

ICAO TRAINING REPORT

NEWS AND FEATURES ON CIVIL AVIATION-RELATED TRAINING DEVELOPMENTS - VOL. 6 - NO. 2



ENSURING DREAMS TAKE FLIGHT

Attracting, educating and retaining the next generation of aviation professionals

IN THIS ISSUE

FOSTERING GROWTH
OF AVIATION PROFESSIONALS

PERFORMANCE AND TRAINING
NEEDS ASSESSMENTS

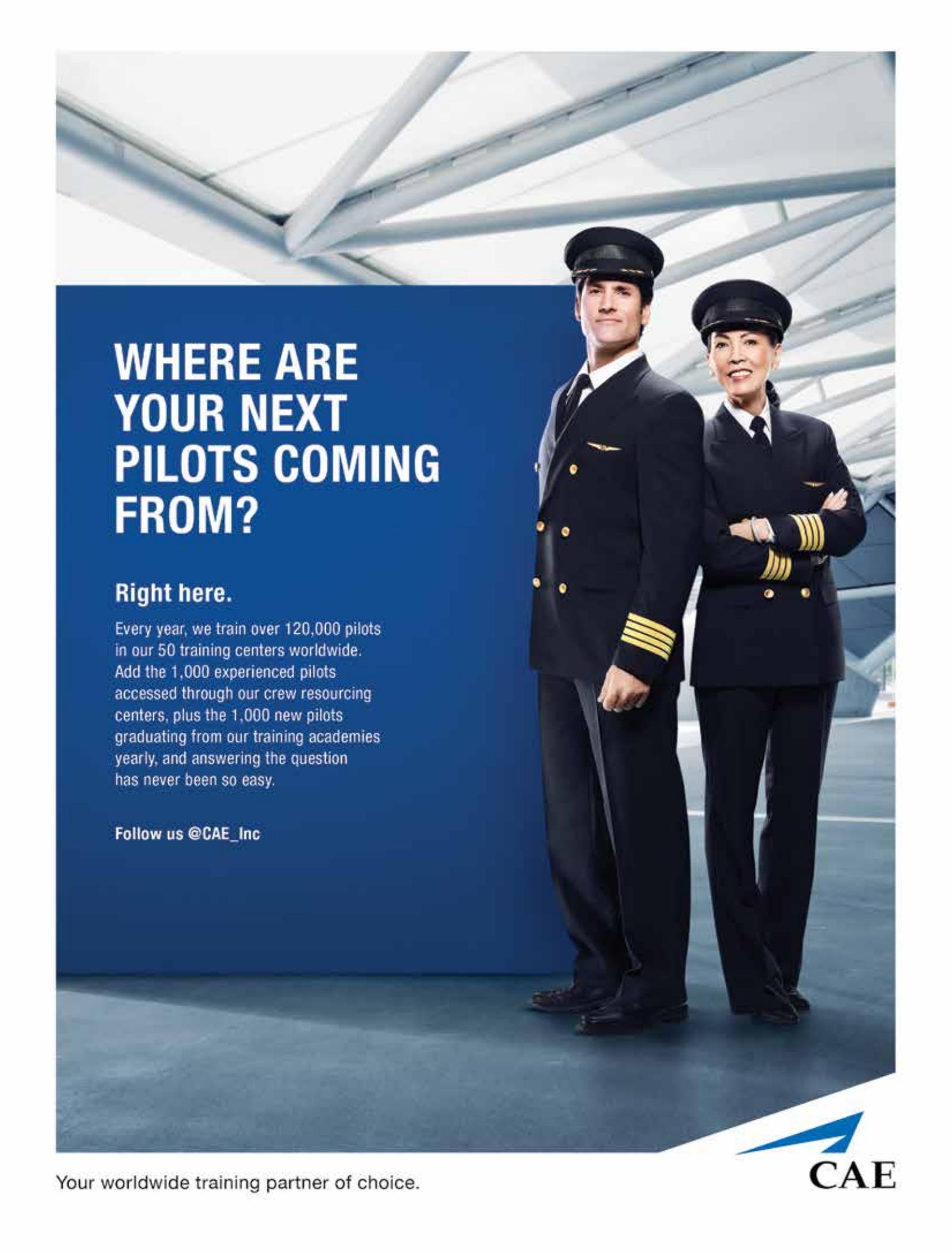
LEVERAGING TECHNOLOGY
FOR IMPROVED TRAINING

COMPETENCY-BASED
TRAINING METHODOLOGIES



ICAO

UNITING AVIATION

A man and a woman in dark blue pilot uniforms with gold stripes on the sleeves and caps stand in front of a large aircraft hangar. The man is on the left, looking towards the camera. The woman is on the right, smiling and looking towards the camera. The background shows the structural beams of the hangar.

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The ICAO Training Report encourages submissions from interested individuals, organizations and States wishing to share updates, perspectives or analysis related to global civil aviation. For further information on submission deadlines and planned issue topics for future editions of the ICAO Training Report, please contact Hervé Touron, Editor-in-Chief at: htouron@icao.int

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Dr. Fang Liu

SUSTAINING THE FUTURE OF CIVIL AVIATION

✈️ As the air transport industry continues to drive global economic growth, and the industry as a whole concentrates on safety, technological advances, environmental performance and passenger and market demands, the emerging shortages of skilled aviation professionals becomes a greater concern. The projected wave of retirements will eliminate a large proportion of the current generation of aviation professionals from the industry's human resources at the same time aviation is competing with other industry sectors for highly-skilled professionals and access to affordable training and education.

The lack of harmonized competencies in some aviation disciplines and a lack of awareness of the variety and reality of careers in aviation amongst youth are further threatening the sustainability of the global aviation network's workforce. To respond to this critical threat, ICAO's Next Generation of Aviation Professionals (NGAP) programme is contributing to State efforts to ensure that enough qualified and competent aviation professionals are available to operate, manage and maintain the future international air transport system.

The programme grew out of the industry's concern about the projected shortages of aviation professionals. Over the next twenty years, the industry will need more than a million new

professionals (pilots and technicians), a number that is expected to continue to grow each year. Industry raised the issue with ICAO in 2009, driving us to organize a consultation meeting with key stakeholders. From this meeting we created the NGAP initiative, which has since become a fully-fledged ICAO programme that is being progressively integrated in our Global Aviation Safety Plan (GASP) and Global Air Navigation Plan (GANP).

Responding to these human resource challenges calls for more than establishing requirements; it identified a need for reaching out to youth. NGAP provides us with a platform where we can engage with stakeholders on the impending shortages and assist the global aviation community in attracting, educating and retaining the next generation of aviation professionals. States, academia and industry have acknowledged the importance of the programme and the need for continuously supporting and strengthening it. In turn, ICAO is considering how the programme can be further integrated into its strategic objectives.

Broadly speaking, promoting aviation as an attractive career option for youth begins by opening communication within the aviation community, and initiating cooperation with educational bodies. We need to target students as early as possible through science, technology, engineering and math (STEM) initiatives. Education in these areas provides children with problem-solving abilities, analytical skills and the drive to innovate. The relevance of these classroom skills can easily be demonstrated in their everyday lives, and these "real-life" applications encourage the development of a virtuous cycle of curiosity and learning.

With our partners we are currently promoting aviation by participating in various aviation mediums; developing communication and publicity tools; and engaging directly with students and educators. This work, which targets youth of all ages, is being undertaken by an extensive network of volunteers that include industry experts, technical and training experts, and educational professionals who are coordinating through NGAP.

Recently we participated in two events that support this initiative: the Student Education and Careers in Aviation (SECA) Stream of the World Aviation Training Conference and Tradeshow (WATS) that took place in Orlando, Florida on 21 April 2016, and the first ever Youth Aviation Forum that was held in Cameroon in February of this year.

Our participation in WATS was facilitated by our collaboration with the Halldale Group, the University Aviation Association (UAA) and the NGAP Outreach Working Group Chair. The day's events included a panel session which featured representatives from manufacturers, airline management, cabin crew and ICAO and allowed for interaction with training organizations in the exhibit hall, as well as an afternoon session that enabled students to interact directly with aviation professionals and discuss real-life experiences and scenarios. In light of the event's success, ICAO, the NGAP Outreach Working Group and Halldale hope to collaborate on future SECA events around the world.

“Responding to these challenges calls for more than establishing requirements; it identified a need for reaching out to youth.”

The Youth Aviation Forum was organized under the initiative and leadership of the Young African Aviation Professional Association (YAAPA). With support and representation from ICAO and IATA, students of all ages learned about aviation and the variety of aviation professions available. Discussions also covered gender equality and the need for fostering cooperation amongst African States on aviation issues. YAAPA plans to hold more events in the region and to establish an exchange programme that would enable aviation professionals to have on-the-job experiences around the continent in a variety of aviation organizations and companies.

MOVING FORWARD

ICAO and its stakeholders intend to expand participation and involvement in NGAP projects, activities and events. To provide better access to information about our industry and better access to training and education in civil aviation – in short, to help the next generation take advantage of the fantastic opportunities that our sector offers – we need to understand the economic, cultural and social factors specific to each region and State that impact an individual's likelihood and ability to work in our industry.

