Agenda

- ICAO Civil Aviation Training Policy
- GAT Office
- Training Assessment
- Training Development
- TRAINAIR PLUS Programme
- Global Aviation Training Catalogue
- Agreements with Academic Institutions
- Aviation Training Intelligence™
Agenda

- ICAO Civil Aviation Training Policy
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Aviation industry forecast to 2030

Representing a growth of:

**438,356** new passengers / day

**3** new aircrafts in service / day

**3,110** new aircraft movements / day

**3,507** new supporting jobs / day

Including:

- **103** new pilots / day
- **10** new ATC / day
- **80** new Main. Tech. / day
Regional Growth Forecast: 2010-2030

✈ Pilots
✈ Maintenance Personnel
✈ Air Traffic Controllers

Source: *ICAO Doc 9956 - Global and Regional 20-year Forecasts, Pilots, Maintenance Personnel and Air Traffic Controllers.*
Training Deficiencies in ICAO Member States

**USOAP Results by Area and Critical Element**

6 areas and 5 critical elements are above the target of 60% EI.

- **CE 4**: “Technical personnel qualification and training” indicates 56% of effective implementation

- **Critical elements that are key State performances for the implementation of a safety oversight system**
  - CE 6: licensing, certification, authorization and approval obligations;
  - CE 7: surveillance obligations;
  - CE 8: the resolution of safety concerns.
ICAO’s Response

- ICAO Assembly A38 identifies the scope of ICAO training activities
- ICAO Civil Aviation Training Policy
- Establishment of the Global Aviation Training (GAT) Office (1 January 2014)
- Improvement of the Critical Element (CE 4) “Technical Personnel Qualifications and Training” Results
- The 39th Assembly of ICAO unanimously supported the ICAO civil aviation training programme and capacity-building in aviation.
Agenda

✈ ICAO Civil Aviation Training Policy
✈ GAT Office
✈ Training Assessment
✈ Training Development
✈ TRAINAIR PLUS Programme
✈ Global Aviation Training Catalogue
✈ Agreements with Academic Institutions
✈ Aviation Training Intelligence™
Global Aviation Training (GAT) Office

**Vision**

Lead Human Resources Development in aviation.

**Mission**

Establish coordinated, effective and efficient mechanisms to support the development of human resources in aviation, appealing to Member States and the industry.

**Objectives**

- Facilitate the global implementation of ICAO Provisions;
- Set up acceptable training and qualifications standards and frameworks;
- Provide guidance to States and industry in skills development;
ICAO GAT Office

1. Training Assessment
2. Training Development
3. Training Implementation

Training Organization
ICAO TD Methodology
ICAO Training Catalogue
Training Assessments and Consulting (TAC):
- Conducts assessments of Training Organizations (TOs) in line with ICAO reference documents
- Provides support services in Training

Training Design and Development (TDD):
- Designs and produces ICAO courses
- Validates ICAO harmonized training packages

TRAINAIR PLUS (TPP):
- Manages the network of ICAO Training Partners (Training Centres, International Organizations, Universities)
- Conducts ICAO courses

What do we do?
ICAO GAT Office

Regional Focus in Training Implementation & Business Development
Agenda

✈ ICAO Civil Aviation Training Policy
✈ GAT Office
✈ **Training Assessment**
✈ Training Development
✈ TRAINAIR PLUS Programme
✈ Global Aviation Training Catalogue
✈ Agreements with Academic Institutions
✈ Aviation Training Intelligence™
Training Assessments

✈ One of the pillars of the ICAO Civil Aviation Training Policy: Recognition of Training Organizations (TO)

✈ Baseline:
  • Appendix 2 of Annex 1
  • Manual on the Approval of Training Organizations (ICAO Doc. 9841)
  • TRAINAIR PLUS - Training Development Guide - Competency-based Training Methodology (ICAO Doc. 9941)

✈ Objectives:
  • Identifying critical areas requiring improvements
  • Helping TOs to justify additional funding to acquire additional resources and equipment
  • TO meets ICAO requirements before joining TPP
  • Providing a clear and independent evaluation to management of TOs, CAAs...
# Training Re-Assessments

