector (GSI) Training Programme

Government Safety Inspector (GSI) Database

Government Safety Inspector (GSI) Training Programme

Long Term

Training Need Analysis (TNA)

Lowest EI at a global Level

Unsatisfactory CE-4 PQs

Unsatisfactory CE-4 PQs

Global Aviation Safety Oversight System (GASOS)

Next Generation of Aviation Professionals (NGAP)

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SOLUTION CENTER

Unsatisfactory CE-4 PQs

Lowest EI at a global Level

GLOBAL STATE NEEDS ANALYSIS SOLUTION (INSIDE CAA) (OUTSIDE CAA)
Solution Center

Provides guidance and solutions against each deficiency as identified through USOAP CMA

The ‘Solution Center’ provides the following:

- Reference to the specific PQ
- Associated ICAO documentation
- Best practices by other States and Industries
- Regional and global initiatives
- Available training
- Software tools
- References to States that have resolved the PQ

Source: iSTARS 3.0 – Solution Center (https://portal.icao.int/space)
Catalogue

List of Available iSTARS Applications

The list below contains all applications available to you on iSTARS, based on your user permissions.

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Select a category or use the search box

- All (29)
- Accident Stats (1)
- ACE (4)
- Airlines (1)
- Airports (5)
- Documentation (5)
- IMPLEMENT (1)
- Integrated Analysis (12)
- Natural Hazards (2)
- SSP/SMS (3)

Solution Center

Description:

Guidance to support the drafting of corrective action plans for protocol questions findings.

This beta version is continuing to be developed (preview version).
GLOBAL

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US/CAAP Corrective Action Plan (CAP)

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Unsatisfactory CE-4 POs

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Long Term

Unsatisfactory CE-4 POs

Current Situation

Current Situation

28 November 2017
CAA Human Resource Tool

- States have asked for guidance on resourcing and structuring of a CAA
- Needs also expressed by DGs attending DGCA course
- USOAP audits found that States don’t have methodology to determine staffing needs
- Working Group formed, sponsored by DD/Safety
Tool

**Benchmarking**
For States to get a sense of the number of inspectors, based on benchmark with peers

**Manpower Planning**
Tool that States can use to calculate manpower needs

**Organizational Structure Guidance**
Different approaches to safety and sharing of best practices
Benchmarking Tool

- Provides a starting point with raw data
- Allows States to compare their number of inspectors with the number of inspectors of other States
Manpower Planning Tool

- Calculates man-hours and number of inspectors (OPS, AIR, PEL, AGA, ANS) needed
- Includes a basic risk-based approach to surveillance
Org Structure Case Studies

• Designed to help States enhance the way they organize their civil aviation authority commensurate to the size and scope of their aviation industry

• Provides a list of case studies of selected CAAs and their structures to help States with:
  – Identifying factors to consider when designing a CAA and safety oversight system
  – Evaluating options for the management of resource load: internal resourcing, designation, delegation, outsourcing, etc.
ICAO Training Needs Analysis (TNA)

- **Building capacity through human performance improvement**
  - provides aviation organizations with help identifying and addressing human performance improvement needs through training and development

- **Purpose**
  - guide users through the process of assessing their needs for training. It reflects a proven approach to Training Needs Analysis (TNA) that has been validated through practical field work

Designed to evaluate the need for more training (e.g. AIR, OPS, etc.)
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- **GLOBAL**
  - Unsatisfactory CE-4 PQs
  - Lowest EI at a global level

- **STATE**
  - USOAP Corrective Action Plan (CAP)

- **NEEDS ANALYSIS**
  - Solution Center
  - TNA

- **SOLUTION (INSIDE CAA)**
  - Next Generation of Aviation Professionals (NGAP)
  - Long Term

- **SOLUTION (OUTSIDE CAA)**
  - Training Need Analysis (TNA)
  - Next Generation of Aviation Professionals (NGAP)
  - Long Term
Next Generation of Aviation Professionals (NGAP)