Through NGAP, there are already representatives and supporters from various organizations, backgrounds, and States who are developing a robust platform for developing and sharing strategies for engaging youth, for encouraging them to pursue careers in aviation, and to retain them throughout their working careers. Our passion for civil aviation and our ability to share this with the next generation are key tools for achieving this. But the strength in the NGAP programme going forward is the fact that it offers us an equally, if not more important, tool: the ability to listen carefully to what they tell us about their aspirations so that we may respond in the most pertinent way possible. ■

Dr. Fang Liu
Secretary General of ICAO

THE NEXT GENERATION OF AVIATION PROFESSIONALS



MICHEL VREEDENBURGH

He is the Chief, Aviation Safety Implementation Planning and Support in the Air Navigation Bureau at ICAO Headquarters in Montreal and has nearly 30 years of international professional experience in aviation. He has also served the Organization as the Deputy Regional Director in the North American, Central American and Caribbean Office in Mexico City and as Project Coordinator of a Technical Cooperation Project in Bangkok.

✈ In 2015, there were 3.5 billion passengers carried on scheduled air services, a 6.4 per cent increase over the previous year. In this decade the industry will recruit 480,000 new technicians to maintain aircraft and over 350,000 pilots to fly them. According to Boeing's *Long Term Market Current Market Forecast 2015-2043*, over one million new pilots and technicians will be needed by 2034.

While the numbers are positive and the opportunities are exciting, this growth comes with a challenge – making sure there are enough trained pilots, air traffic controllers, engineers and aircraft maintenance specialists to sustain industry demands.

We have to take steps to ensure there are enough qualified and competent aviation professionals who can operate, manage and maintain the future international air transport system. This is critical, given that a large contingent of the current generation of aviation professionals will soon retire, access to affordable training and education is increasingly problematic, and aviation competes with other industry sectors for highly-skilled professionals. The lack of harmonized competencies in some aviation disciplines and a lack of awareness by the “next generation” of the types of aviation jobs available, further compound the problem.

The shortage of aviation professionals can be attributed to some of these factors:

- retirements of the current generation of aviation professionals;
- aviation professions are not attractive enough to potential candidates;
- competition with other industry sectors for skilled employees;
- training capacity insufficient to meet demand;
- learning methodologies not responsive to new evolving learning style; accessibility to affordable training;
- lack of harmonization of competencies in some aviation disciplines; and
- little awareness by the “next generation” of types of aviation professions available.





In 2009, under the Next Generation of Aviation Professionals (NGAP) initiative, ICAO began working with key States and industry to address the forecast shortage of aviation professionals. NGAP was launched to create a platform where stakeholders could work together to bring greater awareness of the impending shortages of personnel, to forecast global and regional personnel needs, and to assist the aviation community as a whole, in attracting, educating and retaining the next generation of aviation professionals.

ICAO confirmed the critical need for this work when it elevated the NGAP initiative as an ICAO priority Programme and incorporated it in revised Global Plans, both for safety and air navigation, as well as the new ICAO Business Plan.

NGAP's **Vision** is to ensure the world's aviation community has sufficient, competent human resources to support a safe, secure and sustainable air transportation system. Our **Mission** is to develop strategies and the best practices, tools, standards and guidelines needed to facilitate information sharing activities that assist the global aviation community in attracting, educating, and retaining the next generation of aviation professionals.

For the NGAP Programme to be successful in achieving these goals, we need to work closely with States, international organizations, industry and academia to continue raising awareness on the importance of effective human resources

planning and development and gender equality, and we need to ensure a sufficient numbers of skilled aviation professionals will be available in the future to meet the industry's projected needs.

ICAO will continue to be involved in events like the Youth Aviation Forum that was held in Cameroon earlier this year and the Student Education and Careers in Aviation (SECA) Stream of the World Aviation Training Conference and Tradeshow (WATS) that took place in Florida in April.

We are also pleased to be supporting the Dreams Soar Initiative, which is helping to promote both women and youth in aviation. Young Captain Shaesta Waiz, the first civilian female pilot from Afghanistan, is seeking to empower women around the globe in the Science, Technology, Engineering and Math (STEM) fields, as she makes her historic solo flight around the world in 2017. Along the route, Capt. Waiz will team with inspiring women, and together they will host outreach events focused on careers in STEM fields to encourage women worldwide to believe in themselves and to set important life-changing goals.

Initiatives like these are invaluable in attracting the next generation of aviation professionals. As we continue to work with our partners, our goal is to expand participation and involvement in projects, activities and events to engage and excite the next generation and ensure they benefit from the opportunities that will exist for them. ■

ICAO NGAP PROGRAMME OBJECTIVES

OBJECTIVE #1: PROMOTE AVIATION AS A DESIRABLE CAREER TO YOUTH

Deliverables:

- Develop and participate in global outreach activities that highlight the importance of aviation;
- Promote gender equality in aviation;
- Develop communication and publicity tools to raise awareness about the complexity of the aviation industry and the various career opportunities available;
- Engage directly with students and educators at various fora to promote STEM education and aviation professions.

OBJECTIVE #2: ESTABLISH A GLOBAL COMMUNICATION FORUM TO ASSIST STATES AND INDUSTRY STAKEHOLDERS IN IDENTIFYING THEIR LONG-TERM HUMAN RESOURCES NEEDS AND ESTABLISH STRATEGIES TO ATTRACT, EDUCATE AND RETAIN AVIATION PROFESSIONALS

Deliverables:

- Facilitate communication and cooperation with government education and labor bodies and the aviation industry to discuss the forecasted shortage of personnel;
- Work with the aviation community to identify future personnel and education needs and update and maintain a high fidelity forecast for aviation professionals;
- Encourage the aviation community to develop a strategy to engage and retain the next generation of aviation professionals.

OBJECTIVE #3: ASSIST STATES AND INDUSTRY BY PROVIDING GUIDANCE AND TOOLS FOR ENGAGING THE NEXT GENERATION AND PROMOTING AVIATION AMONGST YOUTH AS A VIABLE CAREER.

Deliverables:

- Promote best practices in attracting, educating and retaining the next generation of aviation professionals;
- Raise awareness on regional and global issues that impact the next generation of aviation professionals;
- Promote best practices that focus on meeting the needs and values of the next generation to enable employee productivity, performance, recruitment, retention, and safety.

NGAP WORKING ARRANGEMENTS

NGAP PARTNERS WILL MEET QUARTERLY (ONCE IN MONTREAL, THREE TIMES BY VIDEOCONFERENCE), TO:

- Engage in discussions about NGAP issues;
- Identify possible activities to support and/or promote the NGAP Programme;
- Discuss new initiatives/issues;
- Discuss and determine means for garnering technical and financial resources to support the Programme;
- Determine technical work required (may include establishing ad-hoc technical groups for the development of competencies or other issues);
- Disseminate and promote NGAP information (communications, symposia, international meetings); and
- Develop partnerships in order to support NGAP Programme objectives.

ICAO NGAP PROGRAMME WORKING GROUPS WILL:

- Develop tools and provisions for ICAO Contracting States and the international civil aviation community that will assist them in implementing effective strategies to attract, educate, and retain the next generation of civil aviation professionals at global and regional levels. Implementing the objectives and deliverables established by the NGAP Partners;
- Carry out new tasks identified by the NGAP Partners; and
- Report to the NGAP Partners on a regular basis regarding their activities and deliverables.



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PERFORMANCE NEEDS ASSESSMENT

THE INDISPENSABLE ELEMENT OF A COMPETENCY BUILDING STRATEGY



KRISTINA SCHNEIDER

Kristina Schneider is the Senior Director, Operations and Learning Services at Aviation Strategies International (ASI) in Montreal, Canada, overseeing the activities of the ASI Institute. She also manages the operations and educational technology for the Global ACI-ICAO Airport Management Professional Accreditation Programme (AMPAP). She holds an undergraduate degree in Communication Studies as well as a Master's degree in Educational Technology from Concordia University, and has recently completed a Graduate Diploma in Integrated Aviation Management at McGill University. She joined the team of ICAO TRAINAIR PLUS Training Development Course Instructors in 2012 and completed the Training Instructor Course in 2015.



TYING COMPETENCY BUILDING TO STRATEGY

Because people are an organization's greatest asset, it goes without saying that training and developing employees needs to be a key and explicit part of an organization's strategy. Of the many reasons why an organization should prioritize investing in their people, perhaps the most compelling rests in the fact that when done strategically, money spent on developing human capital boosts productivity more than any other spend. For aviation organizations, this would represent a major capital investment because it is imperative that those making decisions are equipped with the proper skill set and competencies to make the right decisions.



It is concerning that recent research from PricewaterhouseCoopers found that less than half of the Human Resources leaders polled are very confident they will have access to the right talent to execute their business strategy.¹ Attracting, selecting, developing, rewarding, and retaining the best talent possible is vital.

While the first step is attracting and selecting the best people, it is also important that these individuals are developed through a robust competency building process to ensure the best return for an organization's human capital investment. Competent employees become more productive and when their accomplishments are recognized and rewarded, they tend to stay with the organizations that develop and value them.

A COMPETENCY BUILDING STRATEGY SUPPORTS HUMAN RESOURCE CAPITAL DEVELOPMENT IN AN ORGANIZATION.

The key success factors for developing a competency building strategy include identifying the **organizational guiding principles**, conducting a **performance needs assessment**, and ensuring an **implementation and measurement plan**.



ORGANIZATIONAL GUIDING PRINCIPLES

Before embarking on a performance needs assessment, it is critical to set the tone. Identifying the **organizational guiding principles** would ensure that a competency building strategy reaches the impact that is both desired and needed, to address an organization's performance needs.