**Review of the CAP from previous assessment**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>1. Organization</td>
<td>7. Records</td>
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<tr>
<td>3. Training Programmes and Training Delivery</td>
<td>9. Training Management System</td>
</tr>
<tr>
<td>4. Training Needs Assessment</td>
<td>10. Safety Management (if applicable)</td>
</tr>
<tr>
<td>5. Facilities</td>
<td>11. RTCE Criteria</td>
</tr>
<tr>
<td>6. Personnel</td>
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</tbody>
</table>
Training Assessments

Number of assessments by year

- 201 assessments/reassessments (cumulative) since 2010 (111 assessments and 90 reassessments)
Training Assessments, Findings by Area
Agenda

- ICAO Civil Aviation Training Policy
- GAT Office
- Training Assessment
- Training Development
- TRAINAIR PLUS Programme
- Global Aviation Training Catalogue
- Agreements with Academic Institutions
- Aviation Training Intelligence™
Training Development

- Training Development Guide, ICAO Doc 9941
- Competency-based training methodology
- Design and develop ICAO Courses
- On-line Job Task Catalogue
- Qualification of instructors and validators

Providing expertise and support to develop competency-based training
Training Development
Competency-based training development methodology

- Analysis
  - Decision to proceed with analysis
  - Non-training solutions
  - Feedback
  - Training needs
  - Draft STP
- Design and Production
  - Training needs
  - Draft STP
  - Feedback
- Evaluation
  - Feedback
- STP
ICAO rosters of qualified experts
Supporting the implementation of training activities

Qualification procedures for:
- Assessors
- Instructors
- Course developers
- Course validators
- Subject Matter Experts (SMEs)
ICAO ISD Validator Qualification Process

1. TDC
2. 1st STP
3. IQCD
4. VCT
5. ISCD
6. OJT
7. ISD Validator

Additional STP
ICAO Instructor Qualification Process

1. Being an SME in the desired field of instruction with at least three years of experience at the operational level → Work Experience

2. Fulfillment of specific qualification requirements for the delivery of the course → Specific Requirements

3. Extensive knowledge of ICAO Standards and Recommended Practices (SARPs) and associated guidance material related to the desired field of instruction → Knowledge about ICAO Provisions

4. Completion of the course that an applicant wishes to be qualified as an instructor → Course Completion Certificate

5. Completion of the ICAO Training Instructors Course (TIC), or an equivalent Instructional Techniques course → TIC Certificate or Equivalent

6. Completion of the ICAO Instructor OJT conducted by an ICAO Senior Instructor → ICAO Instructor Certificate

Continuous monitoring and evaluation
Agenda

- ICAO Civil Aviation Training Policy
- GAT Office
- Training Assessment
- Training Development
- TRAINAIR PLUS Programme
- Global Aviation Training Catalogue
- Agreements with Academic Institutions
- Aviation Training Intelligence™
What is the TRAINAIR PLUS Programme (TPP)
A cooperative global network of training partners which:

✓ Implement a standardized methodology to develop competency-based training courses
✓ Share competency-based training packages
✓ Deliver ICAO Recognized Training Packages

Who can join the programme:
• Training arms of CAAs, airlines, airports, and maintenance organizations;
• Private training organizations recognized by the State where they are located;
• Training centres involved in any specialized aviation-related safety training
TRAINAIR PLUS Membership benefits

- **Associate Members**
  - ICAO recognition
  - Deliver ICAO courses

- **Full Members**
  - All above
  - Develop STPs and generate revenues from STP sales

- **Regional Training Centres of Excellence (RTCE)**
  - All above
  - Develop and deliver RTCE ITPs
  - Regional training implementation

- **Corporate Partners**
  - Develop and deliver Partnership Training Packages (PTPs)
TPP Membership Distribution

Membership Regional Distribution

- North America: 13
- Central America: 13
- The Caribbean: 17
- South America: 12
- Europe: 17
- Africa: 22
- Asia Pacific: 25

TOTAL: 104

Membership Category

- Associate: 37
- Full: 41
- RTCE: 21
- Corporate: 5

Map showing regions and distribution across continents.
Cumulative TRAINAIR PLUS Members per year
TRAINAIR PLUS Electronic Management System (TPeMS)

Integrated processes and procedures for:
- Membership application Process
- Development of ICAO harmonized training packages
- Hosting of ICAO courses
- Training package library + exchange
- Production of certificates
- Rosters of qualified experts
- Trainee questionnaires
- Online registrations
- Post Training Evaluation Process
Members exchanging STPs
Electronic Bulletin
Course Catalogue
ICAO Website
Newsletter
Social Media
Training Report
ICAO Training Implementation