• **Description**
  – Launched to ensure that *enough qualified and competent aviation professionals are available* to operate, manage and maintain the *future* international air transport system
  – For example, Technical and Inspection Personnel

• **A long term solution for ensuring that CAAs can build capacity for the expected growth**
  – But the work starts [now](#)
Global Aviation Safety Oversight System (GASOS) Delegation of Tasks and Functions

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Unsatisfactory CE-4 PQs

Civil Aviation Safety Inspector (CASI) Baseline

Civil Aviation Safety Inspector (CASI) Database

Lowest EI at a global level

Unsatisfactory CE-4 PQs

Training Centre

Next Generation of Aviation Professionals (NGAP)

Government Safety Inspector (GSI) Training Programme

Global Aviation Safety Inspector (GSI) Training Programme

Civil Aviation Safety Inspector (CASI) Baseline

Civil Aviation Safety Inspector (CASI) Database
Civil Aviation Safety Inspector (CASI)

ICAO’s baseline

Inspector Application
- Personal information
- State Organization
- Discipline (AIG, A1R, ANS, OPS, PEL, etc.)
- Specialist Experience
- Work Experience / CV
- Supporting documents / certificates

CAA Validation
- Date of employment
- Registration of aircraft
- Signed documentation (AOC, CoA, etc.)

Other Endorsements
- By the industry
- By professional associations
- ...

ICAO Recognition Minimum Requirements
- Employment with aviation authority
- 5 years inspector experience with a current authority authorization or similar document
- English Proficiency / iHELPP
- Competencies check (Doc 10070)
- Completion of ICAO courses:
  - GSI Course
  - USOAP CBT (LEG/ORG + Relevant Areas)
  - SMS Course
  - A1G
  - Train the Trainer
  - Etc.

Categorization
- Inspector
- Specialist Inspector
Civil Aviation Safety Inspector (CASI)

- Creating a pool of highly-qualified and experienced inspectors capable of performing specific and specialized regulatory tasks.
  - Training will include the relevant ICAO approved Government Safety Inspector (GSI) courses
  - Based on the competencies identified in Doc 10070 – *Manual on the competencies of civil aviation safety inspectors*

- Providing Member States access to inspectors that can carry out specific job task or function on a temporary basis.

- Enabling Member States to satisfactorily perform their regulatory oversight functions.
What is being done

- Secretariat is developing **guidance material** to facilitate a State’s ability to delegate its functions and duties.

- Creating a **database of highly-qualified and experienced inspectors** that are capable of performing specific, specialized tasks.

- Creating an **ICAO baseline** for the CAA’s inspectors competencies, including a “**career path**”
Global Aviation Safety Oversight System (GASOS)

Delegation of Tasks and Functions

Global Needs Analysis (INSIDE CAA)

Solution Center

Unsatisfactory CE-4 PQs

USOAP Corrective Action Plan (CAP)

Lowest EI at a global level

Corrective Actions

Government Safety Inspector (GSI) Training Programme

Government Safety Inspector (GSI) Training Programme

Civil Aviation Safety Inspector (CASI) Baseline Database

Next Generation of Aviation Professionals (NGAP)

Long Term

Training Need Analysis (TNA)
Government Safety Inspector (GSI) Training Programme

• Objectives
  – ensure a high-level of quality and standardization in the training of government safety inspectors globally.