A competency building strategy must be tied to an **organization's corporate vision and direction**, as well as its **inherent organizational values**. It should be led by, and have the full support of, the organization's top management. In addition, the right stakeholders at all levels must be involved.

Organizational visioning requires **clearly articulated expected outcomes** as well as the efforts and processes required for reaching said outcomes. As with every other direction-setting exercise, an organization must clearly articulate, decide and support their desired competency building outcomes.

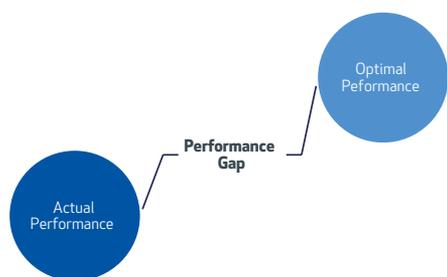
Successful organizations maximize their potential with competency development programmes to provide them with a sustainable competitive advantage: **the learning organization**. According to Senge, "Learning organizations [are] organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to see the whole together."² The key principle of a learning organization is transformation through systems thinking, primarily at three levels: aligning objectives and building a shared vision, empowering individuals and cultivating communities to stimulate innovation.

Transparency is a vital element of the process. In order to address performance issues, a clear identification of problem areas and organizational performance issues is required. The organizational climate must promote an openness to discussing needs and issues and an environment that allows for all employee voices to be heard.

PERFORMANCE NEEDS ASSESSMENT

THE PERFORMANCE GAP

A **performance needs assessment** forms the basis for structured learning and development. It systematically identifies the standard of performance that is being achieved, or actual performance, and the standard of performance required, or optimal performance. The difference between these two performance levels is the **performance gap**. Analysing the gap can be challenging in that it is sometimes quite



clear where the deficiencies are, but it is not always obvious why the deficiencies occur, and at times, the causes of the deficiencies are misidentified.

“...it is sometimes quite clear where the deficiencies are, but it is not always obvious why the deficiencies occur, and at times, the causes of the deficiencies are misidentified.”

THE ORGANIZATIONAL X-RAY

An **organizational x-ray** is a systemic analysis which provides a high-level perspective of the performance issues within an organization. The x-ray requires interviewing senior management, collecting existing documentation such as position descriptions and general background information on the organization and/or division. Past and current learning and development initiatives, as well as their results can also provide useful insight.

A **performance needs assessment** distinguishes itself from the traditional training needs assessment, in that it focusses on all the interdependent elements that affect performance. All too often, performance issues are linked to outdated processes and procedures or job descriptions that are not a right fit with operational and business needs.

THE CRITICAL INCIDENT TECHNIQUE

The **critical incident technique** is employed to identify the precise flaws in actual performance, essentially digging deeper into performance issues. Through qualitative observation of human

performance, rich and contextualized data that describe real-life situations emerge, more than with a traditional task analysis. The findings provide insight on why the performance gap is occurring, as well as what could be done to close it.

Shortly before creating the technique, John Flanagan made the following observation:

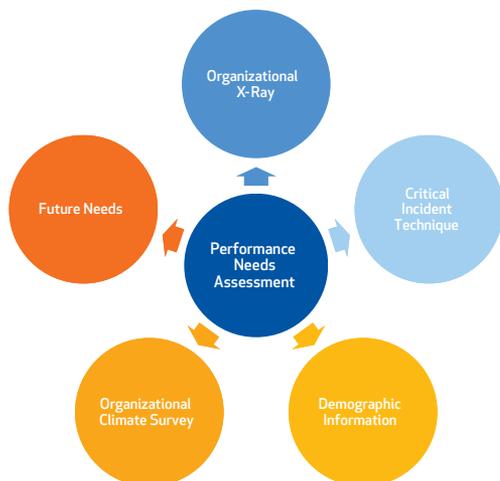
Too often, statements regarding job requirements are merely lists of all the desirable traits of human beings. These are practically no help in selecting, classifying, or training individuals for specific jobs. To obtain valid information regarding the truly critical requirements for success in a specific assignment, procedures were developed in the Aviation Psychology Programme for making systematic analyses of causes of good and poor performance.

*Essentially, the procedure was to obtain first-hand reports, or reports from objective records, of satisfactory and unsatisfactory execution of the task assigned. The cooperating individual described a situation in which success or failure was determined by specific re-reported causes.*³

The results of the critical incident technique should be measured against an optimal performance standard. Such a benchmark can be obtained through research on the workforce structure of an optimally performing organization in order to generate further information about the knowledge, skills, abilities and other personal characteristics (KSAOs) that are critical to performing the various target jobs.

THE POPULATION ANALYSIS

Collecting **demographic information** on the people to be developed is not only useful but necessary to best tailor a competency building programme with maximum results. It is also critical to get their input through focus groups, interviews and/or surveys to better understand their needs. Furthermore, an **organizational climate survey** provides insights on employee perceptions about their working environment and how this affects their own individual performance.



“...an organizational climate survey provides insights on employee perceptions about their working environment and how this affects their own individual performance.”

PLANNING FOR GROWTH

As much as looking at the background is critical, forward-looking organizations must take into account their **future needs** when analysing a performance gap. This would require looking at any upcoming projects, all forthcoming regulatory changes and strategic plans.

IMPLEMENTATION AND MEASUREMENT PLAN

Implementation and measurement are iterative processes that require adjustment along the way. It is also key to refer back to the organizational guiding principles, as well as the optimal competency profile.

The **implementation plan** incorporates recommendations for a variety of approaches to meet the competency building needs. It also identifies priorities in relation to the whole and its divisions. It indicates what competency building programmes need to be custom built, in addition to which learning and development programmes already exists, as well as optimal suppliers.

A **measurement plan** will take into account many aspects when assessing the success of a competency building strategy. Using a balanced scorecard approach, it should consider **key performance indicators** (KPIs) related to elements such as financial measures,

customer satisfaction, internal business processes, and learning and growth. Most importantly, one cannot fix what they cannot measure, therefore the measurement plan must be defined at the project outset.

IMPACT ON MISSION AND BOTTOM LINE

While many factors interdependently affect an organization's bottom line, the proper development of a measurement plan from the project offset can enable organizations to better pinpoint what degree the performance improvement initiatives have had on the bottom line.

OPERATIONAL PERFORMANCE

Improvements in operational performance can be observed rather easily, especially if a snapshot of performance is taken before and after all performance improvement interventions. In order to deem an intervention successful, changes must be visible and impactful.

CUSTOMER SATISFACTION

Perhaps one of the best metrics for measuring success is the customer's appreciation of improved performance and this can be done by comparing previous surveys and testimonials with new data collected.

EMPLOYEE SATISFACTION

If we consider that employee satisfaction impacts employee retention positively, and we recall that one key problem is to measure a competency building strategy on its impact and capacity to retain high performing talent, then this might be one of the most important measures.

TAKING A SYSTEMIC AND INTEGRATED APPROACH

Organizations have become advanced in terms of developing master plans for infrastructure, as well as with acquiring state of the art technology and equipment. Equal planning efforts and investment are required to select and develop the people who will ultimately drive the organization forward. Talent management and development is a strategic issue which requires a systemic and integrated approach in order to ensure optimal organizational performance. ■

¹ PricewaterhouseCoopers - Key trends in human capital 2014

² Senge, P.M. (1990). *The Fifth Discipline: The Art and Practice of the Learning Organization*. New York: Doubleday/Currency.

³ Flanagan, J. C. (1947) *The aviation psychology programme in the Army Air Forces*. Washington: U. S. Government Printing Office. (AAF Aviat. Psychol. Programme Res. Rep. No. 1)



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USING TECHNOLOGY IN TRAINING ACTIVITIES

HOW THE IATA TRAINING AND DEVELOPMENT INSTITUTE HAS INCORPORATED TECHNOLOGY IN ITS TRAINING OFFERING TO BETTER SERVE THE INDUSTRY



GUY BRAZEAU

He is IATA's Director of the Training and Development Institute and IATA Consulting and has more than 35 years of experience in aviation, 30 of which have been at the international level. Mr. Brazeau has worked as a project director, lecturer and consultant in more than 45 States on airport and civil aviation-related projects and lectured the Airport Management course at Canada's McGill University.

✈️ With increasing global access to ever-more robust high-speed Internet connections, technology is becoming an integral and dominant part of our daily lives — from how we communicate to how we learn. Training for aviation professionals is no exception. As one of the leaders in this area, offering more than 300 courses encompassing all areas of the industry, the IATA Training and Development Institute (ITDI) has placed technology at the core of its training design and delivery strategy, seeking to make its courses the gold standard in aviation training.

THE INCREASING DEMANDS FOR AVIATION TRAINING

Training providers in the aviation industry must cater to a demand whereby both the number of skilled personnel, and the breadth of the skills they require, continue to increase. This is no small challenge.

The International Civil Aviation Organization (ICAO), along with IATA, Airports Council International (ACI), the Civil Air Navigation Services Organization (CANSO) and other industry leaders, set global, regional and local training requirements so that our industry remains safe, secure, operationally efficient, cost-effective and environmentally sustainable. From this perspective, the main role of training providers in aviation is to ensure that current aviation professionals meet these requirements and that they maintain and improve their knowledge and skills in our fast-changing industry.

On the other hand, the same training providers must ensure that younger generations are enticed by careers in aviation and can easily access training to acquire the knowledge and skills needed to support the industry around the globe.