Customer Satisfaction Survey on GAT Activities Results TPP Members

Overall Satisfaction 8.1/10

Satisfaction by Theme

- Membership application & assessment process: 8.3/10
- Events: 8.2/10
- Communications: 8.2/10
- Development of ICAO-recognized training packages: 7.6/10
- Standardized Training Package Exchange using the TRAINAIR PLUS Electronic Management System: 7.5/10
- Delivery of ICAO-recognized training packages: 7.4/10
- Membership requirements & benefits: 7.3/10

Net Promoter Score® (NPS) 23
- Promoters: 22%
- Passives: 33%

Intend to Remain a Member 83%
Agenda

- ICAO Civil Aviation Training Policy
- GAT Office
- Training Assessment
- Training Development
- TRAINAIR PLUS Programme
- Global Aviation Training Catalogue
- Agreements with Academic Institutions
- Aviation Training Intelligence™
More than 200 ICAO recognized courses;
54 of which were implemented in 2018;
Classroom, online and blended formats;
Technical, management and academic levels;
ICAO Training Portfolio (Searching)

https://www.icao.int/Training/Pages/default.aspx
ICAO Training Portfolio (1)

**General**
1. Fundamentals of the Air Transport System
2. CAA Senior and Middle Managers Training Course: Managing Compliance with ICAO SARPs
3. International Air Law Course

**Safety Audit and Inspection**
1. Universal Safety Oversight Audit Programme Computer-based Training (USOAP CBT)
2. ICAO Government Safety Inspector Operations – Air Operator Certification Course (GSI-OPS-18700)
3. ICAO Government Safety Inspector Personnel Licensing Course (GSI-PEL-18710)
4. ICAO Government Safety Inspector Airworthiness – Air Operator and Approved Maintenance Organization Certification

**Economics**
1. Air Transport Forecasting Course
2. Air Transport Statistics Course
3. Air Transport Economics and Regulation course

**Training Competency Development**
1. Validating Competency-based Training (VCT) – EN/SP
2. Post-Training Evaluation (PTE) Course - EN/SP
3. Post-Training Evaluation (PTE) On site OJT
4. Managing Aviation Training Intelligence (MATI) - EN
5. Training Developers Course (TDC) - EN/SP
6. Training Instructors Course (TIC) Part 1
7. Training Instructors Course (TIC) Part 2 – EN/SP
8. Training Managers Course (TMC) - EN/SP
9. Training Needs Analysis (TNA) OJT
ICAO Training Portfolio (2)

**SMS**
1. Safety Management for Practitioners (SMxP)
2. Aerodrome Safety Management Incorporating PANS-Aerodromes
3. Online Safety Management Training Course

**Aerodrome**
1. Management Certificate in Civil Aviation
2. Wildlife & Habitat Management at Aerodromes - Control & Reduction (Part One)
3. ICAO-ACI Management of Airport Security
4. ICAO-ACI Aerodrome Certification Course
5. ICAO-ACI Course in Airport User Charges

**Personnel Licensing**
1. Personnel Licensing (PEL) System (Part 1)
2. Personnel Licensing (PEL) System (Part 2)

**ANS - PBN**
1. Performance-Based Navigation (PBN) Operations
2. Performance-Based Navigation (PBN) - Airspace Design Performance-Based Navigation (PBN) Overview Course
3. Performance-Based Navigation (PBN) for Pilots Course

**Others**
2. Control of the Authenticity and Validity of Travel Documents at Airport Borders - Level 1
3. ECCAIRS - European Co-ordination Centre for Accident and Incident Reporting Systems (ECCAIRS) Technical Course
4. ECCAIRS - European Co-ordination Centre for Accident and Incident Reporting Systems (ECCAIRS) End User Course
Training Competency Development Courses

- Training Developers Courses (TDC)
- Training Instructors Course (TIC)
- Training Managers Course (TMC)
Challenges in the Implementation of SARPs

ICAO USOAP Results

- States in North America (NAM): 100%
- States in the Caribbean (CAR): 57.89%
- States in Eastern Africa (ESAF): 45%
- States in Western Africa (WACAF): 50%

World Average: 66.05%

Priority States of lowest compliance:

- States in North America (NAM): 93.48
- States in the Caribbean (CAR): 68.64%
- States in Eastern Africa (ESAF): 46.45%
- States in Western Africa (WACAF): 48.14%
CAA Senior and Middle Managers Training Course (CAA SMMTC)

Course goal
This course aims to enable CAA senior and middle managers to effectively plan, manage and assess the implementation of ICAO SARPs in their States.