• Description
  – Developed to address shortcomings identified under the USOAP audits (CE-4). GSI courses are conducted by ICAO-Endorsed GSI Training Centres and developed using the Model Civil Aviation Regulations (MCARs)

https://www.icao.int/training/Pages/GSI%20Courses%20and%20centers.aspx
Government Safety Inspector (GSI) Training Programme

• GSI Courses Available
  – Government Safety Inspector Operations- Air Operator Certification (GSI-OPS), Course 18700
  – Government Safety Inspector Airworthiness- Air Operator and Approved Maintenance Organization Certification (GSI-AIR), Course 18701
  – Government Safety Inspector Personnel- Personnel Licensing (GSI-PEL), Course 18710
  – Expansion of courses covering AGA & ANS inspectors planned

https://www.icao.int/training/Pages/GSI%20Courses%20and%20Centers.aspx
Provisions on delegation of tasks & functions

- **Annex 19**
  Safety Management (Forward)

- **Doc 9760**
  Airworthiness Manual

- **Doc 9734B**
  The Establishment and Management of a Regional Safety Oversight Organization

"Execution, by an RSOO, of certain tasks and functions on behalf of its member States requires **delegation of authority** to the RSOO. Delegation of authority by a member State to its RSOO does not legally require the RSOO to be structured in a specific way and involves only the delegation of functions, not responsibilities. Under the Chicago Convention, safety oversight remains the responsibility of the State even if the associated tasks and functions are delegated to another entity"
Enabling the process

States may need to delegate some of its tasks and functions. For this to happen, States must:

- have a regulatory framework in place
- identify the tasks and functions that can be delegated
- have requirements and procedures for the evaluation and engagement of an inspector
- have access to qualified inspectors
Delegation of Tasks & Functions

- ICAO is developing guidance to facilitate States in setting up legislation, regulatory framework and procedures required to accept technical assistance from other Member States, individuals or aviation entities.

- These would include a delegation mechanism that would consider:
  - The conduct of specific tasks and functions and making recommendations to the State without the issuance of certificates, licenses or approvals on behalf of the requesting State; or
  - the full delegation of tasks and functions including issuance of certificates, licenses or approvals on behalf of the requesting state.
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Global Aviation Safety Oversight System (GASOS)

State Oversight Audit Results

ICAO Library

Concept endorsed by the:

ICAO recognized safety oversight provider (RSOP)
ICAO Recognition of Safety Oversight Provider

- Recognition would be granted in respect to the **specific tasks or functions** carried out by the **safety oversight provider**.

- Each function and tasks would be **mapped to USOAP CMA Protocol Questions (PQ)**.

- Provider’s functions would be classified in accordance with the **potential level of empowerment** granted by States.
ICAO Recognition of Safety Oversight Provider (continued)

- The following three levels of delegation/empowerment are defined based on the complexity of functions performed:
  - Level 1: advisory functions.
  - Level 2: operational functions.
  - Level 3: certifying, licensing, and approving functions.
GLOBAL STATE NEEDS ANALYSIS SOLUTION (INSIDE CAA) (OUTSIDE CAA)

USOAP Corrective Action Plan (CAP) CE-4 PQs

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Long Term

GSI for AGA & ANS inspectors

28 November 2017
I-CAAT: ICAO’s Civil Aviation Authority Tools

- **3LD**: 3-Letter Designators
- **IHELPP**: ICAO Home of the English Language Proficiency Programme
- **ARS**: Aircraft Registry System
- **TCOA**: Aircraft Operator Certificate (AOC) Database
- **DRDB**: Drone Registry Database
- **CASI**: Civil Aviation Safety Inspector Database

The page mentions the website: www.icao.int/safety/STARS.

UNDER DEVELOPMENT

28 November 2017
Improvement of implementation process

- PCI, new section in Secretariat, aimed at improving the implementation process
- Project-oriented perspective enabling more transparency and providing a better decision-making tool
- Enhance the use of the Job Cards as a tracking tool
- Ongoing close coordination between ANC and Secretariat
Conclusions

• ICAO has developed tools to help States improve their safety oversight responsibilities and the resolution of safety deficiencies
  — Finding the right solutions for each State (Solution Center, GSI)
  — Evaluate States’ needs (CAA HR Tool, TNA)
• Setup an ICAO baseline of competencies regarding CAA inspectors (CASI)
• Develop more guidance on delegation of tasks and functions
• Create a recognition mechanism (GASOS, CASI)
• Prepare for the future (NGAP)