To meet this dual challenge, aviation training must be both effective and efficient. It must allow for a rapid transfer of the required know-how and aptitudes from subject matter experts to aviation professionals. Furthermore, it must be easily accessible and flexible, while providing a reasonable return on investment. IATA understands this reality and, as part of our vision to be the force for value creation and innovation, we have chosen to integrate leading-edge technologies in the development and delivery of our courses to enhance our global reach and facilitate access to aviation knowledge.

THE CHANGING FACE OF TRAINING

With advancements in technology and changes in the learning styles of younger generations of aviation professionals, the design and delivery of training is also rapidly changing. From the traditional classroom setting to other forms of training – such as the use of games and simulation to develop greater critical-thinking and

problem-solving skills, eLearning, eBooks, and online assessments – training is certainly evolving.

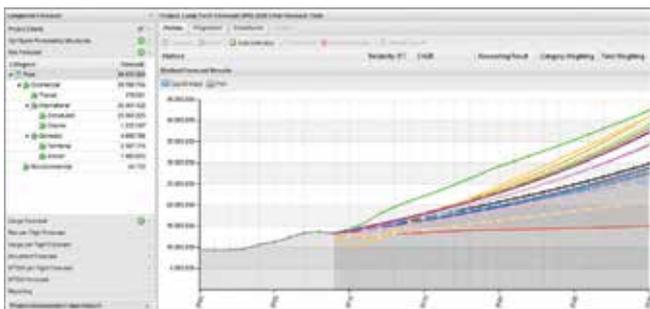
In Africa there has been a ten-fold increase since July 2009 in the availability of reliable bandwidth. In addition, access to Internet services is now reaching many previously underserved States on the continent following the inauguration of the African undersea fibre optic cable. As a result, the number of handheld devices and smartphones have sharply increased, opening the door for IATA and other leaders in this field to make e-training more accessible, thereby diminishing the chance that any country will be left behind.

SIMULATION-BASED SCENARIOS IN TRAINING

The use of simulation in the aviation industry is certainly not new. It has been known through several decades with the use of flight simulation training devices for pilot and air traffic controllers. With continuing technological and pedagogical advancements, the successes of simulation training have been recognized by both educational institutions and businesses that have adapted this technology to their specific needs.

More than 15 years ago, IATA incorporated technology-based virtual simulation exercises into its *Airline Business Models and Competitive Strategies* course (formerly known as *Airline Business Management*), which now uses the latest simulation technology to manage a virtual airline in real-life business scenarios. The aim is to demonstrate in-depth understanding of market conditions, strategic insight and tactical acumen. The most up-to-date adult learning principles are used and students are required to work in teams to explore and manage the interrelated factors affecting airline profitability.

Technology-based simulation exercises like these allow individuals to experience the practical adaptation of theoretical learning. They are put in a situation with defined parameters and are required to achieve business growth using concepts, principles, techniques and strategies which they learned in the theoretical training sessions.



More recently, IATA expanded its technology-based simulation capability by adding to its training portfolio the *Airport Strategic Management with Business Simulation* course conceived



specifically for senior management. Following seven days of theoretical learning, course participants are assigned a managerial role in an airport, and over three days they are asked to use simulated systems that replicate a real-business and operational environment. The students have to make strategic planning and operational decisions in order to successfully achieve positive business outcomes at the conclusion of the simulation.

The use and adaptation of simulation technology at IATA also goes well beyond training. Indeed, it is also being developed and successfully used through partnerships in the area of consulting business. The simulation allows for real-world application of projected scenarios, both present and future. A recent example includes a consulting initiative intended to alleviate congestion and delays at the El Dorado Airport in Bogotá, Colombia. The simulation study involved the redesign of airspace, the optimization of airside capacity, and air traffic management systems. Similarly, a Level of Service assessment study was carried out for the Bonaire International Airport N.V., in Bonaire, Dutch Caribbean, in preparation of a planned expansion of the existing passenger terminal.

eLEARNING AND THE VIRTUAL CLASSROOM

In October 2015, IATA, in collaboration with Harvard Business Publishing, launched its inaugural eLearning and virtual classroom

course in Aviation Leadership Development; a real-time, cohort-based virtual learning workshop that allows students to participate in live training sessions using online video and messaging no matter where they are in the world. The success of this new training medium is apparent in the high number of participants who have already enrolled. The learning medium opens new doors to the realm of knowledge transfer, keeping the costs to a minimum for the learner, reducing time away from the office, and cutting out the costs for travel and accommodation usually associated with in-classroom training.

ONLINE ASSESSMENTS

IATA is also capitalizing on adaptations to existing systems through the implementation of online exams in the Travel and Tourism sector that make the examination process faster, more efficient, and more cost-effective. There was some initial skepticism from both students and instructors, raising questions mostly about connectivity and potential disruptions in areas of the world that have less reliable power and Internet connectivity. However, the feedback received after the pilots were held in the Americas and the Middle-East have been very positive.

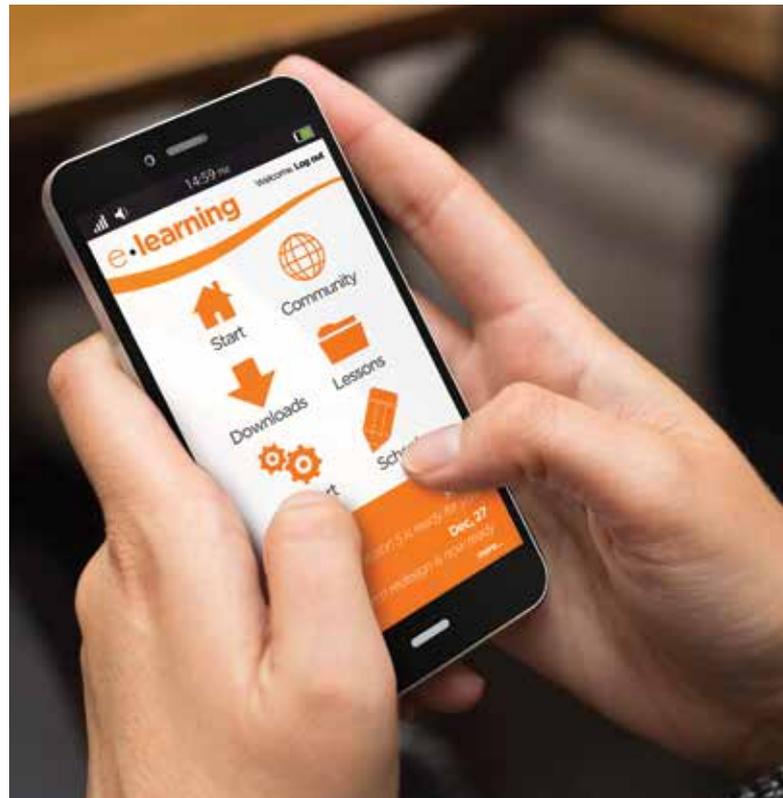
A tutorial introduces students to the online exam process and demonstrates the functionality and capabilities of this technology. Students are able to replicate the real-life examination experience to ensure they are comfortable when they eventually sit for an online exam. This new functionality will continue to be rolled out for IATA's self-study courses and with IATA's global training partners.

CONTINUING NEED FOR INSTRUCTOR-LED SESSIONS

As we strive to sustainably connect and enrich our world, complete replacement of face-to-face classroom training is improbable. There are benefits associated with interpersonal, face-to-face dialogue and networking that are difficult to replace with an entirely remote learning scenario. IATA has chosen to diversify its approach and capitalize on the most appropriate learning medium for the subject matter, the format of the knowledge transfer, and the background of the trainees to accommodate a range of adult learning styles.

SUSTAINABLY CONNECTING AND ENRICHING OUR WORLD

The use of technology by IATA assists to connect and enrich our world. As new technology is introduced and continues to be developed for our industry, the opportunities for incorporating technology into our learning sphere continue to grow, making it much easier for people to connect and for us to reach them faster than ever before. We can improve our methodologies and platforms quickly, as we have more interactions with more individuals, allowing us to transfer knowledge more efficiently in a variety of ways globally, leaving no country behind. However, we need to be cognizant that these efforts will gain the greatest advantage for our industry if they are supported by a global collaboration among all key international aviation training institutions. That is the best way to provide this generation of aviation professionals – as well as the next on – with quality, relevant and accessible training. ■



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TRAINING NEEDS ASSESSMENT — YOUR KEY TO SUCCESS



KEVIN CARON

He is the Head of the Global Training and Developing Nations Airport (DNA) Assistance Programme for ACI World. He serves on the ACI-ICAO Airport Management Professional Accreditation Programme (AMPAP) Steering Committee as ACI Team Leader. Prior to ACI, Kevin spent eight years with the Montreal Airports Authority (Aéroports de Montreal) before joining IATA in 2003, where he held two training management positions in security and airports.

✈️ As aviation training professionals we know the importance of conducting a training needs assessment (TNA). This cannot be overemphasized, since TNAs are used to identify whether training is the correct intervention for a performance problem.

On an annual basis, to ensure we are continuously meeting the needs of our members and the professionals they hire to lead and operate the worlds' airports, ACI carries out several TNAs. In looking at the specifics of conducting a TNA, it is important to understand how it will be used in the larger setting of addressing performance issues.

One example of this would be an airport with low customer service survey scores on the Airport Service Quality (ASQ). Before determining how to fix a performance issue, they first need to know what the desirable performance outcome is. What customer service level is expected? What is the cause(s) of the low survey numbers? Possible scenarios could be attributed to equipment issues, unclear expectations, lack of knowledge of skills or a result of a poor attitude or low motivation. In this scenario, training would be an appropriate intervention if the performance issue is caused by a knowledge or skill gap.