Course objectives
1. Developing the ICAO SARPs Implementation Plan
2. Managing the ICAO SARPs implementation
3. Assessing the ICAO SARPs implementation

Target Audiences
Senior and middle managers of State’s CAA in charge of SARPs implementation

Course Format
- **Mode**: Blended (online + classroom)
- **Duration**: 1 week / 5 days
- **Language**: Spanish, English, French

2018 Deliveries
- **Deliveries**: 21 sessions
- **Trainees**: 540 audiences from over 90 States and 4 regional safety organizations. A total of 540 scholarships were awarded.
Number of Trainees participated by Year

Yearly:
- 2011: 193
- 2012: 476
- 2013: 898
- 2014: 1,636
- 2015: 2,858
- 2016: 3,129
- 2017: 3,200
- 2018: 4,521

Cumulative:
- 2011: 193
- 2012: 669
- 2013: 1,567
- 2014: 3,203
- 2015: 6,061
- 2016: 9,190
- 2017: 12,390
- 2018: 16,911
Number of Courses delivered by Year

Yearly

Cumulative

10 30 66 129 237 253 261 382

10 40 106 235 472 725 986 1368
Agenda

- ICAO Civil Aviation Training Policy
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- Aviation Training Intelligence™
Cooperation & Partnership

Universities in cooperation

• Concordia University (Canada): Management Certificate in Civil Aviation.

• École Nationale de l’Aviation Civile (ENAC – France): Masters Degree in Safety Management

• Waterloo University (Canada): Fundamentals of the Air Transport System

• Nanyang Technological University (China): ICAO Aviation Data-driven Decision-Making (AD3M)

International Organizations in cooperation

• Airports Council International (ACI): Airport Management Professional Accreditation (AMPAP)

• International Federation of Freight Forwarders (FIATA): Dangerous Goods Training Programme

Graduate-level Credit

Airport Management Professional Accreditation Programme (AMPAP)

ESC Toulouse Aerospace MBA’s “Airport Management”

The Toulouse Business School provides academic recognition for AMPAP. The four mandatory AMPAP courses are recognized as equivalent to:

- 20% of the MBA programme.
- Represents a 28.5% reduction in the AeMBA’s tuition fee.
Agenda

- ICAO Civil Aviation Training Policy
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- Global Aviation Training Catalogue
- Agreements with Academic Institutions
- Aviation Training Intelligence™
Aviation Training Intelligence (ATI)

An integrated information structure to collect diverse data required for conducting up-to-date, needs-based aviation training activities.

A set of tools and methodologies to connect decision-useful information for strategic and operational planning, business implementation, course development and delivery.

A cooperative network to share intelligence and close training gaps.
Aviation Training Intelligence sources

- Collaboration
- Industry Events
- Magazines
- Newspapers

Information

- ICAO Database
- State’s Database
- Industry Database
- Customers Database

Data

- Management Systems
- Applications
- Software

Systems

- ISD/TPP
- New training environment
- New technologies
- New training strategies
- Evaluation methods

Methods
Aviation Training Intelligence sources

Collect
- Data

Connect
- Systems
- Methods

Collaborate
- Intelligence

Qualified aviation professionals
How is ATI™ created?

Building Aviation Training Intelligence

Data

Information

Knowledge

Intelligence

Interpret

Analyze

Apply

Create

Intelligence Creation

Objective

Subjective

Essential Components

EC 1

EC 2

EC 3

EC 4

EC 5

EC 6

EC 7

EC 8

• ICAO Data

• Aviation Forecast

• TPhMS TRAINAIR PLUS Electronic Management System

• LMS Learning Management Systems

• TNA Training Needs Analysis

• OPA Organizational Performance Analytics

• ATED Aviation Training & Education Directory

• ACP Aviation Career Path Portal

• Quality Assurance

• TPP Methodology

• Instructional System Design

• PTE Post Training Evaluation

• HRD Human Resource Development

• CAAMP Civil Aviation Authority Master Plan

ICAO AVIATION TRAINING INTELLIGENCE™

TRAINAIR PLUS

TRAINAIR PLUS™

GLOBAL AVIATION TRAINING
Integrated Safety Trend Analysis and Reporting System (iSTARS)

Collection of web applications and data sets that facilitate and assist users in conducting aviation safety, efficiency and risk analyses.

Provides a framework for data and intelligence needed for decision-making and the prioritization of ICAO programmes such as the Universal Safety Oversight Audit Programme (USOAP), the Aviation Safety Implementation Assistance Partnership (ASIAP) and Global Aviation Training (GAT).
Integrated Safety Trend Analysis and Reporting System (iSTARS)

Web applications are listed in a catalogue and grouped into different categories, depending on what aviation field they relate to.

Main categories:
- Accident statistics
- ACE
- Airlines
- CAA HR Toolkit
- Documentation
- Implement
- Integrated Analysis
- Natural Hazards
- SSP / SMS
- Traffic
- USOAP
ICAO Training Implementation

ICAO Training Electronic Tools:

iStars Statistics

Training Activities in France

There are 3 TRAINAIR PLUS Members in France. 3 ICAO-recognized courses are under development. In total, 12 ICAO-recognized courses have been delivered with 83 participants.

Courses Delivered: 12  Courses Developed: 3
Training Centres: 3  Total Participants: 83

Courses Delivered in France

<table>
<thead>
<tr>
<th>Year</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
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Course Participants in France

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<th>Year</th>
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<th>2015</th>
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<th>2017</th>
<th>2018</th>
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<tbody>
<tr>
<td>Participants</td>
<td>20</td>
<td>20</td>
<td>16</td>
<td>5</td>
<td>5</td>
<td>8</td>
<td>8</td>
</tr>
</tbody>
</table>

Each Member State’s Records

Training Centre’s Performance

Ecole Nationale de l’Aviation Civile (ENAC)  RCE
Governmental Training Organization, Member since August 2014

Courses delivered: 4  Courses developed: 3  Courses under development: 0

Courses Developed:
- Utilisation d’un appareil radioscopique conventionnel en vue de la détection de menaces (132/076AVSEC X-RAY DET), delivered once
  - en fr ar es ru

Courses Delivered - Summary:
- Training Developers Course (TDC), delivered 1 time with 10 participants total
  - en fr ar es ru
- Utilisation d’un appareil radioscopique conventionnel en vue de la détection de menaces, delivered 1 time with 10 participants total
  - en fr ar es ru
- Cours de Formation Instructeurs, delivered 2 times with 20 participants total
  - en fr ar es ru

Courses Delivered - Detailed (click to expand)
ICAO GLOBAL AVIATION TRAINING

• CAAMP
  Civil Aviation Authority Master Plan

• HRD
  Human Resource Development

• PTE
  Post Training Evaluation

• Training Effectiveness

• ISD
  Instructional System Design

• TPP Methodology

• Quality Assurance

• iMPLEMENT
  Solution Center

• iStar

• ICAO Data+

• Aviation Forecast

• TPeMS
  TRAINAIR PLUS electronic Management System

• LMS
  Learning Management Systems

• TNA
  Training Needs Analysis

• OPA
  Organizational Performance Analysis

• ATED
  Aviation Training & Education Directory

• ACPP
  Aviation Career Path Portal
Essential Component 2 (EC: 2)

Tool that presents in a dynamic and graphical environment the air transport statistic data collected from its 192 Member States.

Provide accurate, reliable and consistent aviation data so that States, international organizations, aviation industry, and other stakeholders can:

- make better projections;
- control costs and risks;
- improve business valuations; and
- benchmark performance.
Includes the following apps:

- **Air Carrier Traffic**: Covers monthly or annual traffic of aircraft movements, number of passengers embarked and disembarked and tons of freight and mail loaded and unloaded.

- **Traffic by Flight Stage**: Covers annual traffic on-board aircraft of international scheduled services.

- **Air Carrier Finances**: Shows international scheduled airlines financial data, including revenues and expenditures for the year (calendar or fiscal) well as summary traffic data.

- **Airport Traffic**: Covers monthly or annual traffic data for major international airports.

- **On Flight Origin and Destination**: Shows on an aggregate basis the number of passengers, freight and mail tonnes carried between all international city-pairs on scheduled services.