A TNA IS THE PROCESS FOR DETERMINING WHETHER TRAINING TO ADDRESS A PERFORMANCE GAP IS NECESSARY:

- Training might be appropriate when the performance issue is a “can’t do” issue:
- New/ updated aviation regulations or policies requiring new knowledge or skills;
 - i.e. Safety Management Systems
- A customer request for new products or services;
- New technology or poor performance (resulting from a knowledge or skill deficiency);
- Higher performance standards; and
- New jobs

TRAINING IS NOT THE BEST SOLUTION WHEN THE PERFORMANCE ISSUE IS A RESULT OF ISSUES RELATED TO:

- Internal policies and procedures issues;
- Recruiting, selection or compensation issues;
- A lack of coaching and feedback;
- Insufficient equipment or resources; and
- A lack of motivation (job-person fit; person-org fit); a “won’t do” issue

“In these cases there are other tools that the organization should evaluate, such as job redesign, increased feedback and removal of obstacles.”

In these cases there are other tools that the organization should evaluate, such as job redesign, increased feedback and removal of obstacles. If training is the route identified, three levels of analysis should be carried out to ensure the best training course is provided:

Airport level - Organizational Analysis

- To align training with business strategy and ensure there are resources and managerial support for training;

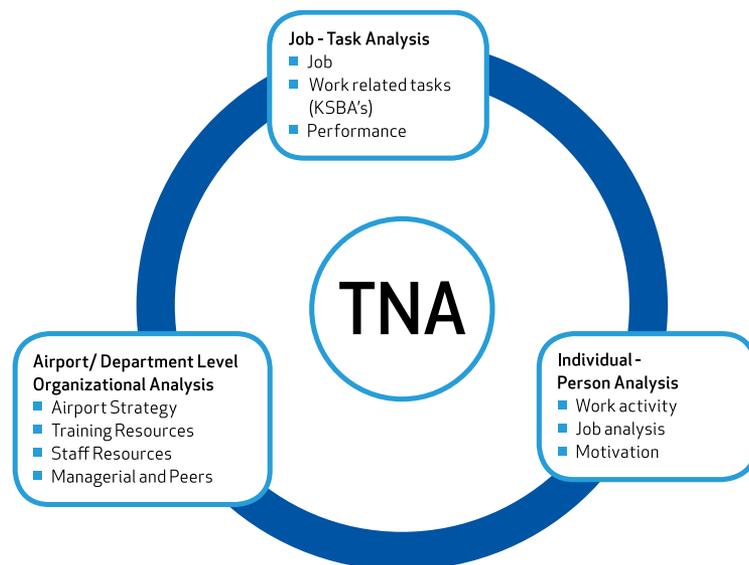
Job - Task Analysis

- To identify the important work-related tasks and knowledge, skills, behaviors, abilities (KSBA's); determine if the content and activities are consistent with trainee on-the-job experience; and to develop measurable and relevant content, objectives and methods;

Individual - Person Analysis

- To ensure that trainees have the basic skills, motivation, prerequisite skills or confidence.

In the next issue, I will provide examples of the actual design of the TNA. Until then, remember that if a training needs assessment is not conducted, a training programme may fail to clearly meet the airports performance need, which will result in diminishing returns on what is likely a costly investment. ■



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Incheon Airport Aviation Academy (IAAA)

FOSTERING THE GROWTH OF AVIATION PROFESSIONALS: MAPPING THE FUTURE OF THE AVIATION INDUSTRY.



DR. KANG, SUNG OK (NICK)

He joined Incheon International Airport Corporation (IIAC) in 2003 and currently holds a Senior Manager position at Incheon Airport Aviation Academy (IAAA). Dr. KANG has an academic background in mechanical engineering and earned a PhD in Aviation Industrial Systems Engineering. Since 2011, he has participated in developing several courses as an ICAO-qualified course developer, and also delivered courses as an instructor in the field of aerodrome systems engineering.

✈ Established in 2008, Incheon Airport Aviation Academy (IAAA) has strived to build a reputation for excellent training quality in a period of eight short years. As part of this effort, IAAA became a Full Member of ICAO TRAINAIR PLUS Programme in 2010 and was designated as a Regional Training Center of Excellence (RTCE) in mid-2014.

PRIORITIZING THE STANDARDIZATION OF GLOBAL AVIATION TRAINING

As a Member of ICAO's TRAINAIR PLUS, IAAA has developed a high-quality "material dependent" training programme that caters to the needs of aviation professionals from both domestic and overseas airports, and promotes balanced development of the global aviation industry.

To date, IAAA has developed a total of three Standardized Training Packages (STPs), including the Aerodrome Inspection Course in 2011, the *Airport GHG Management Course* in 2013 and the *Aerodrome CNS Engineering Course* in 2015. IAAA also successfully developed and launched an Aerodrome Safety Management ICAO-harmonized Training Package (ITP) in 2016. As well, by actively applying the systematic and efficient ICAO TRAINAIR PLUS training development methodology to its existing development programme, IAAA upgraded the quality standards of its entire training programme.



ICAO Training courses developed by IAAA

To date, IAAA has used ICAO training courses and STPs to train approximately 400 domestic and foreign enrollees. The diligence and hard work of the IAAA team earned them the award for “The Highest Number of Owned STP Implementations” from ICAO in 2015 and the award for “The Most Exported STPs” in 2016.

IAAA has produced a solid roster of instructors who have completed the ICAO Training Developers Course (TDC) and Training Instructors Course (TIC), which has contributed greatly to effective adoption of ICAO TRAINAIR PLUS Programme. This has proven to be a significant factor in nurturing the organization’s internal programme developers and in-house instructors.

CONTRIBUTING TO THE BALANCED DEVELOPMENT OF THE AVIATION INDUSTRY THROUGH FELLOWSHIP TRAINING

In 2010, IAAA implemented four IAAA-developed Fellowship Training Programmes involving 80 foreign officials from all

around the world. As of 2016, IAAA has expanded it into eight programmes. IAAA is producing more than 100 trainees every year, which is actively contributing to the balanced development of the international aviation sector in accordance with ICAO’s “No Country Left Behind” initiative.

While in the past, IAAA focused on aviation safety and security to enhance the aviation safety of developing countries, IAAA has since gradually expanded the scope of its training through extensive research on the training needs and demands of developing countries. Examples include the *Safety Management Course* for navigation facilities and the *Airport Management Course* to enhance operational efficiency.



Aerodrome Safety Management Course



Aviation Security and Safety Course



Aerodrome Inspection Course in Africa

“While in the past, IAAA focused on aviation safety and security to enhance the aviation safety of developing countries, IAAA has since gradually expanded the scope of its training through extensive research on the training needs and demands of developing countries.”

To increase the efficiency of its Fellowship Training Programmes, IAAA diversified its operation methods. Instead of inviting trainees to Korea, IAAA dispatched drill instructors to Africa in 2016. The programme was IAAA-developed and used an ICAO STP, Aerodrome Inspection Course. The curriculum and contents were optimized to local needs based on a preliminary on-site investigation. As a result, African trainees showed a high level of satisfaction.

In cooperation with the East African School of Aviation, IAAA produced 19 trainees from 10 African countries including Kenya and Uganda by effectively implementing classroom training and on-site evaluation. As the result of a thorough analysis of the efficiency of dispatch courses, IAAA is currently considering the extension of such training programmes into Asia and South America.



Aerodrome Inspection Course in Africa

FOSTERING THE GROWTH OF THE NEXT GENERATION OF AVIATION PROFESSIONALS

IAAA is actively participating in the Next Generation of Aviation Professionals (NGAP) Programme, which is being strongly promoted by the Government of the Republic of Korea and ICAO. Last year, we supported more than 300 next generation aviation professionals by signing MOUs with aviation-specialized universities from around the world. In addition, IAAA is holding summer/winter internship programmes for undergraduate students to offer them an opportunity to learn from distinguished aviation experts and to gain in-person aviation training.

As a designated ACI Training Centre in Northeast Asia, IAAA is successfully developing and organizing ACI Training Programmes every year. IAAA has made significant strides as a major aviation academy in Northeast Asia by supporting the ACI DNA Programme (Developing Nations Airport Assistance Programme) provided for airport officials in developing countries.

IAAA hopes to become the world's leading international aviation academy by strengthening relations with MOU-signed partner academies such as JAA TO, AIAC in Morocco, and EASA in Kenya, in addition to seeking ways to cooperate with other international aviation organizations such as IATA and the FAA. ■



Field study during ACI Training Programme



NGAP Course

“Last year we supported more than 300 next generation aviation professionals by signing MOUs with aviation-specialized universities from around the world.”

92 MEMBERS OF THE TRAINAIR PLUS™ PROGRAMME

ICAO'S COOPERATIVE NETWORK OF TRAINING CENTRES

21 Regional Training Centres of Excellence 31 Full Members 37 Associate Members 3 Corporate Members ★ New Status

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Federal Aviation Administration Flight Standards Training Division AFS-500

International Air Transport Association (IATA)

NORTH AMERICA CENTRAL AMERICA THE CARIBBEAN (10)

BARBADOS
The Barbados Civil Aviation Training Centre

CANADA
The ASI Institute, A Division of Aviation Strategies International

CUBA
Centro de Adiestramiento de la Aviación (CAA)

DOMINICAN REPUBLIC
Academia Superior de Ciencias Aeronáuticas (ASCA)

EL SALVADOR
Instituto Centroamericano de Capacitación Aeronáutica (ICCAE) de COCESNA

JAMAICA
Civil Aviation Authority Training Institute (CAATI)

MEXICO
Centro Internacional de Instrucción de Aeropuertos y Servicios Auxiliares. Ingeniero Roberto Kobeh González

TRINIDAD AND TOBAGO
Trinidad and Tobago Civil Aviation Authority Civil Aviation Training Centre

UNITED STATES
Federal Aviation Administration (FAA) Academy

The Washington Consulting Group (WCG), Inc.
The Technical Training Group

SOUTH AMERICA (10)

ARGENTINA
Centro de Instrucción, Perfeccionamiento y Experimentación (CIPE)

BOLIVIA
Instituto Nacional de Aviación Civil (INAC)

BRAZIL
Centro de Treinamento da Agência Nacional de Aviação Civil (ANAC)

Instituto de Controle do Espaço Aéreo (ICEA)

COLOMBIA
Centro de Estudios de Ciencias Aeronáuticas - CEA

Corporación Educativa Indoamericana (CEI)

ECUADOR
Escuela Técnica de Aviación Civil (ETAC)

PARAGUAY
Instituto Nacional de Aeronáutica Civil (INAC)

PERU
Centro de Instrucción de Aviación Civil (CIAC) de CORPAC

URUGUAY ★
Instituto de Adiestramiento Aeronáutico - DINACIA

VENEZUELA
Instituto Universitario de Aeronáutica Civil (IUAC)

EUROPE (20)

BELGIUM
Wallonie Aerotraining Network (WAN)

FRANCE
CAMAS International

Centre Français de Formation des Pompiers d'Aéroport (C2FPA)
Ecole Nationale de l'Aviation Civile (ENAC)

GERMANY
Aviation Academy International (AAI)

Star Wings Aviation Training Centre GmbH

IRELAND
Dublin International Aviation Training Academy (DIATA)

ITALY
ENAV Academy

KAZAKHSTAN
Professional Training Center RSE "Kazaeronavigatsia"

LUXEMBOURG
EUROCONTROL Institute of Air Navigation Services

NETHERLANDS
Joint Aviation Authorities Training Organisation (JAA TO)

RUSSIAN FEDERATION
Institute of Air Navigation (IAN)
Domodedovo Training LLC

SLOVENIA
Adria Flight Career Center

SPAIN
Servicios y Estudios para la Navegación Aérea y la Seguridad Aeronáutica (SENASA)

SWEDEN
Entry Point North AB Nordic
ATS Academy

TURKEY
TAV Academy Training Center
Turkish Aviation Academy

UNITED KINGDOM
International Fire Training Centre (IFTC) Serco

NATS Training

AFRICA (14)

BOTSWANA
IAS Aviation Academy

CAMEROON
Ecole Régionale de Sécurité Incendie (ERSI)

ETHIOPIA
Ethiopian Aviation Academy (EAA)

Ethiopian Civil Aviation Training Centre (ECATC)

KENYA
East African School of Aviation (EASA)

MOROCCO
Académie Internationale Mohamed VI de l'Aviation Civile (AIAC)

Loumed Cabin Crew Training Center (LCCTC)

NIGER
Ecole Africaine de la Météorologie et de l'Aviation Civile (EAMAC)

NIGERIA
Nigerian College of Aviation Technology (NCAT)

SENEGAL
Ecole Régionale de la Navigation Aérienne et Management (ERNAM)

SOUTH AFRICA
Air Traffic and Navigation Services (ATNS) - Aviation Training Academy

SUDAN
Sudan Academy for Aviation Sciences and Technology (SUDAFAST)

TANZANIA
Civil Aviation Training Centre (CATC)

TUNISIA
Académie Tuniso-Française de Formation en Sûreté de l'Aviation Civile (AFSAC)

MIDDLE EAST (11)

EGYPT
Egyptair Training Center

Egyptian Aviation Academy (EAA)

IRAN (ISLAMIC REPUBLIC OF)
Civil Aviation Technology College (CATC)

JORDAN
Queen Noor Civil Aviation Technical College (QNCATC)

KUWAIT
Australian College of Kuwait (ACK)

LEBANON
Middle East Airlines Training Center

QATAR
Qatar Aeronautical College (QAC)

SAUDI ARABIA
Saudi Academy of Civil Aviation (SACA)

UNITED ARAB EMIRATES
GALANS Training Centre

Gulf Center for Aviation Studies (GCAS)

YEMEN
Civil Aviation and Meteorology Institute (CAMI)

ASIA/PACIFIC (24)

AUSTRALIA
ASSET Aviation International

BANGLADESH
Civil Aviation Training Centre (CATC)

CHINA
Capital Airports Holding Management Co., Ltd. (CAHM)

INDIA
Airports Authority Rescue and Fire Fighting Services Training Centre

Civil Aviation Training College Allahabad

Fire Service Training Center (FSTC)

GMR Aviation Academy

Indian Aviation Academy (IAA)

INDONESIA
Air Transportation Human Resources Development Centre (ATHRDC)

Indonesia Civil Aviation Institute Sekolah Tinggi Penerbangan Indonesia

JAPAN
Aeronautical Safety College (ASC)

MALAYSIA
Malaysia Aviation Academy (MAVA)

MONGOLIA
Training Centre of the Mongolia Civil Aviation Authority (TCMCAA)

NEPAL
Civil Aviation Academy of Nepal (CAAN)

NEW ZEALAND
Airways New Zealand Training Centre

PAKISTAN
Civil Aviation Training Institute (CATI)

PHILIPPINES
Civil Aviation Training Center Civil Aviation Authority

REPUBLIC OF KOREA
Civil Aviation Training Centre of Korea Airports Corporation (KAC)

Incheon Airport Aviation Academy (IAAA)

SINGAPORE
Singapore Aviation Academy (SAA)

SRI LANKA
Civil Aviation Training Centre (CATC)

Sri Lankan Aviation College

THAILAND
Civil Aviation Training Centre (CATC)



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KOREA: SHAPING THE FUTURE OF GLOBAL AVIATION TRAINING

✈ With flight capacity around the world expected to double by the year 2030, aviation training and capacity became an important ICAO Strategic Objectives. **Korea's Ministry of Land, Infrastructure and Transport (MOLIT) and Incheon Airport** recently hosted a momentous event, to support ICAO in encouraging States to develop highly-skilled aviation professionals and access the full socio-economic benefits of the forecast growth, efforts that support ICAO's No Country Left Behind campaign.

More than 800 participants from 70 States attended ICAO's Aviation Training and TRAINAIR PLUS Global Symposium, which took place from 11 to 13 May 2016 in Yeouido, Seoul. The ICAO TRAINAIR PLUS Programme is a cooperative global training network of over 90 training centres from close to 70 ICAO Member States. The programme supports its

Members in their efforts to develop and share high-quality competency-based training material, including Standardized Training Packages (STPs).

The TPP Symposium successfully addressed important TPP issues and the latest developments in the aviation training sector. It further served as a venue for exploring new policies and technologies in global aviation and for the strengthening international cooperation among participating States. The event brought together high-level representatives from civil aviation authorities and directors and managers from many training organizations.

Throughout the Symposium's eight sessions, as information and opportunities were shared, participants were provided a forum for exchanging valuable ideas on training operations and



the latest TPP developments, and they had the opportunity to discuss ways the Programme could be further improved. As methods of aviation training evolve, every State can benefit from modern technology, and online assessments and eLearning are good examples of this.

An award ceremony was held to recognize Training Centres which have contributed to the advancement of Global Aviation Training. After winning an award for the Best STP Implementation at the previous Symposium which was held at Dublin, Ireland, the IAAA (Incheon Airport Aviation Academy) won an award for the TPP Member that developed the most

exported STP's in 2015. In addition to the other awards that were presented, 25 training organizations obtained recognition as new TRAINAIR PLUS Associate Members, Full Members, or as Regional Training Centres of Excellence.

Chung Il-young, the CEO of Incheon International Airport Corporation noted that an "investment in the training and development of professionals is essential for safety and convenience in Aviation Industry". He further expressed his hope that the Symposium had helped contribute to the growth of global civil aviation. ■



2016 TRAINAIR PLUS PROGRAMME SYMPOSIUM PRIZE RECIPIENTS

- China:** Capital Airports Holding Management for highest number of validated STPs.
- Mexico:** Centro Internacional de Instrucción de Aeropuertos y Servicios Auxiliares - Ingeniero Roberto Kobeh González for highest number of trainees through one STP.
- Republic of Korea:** Incheon Airport Aviation Academy for most exported STPs.
- Nigeria:** Nigerian College of Aviation Technology (NCAT) for highest number of instructors and greatest number of ICAO Courses.

Kenya: East African School of Aviation for highest number of course developers.