- **Air Carrier Personnel**: It deals with the personnel data of airlines. The data consist of statistics on the number of airline personnel by job category and the annual expenditures for these personnel.

- **Air Carrier Fleet**: It covers the fleet data of airlines. The data consist of statistics on the number and types of aircraft operated, their capacity and their utilization.
TRAINAIR PLUS electronic Management System (TPeMS)

- **Learning Management**
  - Virtual Classroom/Mobile Learning
  - Embedded e-learning and blended learning
  - Track On-the-Job Training

- **Informal Collaborative Learning**
  - Communities of Practice (CoPs)
  - Testing (Level 2)
  - Social learning
  - Learning using “Serious games”

- **Competency Management**
  - Job Analysis
  - Job Catalogue

- **Training Management**
  - Training Content
  - Training Delivery
  - Training Evaluation (Level 1, 2 and 3)

- **Communication and Reporting**
  - Networking
  - Statistics and Report
  - Surveys and Polls

- **Training Development Management**
  - Methodology Validation
  - Content Validation

- **HRD Expert Management**
  - Instructional System Designer (ISD)
  - Training Validator
  - Instructor
  - Training Centre Assessor

- **Training Centre Management**
  - Assessment
  - Membership (Associate/Full/RTCE)

- **Communication and Reporting**
  - Networking
  - Statistics and Report
  - Surveys and Polls

Learning Management System (LMS)

Trainee perspective

Administrative perspective

Essential Component 3 (EC: 3)
Training Needs Analysis (TNA)

- Conduct Organizational Performance Analysis (OPA)
- Identify performance problems
- Analyze Job
- Gather data from stakeholders
- Analyze data and training strategies
- Create Training Needs Analysis (TNA) Report
Regional TNA Accounts – PHASE 1

Since 2017

- Asia Pacific: 18
- EASTERN AND SOUTHERN AFRICA: 14
- EUROPEAN AND NORTH ATLANTIC: 10
- Middle East: 11
- NORTH AMERICAN, CENTRAL AMERICAN AND CARIBBEAN: 11
TNA - Phase 2 - 2019

✓ Dynamic data management

✓ Links to ICAO or external information systems hosting regional or national data on air transport growth and HR needs

✓ Links to data and results of Universal Security Audit Programme (USAP), USOAP - Continuous Monitoring Approach (CMA), and the Monitoring and Assistance Review Board’s (MARB) significant safety concerns (SSCs) and significant security concerns (SSeCs)

✓ Links to data on results of CE4, CE7, CE 8 - majority of States are below 60%

✓ Dynamic link to available training solutions
TNA Web-based Tool
Essential Component 5 (EC: 5)

- **Aviation Training & Education Directory (ATED)**
  - Training Centres
  - Education Institutions
  - Training Courses
  - Programmes

- **Aviation Career Path Portal (ACPP)**
  - Example: Airworthiness Civil Aviation Safety Inspector

## Accelerated Career Path
3 years 4 months ↓

### Previous Career Path

- **Stage 1**
  - CA-CASI (Entry Level)
  - Aircraft Maintenance ATO Training (2 years)
  - Industry experience (5 years)

- **Stage 2**
  - CA-CASI (Entry Level)
  - CAA Recruitment (recruitment: 3-6 months)
  - 7 years 6 months
  - Industry experience (5 years)

- **Stage 3**
  - CA-CASI (Competent)
  - 5 years 11 months
  - Industry experience (5 years)

- **Stage 4**
  - CA-CASI (Entry Level)
  - 3 years
  - Industry experience (5 years)
AVIATION TRAINING AND EDUCATION DIRECTORY

Training:
- Training Area
- Geographic Location
- Centre Type
- Delivery Type
- Language
- Additional features

Education:
- Area of Study
- Academic Services
- Geographic Location
- Language
- Institution Type
- Programme Delivery
- Education

Courses:
- Course Categories
- Geographic Location
- Course Topic
- Course Delivery
- Tuition & Registration
- Duration & Schedule

Programmes:
- Programme
- Degree Conferred
- Tuition & Registration
- Programme Delivery
- Programme Topic

Programmes:
- Training Centres
- Educational Institutions
- Training Courses
- Programmes
TRAINAIR PLUS Methodology - Instructional System Design (ISD)