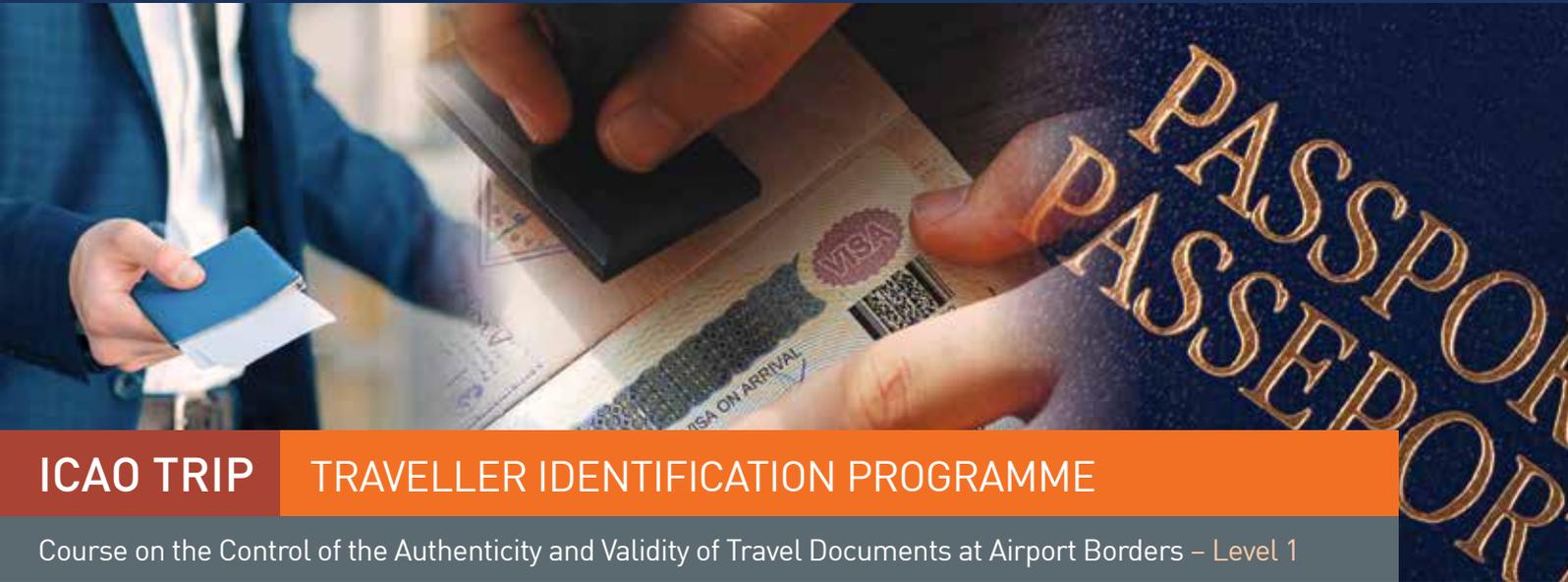
Philippines: Civil Aviation Training Center - Civil Aviation Authority of the Philippines for highest number of training managers.

John Chapman Validator Prize recipients

Dominican Republic: Mr. Armando Jordi Viera

Niger: Mr. Jacques Belinga





ICAO TRIP TRAVELLER IDENTIFICATION PROGRAMME

Course on the Control of the Authenticity and Validity of Travel Documents at Airport Borders – Level 1

ICAO introduces a new Training Package entitled “Control of the Authenticity and Validity of Travel Documents at Airport Borders – Level 1”

ICAO introduces a new Training Package entitled “Control of the Authenticity and Validity of Travel Documents at Airport Borders – Level 1”.

The purpose of this course is to consolidate the competencies of front-line inspection officers from immigration and border control authorities to **examine travel documents effectively**, allowing them to expedite the movement of legitimate travellers while identifying high-risk individuals.

The four-day course was developed according to a standardized training methodology referenced in ICAO’s *Training Development Guide, Competency-based Training Methodology (Doc 9941)*. This Training Package builds upon ICAO’s leadership in developing travel document specifications contained in ICAO’s *Machine Readable Travel Documents (Doc 9303)*, and in assisting its Member States in strengthening their national traveller identification programme.

Upon successful completion of the course, the trainees will be able to:

- describe the basic elements of a travel document;
- identify the different types of fraud;
- examine a travel document manually and visually to detect whether it is fraudulent or not; and
- examine a travel document using an electronic document reader to detect whether it is fraudulent or not.

CONTEXT

ICAO forecasts that scheduled global passenger traffic will increase from 3.5 billion in 2015 to 6.4 billion by 2030. The increased passenger volume will impact an essential aspect of international air travel: travel document examination. Providing quality and relevant training for carrying out this task is critical for global security, border control and the facilitation of air transport.

This ICAO Training Package (ITP) was developed to assist Member States in implementing the ICAO Traveller Identification Programme (TRIP) Strategy, endorsed by the 38th Session of the ICAO Assembly in 2013. The Strategy emphasizes a holistic approach to traveller identification management in order to uniquely identify individuals. It promotes a robust identification management programme, modern secure travel documents and effective border and identity controls that are powerful tools to be used to mitigate and counter threats posed by trans-border crime and terrorism.

By enhancing border security and control at airports, this ITP also assists States in implementing the United Nations Security Council **resolutions related to terrorism, including resolution 2178 (2014) on Foreign Terrorist Fighters**, which calls all States to “prevent the movement of terrorists or terrorist groups [...] through measures for preventing counterfeiting, forgery or fraudulent use of identity papers and travel documents”.

TRAINING PACKAGE DELIVERY

Available in English and French, the ITP will be translated into all of the other languages of ICAO.

Member States are invited to host this training course to train their officers by sending an email to aviationtraining@icao.int. Training organizations, which are Members of the TRAINAIR PLUS Programme, can apply to host the course through the TRAINAIR PLUS Electronic Management System (TPEMS).

The development of this ICAO Training Package was funded by the Government of Canada



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 - o DVOR: Thales 432 – equipment
- **IATA courses**
 - o Customer service
 - o Human factors in aviation
 - o Security, risk and crisis management
 - o In-flight security
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- Accredited by the Transport Education and Training Authority
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Who is ATNS?

Air Traffic and Navigation Services SOC Limited (ATNS) provides air traffic, navigation, training and associated services within South Africa. ATNS is also responsible for Air Traffic Control throughout the **African Indian Ocean (AFI) region**, comprising approximately **10% of the world's airspace**. ATNS operates from nine ACSA and 12 other aerodromes. As a **globally competitive employer of choice**, ATNS is committed to diversity and has achieved ranking within the **top 10 companies** in South Africa with regards to female representation at executive levels.

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ANARZUL DORLIGSUREN

She earned her Masters of Business Administration from Strayer University and is the Senior Officer of Training Policy and Planning of the Aviation Training Center of Civil Aviation Authority of Mongolia and Manager of Course Development Unit.

- ✈ *Acquiring a method of learning is more important than being taught.*
- ✈ *Having the right attitude is more important than being educated.*
- ✈ *Having work skills is more important than being employed.*
- ✈ *Using knowledge is more important than having knowledge.*

FOREWORD

Today's global citizens constitute an entirely new generation whose development skills are based on the latest materials and information technology that is generated using everything from bio to nano-technology. Current knowledge-based technological developments are a function of the extent of each nation's development. In other words, the impact on innovation to worldwide development trends is inspired and determined by the development of States and the value placed on intellect and knowledge. Increasingly, States are eager to enhance education and to consider knowledge as a determining factor in supporting the economic and industrial capacity of nations.

The strategy of Mongolia's Development Policy: Mongolian National Development for Knowledge-based Economic Development 2007-2021 has been to define the goals and objectives for the development of new technology and innovation based on knowledge and to implement scientific knowledge-based innovation in all economic and social sectors over the past 10 years.

Within this strategy, the Aviation Training Center has been tasked with providing information about the policies for recruiting and training human resources, the importance of development of the civil aviation sector, and the projects and programmes instituted for improving training activities, as well as the methods and further goals designed to support continuous development.

The Aviation Training Center of the Civil Aviation Authority of Mongolia is responsible for preparing the next generation for the Mongolian civil aviation sector and training and developing personnel by improving their knowledge and education. It has received Civil Aviation Rules Part-141 Aviation Training Organization Certification, and is responsible for civil aviation training. It is the sole Associate Member of ICAO TRAINAIR PLUS Programme in Mongolia.

Building on its 37-year history, the Aviation Training Center is committed to establishing a competency-based vocational education and training system that meets the demands of the labor market. To do so, the development of the knowledge and skills of its trainers in accordance with modern demands and needs is paramount.

The Mongolian State Great Hural (Parliament) passed Government Aviation Policy until 2020 in order to develop the civil aviation sector as a trend-setting leader of social development in the State. This Policy was aimed at increasing the competency of Mongolian aviation personnel on the world market by building a professional human resource team with expanded knowledge, skills and experience, and whose objective was to create long-term sustainable economic development. The purpose of implementing these national programmes was to provide the basic conditions to

develop human resources skills and knowledge, to provide professional re-qualification training, and to develop initial training for basic aviation professionals.

These Human Resource Development Programmes throughout the civil aviation industry have been approved by the Government of Mongolia and are being implemented by the Civil Aviation Authority.

The Aviation Training Center, the implementation arm of the Human Resource Development Programme for the civil aviation industry, is responsible for a set of measures and priorities for capacity-building aimed at introducing advanced technologies and creating favorable conditions for headquarters to determine and reform policy management and ensure that professionals and teachers are specialized and experienced in this field.

DEVELOPING HUMAN RESOURCE CAPACITY

The Center's primary goal is to improve aviation safety and security, as well as to improve the productivity and efficiency of the organization through the development of human resources capacity. Priorities include:

- The Civil Aviation Human Resource Development Programme and the Re-qualification Training for Employers, Retraining

and Skill Development Training Programme. These programmes have been approved as the basis for dealing with supply and demand issues in the industry and training needs. The programmes have been successfully implemented and are ongoing until 2020.