**Essential Component 6 (EC: 6)**

**STAGE 1** Analysis
- Preliminary Study/Organization
- Job Analysis
- Target Population Analysis

**STAGE 2** Design and Development
- Design of Curriculum
- Design of Modules
- Production

**STAGE 3** Evaluation
- Validation Delivery

**Objectives**
- Organization’s Objectives
- Job Performance Objectives
- Training Objectives
- Desired Reactions Objectives

**Implementation**

**Training Effects**
- **LEVEL 1** Reactions
  - Trainees’ Reactions Effects
- **LEVEL 2** Learning
  - Learning Effects
- **LEVEL 3** Behaviour
  - Job Performance Effects
- **LEVEL 4** Results
  - Operational Effects
Effective instructional system (EC: 7) - L3 PTE
Post-training related questions in the workplace ...

What happened *after* the course?

Was the Organization able to obtain *better results* due to this training?

Did participants develop and apply the *desired competencies*?

Was the *trainee’s performance* improved?
The fundamentals of training effectiveness

- Training has to provide expected results
- Evaluating training effectiveness sheds light on four aspects, as follows:
  - How well the training program met the learner’s needs and objectives
  - What knowledge and skills it has provided to learners
  - What desirable change has it brought to the learners’ performance
  - What organizational benefits has it yielded
Training performance curve

- **Level 1 Evaluation:** Reaction to training
  - Return to the workplace and transfer to performance of duties

- **Level 2 Evaluation:** Learning
  - Assimilation and Comprehension

- **Level 3 Evaluation:** Professional Behaviour and Transfer to the Workplace
  - Transference

- **Level 4 Evaluation:** Operational improvements
  - Integration

**Transformation of human capital into an organization's intellectual capital**
Automated Training Course Evaluation

Validating Competency-based Training (VCT) 1 Oct - 5 Oct, 2018

Session Details
The Validating Competency-based Training course will provide training centres with internal validation capabilities for the development and evaluation of competency-based training.
# Essential Component 7 (EC: 7)

## Level 3 Post Training Evaluation (L3 PTE) Methodology

<table>
<thead>
<tr>
<th>Evaluated Impact Dimensions</th>
<th>Relative Weight</th>
<th>Impact Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work Environment and Culture of Collaboration</td>
<td>W1</td>
<td>10%</td>
</tr>
<tr>
<td>Occupational Safety and Health</td>
<td>W2</td>
<td>15%</td>
</tr>
<tr>
<td>Transferability to the Job</td>
<td>W3</td>
<td>15%</td>
</tr>
<tr>
<td>Professional Competence attained under Real-Life Conditions</td>
<td>W4</td>
<td>25%</td>
</tr>
<tr>
<td>Productivity and Operational Efficiency under Real-Life Conditions</td>
<td>W5</td>
<td>25%</td>
</tr>
<tr>
<td>Working Conditions and Professional Career</td>
<td>W6</td>
<td>10%</td>
</tr>
</tbody>
</table>

### Overall Impact on Professional Performance

- **PTE Weighted Impact Index (WIN) Equation**

\[
\text{Win} = \frac{\sum_{i=1}^{6} \text{Impact Dimension Value (D)} \times \text{Relative Weight (W) i}}{100}
\]

Total PTE results are the accumulated total values of the Evaluated Impact Dimension values multiplied by the corresponding Relative Weight. The closer to 5 in the Win, the greater the impact of the training in the trainees’ opinions; the closer to 1, the lesser the impact.

### Specific Impact on Work Performance

- **WIN Equation**

\[
\text{WIN} = \sum_{i=1}^{6} \text{Impact Dimension Value (D)} \times \text{Relative Weight (W) i}
\]

The closer to 5 in the WIN, the greater the impact of the training in the trainees’ opinions; the closer to 1, the lesser the impact.
TRAINAIR PLUS methodological cycle

**OBJECTIVES**

- Organization’s Objectives
- Job performance Objectives
- Training Objectives
- Desired reactions (Objectives)

**EFFECTS**

- Effects on the Organization’s operations
- Effects on the job performance
- Effects of learning
- Trainees’ reaction (Effects)

**ISD – PTE**

1. **Step 1** Preliminary study
2. **Step 2** Job analysis
3. **Step 3** Target population analysis
4. **Step 4** Design of curriculum
5. **Step 5** Design of modules
6. **Step 6** Production & experimental testing
7. **Step 7** Evaluation

**Level 1**

- Post-training evaluation
- Implementation
- Step 7 Evaluation

**Level 2**

- Post-training evaluation
- Implementation
- Effects of learning
- Trainees’ reaction (Effects)

**Level 3**

- Post-training evaluation
- Implementation
- Effects on the job performance

**Level 4**

- Post-training evaluation
- Implementation
- Effects on the Organization’s operations
ICAO GLOBAL AVIATION TRAINING

ICAO AVIATION TRAINING INTELLIGENCE™

- CAAMP
  Civil Aviation Authority Master Plan
- HRD
  Human Resource Development
- PTE
  Post Training Evaluation
- Training Effectiveness
- ISD
  Instructional System Design
- TPP Methodology
- Quality Assurance
- IMPLEMENT
  Solution Center
- iStar
- ICAO Data+
- Aviation Forecast
- TPeMS
  TRAINAIR PLUS electronic Management System
- LMS
  Learning Management Systems
- TNA
  Training Needs Analysis
- OPA
  Organizational Performance Analysis
- ATED
  Aviation Training & Education Directory
- ACPP
  Aviation Career Path Portal
Civil Aviation Authority

Strategic document that include the fundamental information about aviation in the State upon which the Roadmap will be developed, such as:

- a list of existing aviation activities in the State;
- a list of planned activities in short; mid-/long-term;
- existing aviation infrastructure;
- existing aviation service providers;
- planned changes in aviation infrastructure;
- planned changes in the aviation market;
- the institutional system of the State;
- expected changes affecting the institutional system of the State;
- State’s aviation strategies;
- State’s aviation development plans; and
- State’s performance targets (safety, security, environment, state’s objectives, etc.).

Master Plan (CAAMP)
Aviation Plans (Examples)

ICAO Global Air Navigation Plan 2016-2030 (GANP)

ICAO Doc 10004, Global Aviation Safety Plan 2017-2019 (GASP)

ICAO Global Aviation Security Plan (GASeP)

Regional Air Navigation Plans

National Air Navigation Plans
Human Resources Development

- **Objectives and challenges:**
  - Develop more people to meet specific performance **effectively and efficiently**
  - Build new competencies for specific performance **continuously**
  - Align the HR development strategy with the State’s Aviation Master Plan

- **HR strategies and techniques:**
  - Competency-based recruitment and training
  - Training development strategy based on TNA
  - Career development plan
Aviation Training Intelligence™ – Benefits

- Assists executives, managers and other corporate end users to make informed business decisions.
- Improves efficiency.
- Assists in turning data into actionable information.
- Allows successful strategical planning, having access to key trends and patterns in data.
- Focuses on areas of training requirements from the aviation industry.
- Reports regarding effectiveness of training solutions.
- Saves money, leading to a sound ROI.
- Ensures compliance is aligned in accordance with international requirements and best practices.
Training Intelligence Integrated System

Systems Architecture
TRAINAIR PLUS Network

TPeMS 2.0

Data Warehouse / Analytics

Single Sign-On

API

API

Single Sign-On

Data Sharing

Post Training Evaluation (PTE)

Instructional System Design (ISD) Tool

Training Needs Analysis (TNA) Tool

Aviation Career Path Portal (ACPP)

SME Roster - Portal

Scholarships - Portal

Alumni Portal

TPeMS Redesign

ATED

Learning Management System (LMS)

Professional Qualification Process

Case Study Digital Library (CSDL)
Capacity Improvement through ATI™

- EC1/EC2: Aviation Data-Driven Decision Making Course (AD3MC)
- EC1-EC8: Managing Aviation Training Intelligence (MATI)
- EC8: Senior/Middle Managers Training Programme (SMMTP)
- EC7: Post-training Evaluation Course & OJT
- EC6: Validating Competency-Based Training (VCT)
- EC5: Interface with TPP Members Portfolio
- EC4: Training Needs Analysis OJT
- EC3: Training Management Course (TMC)
- EC2: Training Instructor Course (TIC)
- EC1: Training Development Course (TDC)
- Training Instructor Course (TIC)
- Training Development Course (TDC)
- Training Needs Analysis OJT
- Interface with TPP Members Portfolio
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THANK YOU!