- The organization provides training for new civil aviation professionals to meet human resource needs, to improve knowledge and skills for personnel and to qualify and train them in hands-on practice in their field. The Center is collaborating with aviation training organizations and universities in the Russian Federation, the United States, Canada, Australia, the Ukraine and Thailand to train new aviation professionals.
- As an Associate Member of the ICAO TRAINAIR PLUS Programme, the Center has been reforming its training system since 2013 by introducing a competency-based training approach so that students will develop the appropriate attitude and a systematic set of knowledge and skills to bring to the workplace. Over the last four years, as a result of the creation of the conditions for providing new training techniques and the continuous development of instructors, trainee numbers have increased dramatically and training efficiency has improved markedly.



STRENGTHENING DOMESTIC TRAINING

Mongolians are a nomadic civilization. The number of people migrating to the city increased dramatically in recent years. Industrialization and tourism development have called for employers to search, first, for employment candidates with the right attitude and skill passions, second, with the potential skills and capability to learn and to develop and, third, with the required knowledge to carry out the tasks.

To prepare professionals to meet employer requirements and to improve the quality of training activities in the aviation sector in the face of these social and economic changes, the Aviation Training Center of Mongolia has undertaken a number of initiatives. These include:

- Developing the “Aeronautical Information Management Specialist” 021/122 / AIS AIM SPC Standardized Training Package in January of this year. It is expected to be validated in August.
- Collaborating, beginning in 2015, with universities and institutions in order to strengthen our local training activities, and establishing agreements with five universities to train 107 professionals.
- Since 2013, working to prepare instructors and teachers to develop capacity-based training programmes and to train them in the practice of capacity-building methods of training. Today, they compile training data and adjust teaching methods accordingly. The Center has trained a total of 15 experts at the ICAO Training Developers Course for the preparation of standardized training packages to allow them to deliver capacity-based training in the area.
- Introducing modern aviation technologies to improve training effectiveness, exchanging the experiences of professionals and improving teachers' knowledge and skills regularly by

collaborating with foreign university teachers and professional aviation instructors.

BUILDING KNOWLEDGE AND SKILLS

A key to the success of any training organization is the ability to provide quality knowledge, deliver student innovation to society, and develop creative thinking skills.

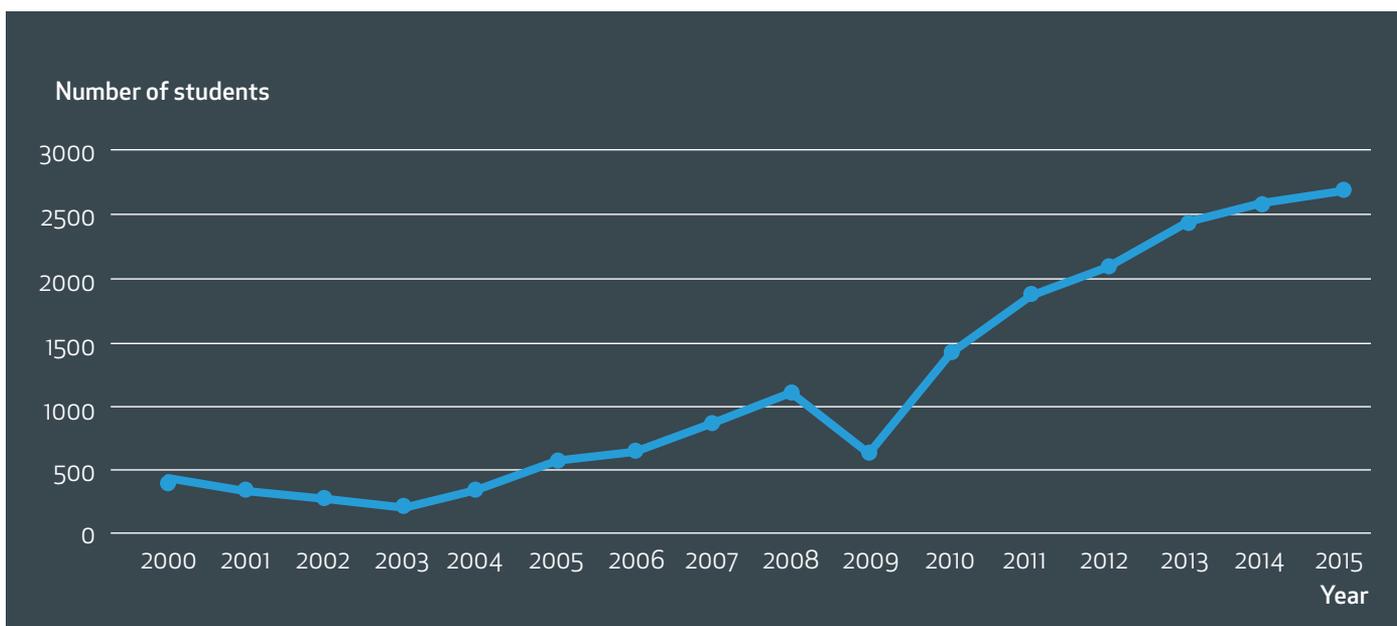
Prof. Shyamal Majumdar, Ph.D (UNESCO-UNEVOC) said:

“Since education is considered the key to effective development strategies, technical and vocational EDUCATION and TRAINING (TVET) must be the master key that can alleviate poverty, promote peace, conserve the environment, improve the quality of life for all and help achieve sustainable development.”

If knowledge and education are the key to development, it can be said that training is the door to a nation’s development. The Aviation Training Center is using a developed, integrated system that assesses training quality based on information technology in order to structure a quality learning process. The Center employs a step-by-step process for qualifying instructors’ professional skills, and improving teaching facilities. Instructors are the key people in the process. They must be provided with research opportunities, good working conditions and an environment that encourages them to enhance their knowledge.

AIMS AND OBJECTIVES OF THE TRAINING CENTER

Mongolia has the long-term goal of expanding the Training Center as an internationally recognized University of Aviation that trains and educates the basic aviation professional. In this case, our first step to achieve this goal will be allowing us to deliver all of our



The number of graduates from the Aviation Training Center of Mongolia in the past 15 years



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courses using competency-based training methods and to expand our cooperation with leading foreign educational institutions and universities and to implement joint programmes and projects to become a Full Member organization in TRAINAIR PLUS Programme. Being the best training center in the region remains our short-term goal.

CONCLUSION

The Aviation Training Center of CAAM has been developing training programmes that meet the standards and requirements for international educational institutions and civil aviation training organizations. The Center operates using competency-based training methods to deliver skilled and talented human resources who can ensure aviation safety and security. The fact that the number of graduates of the Aviation Training Center has increased year by year, indicates that we have been successful in implementing our mission of training skilled professionals with the right attitude, high potential and knowledge. This has contributed significantly to our performance in the workplace and to making civil aviation a major profession in the labour market. ■

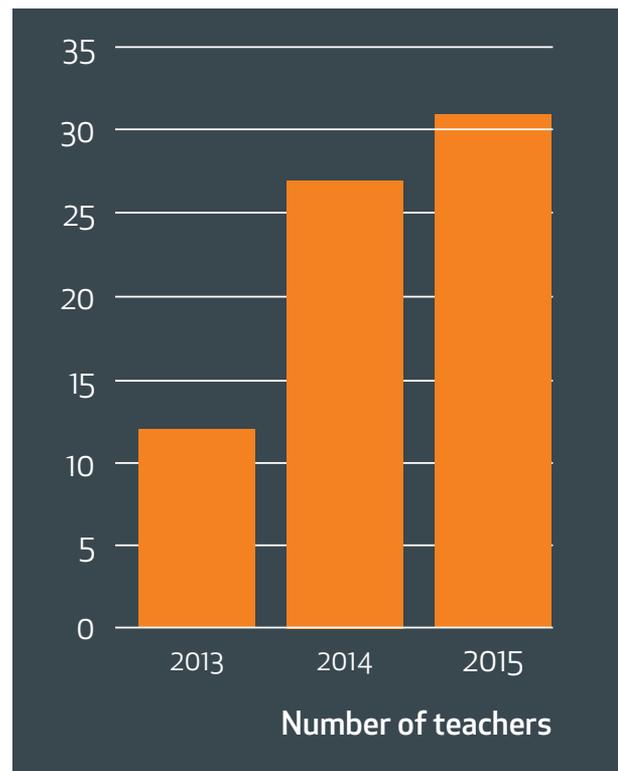


Chart-2: Upgrading teachers professional qualifications

ICAO-HARMONIZED TRAINING PACKAGES SUPPORT CAPACITY-BUILDING



MS. JIE HUANG

With 17 years of experience in aviation and training, she joined ICAO in May 2014. Currently she is the Manager of the Training Design and Development Unit in the ICAO Global Aviation Training Office. She is responsible for developing ICAO courses in collaboration with the ICAO Technical Bureau, and cooperating with training centres in the ICAO training network to develop competency-based training courses for aviation professionals. She is also an ICAO qualified instructor for the TRAINAIR PLUS Training Developers Course (TDC) and the Training Instructors Course (TIC), and an ICAO qualified Instructional Systems Design validator.



Since the first flight was carried out a little more than 100 years ago, the world of aviation has been characterized by spectacular growth and constant innovation. Changes in aviation are so frequent that, due to continuous improvement in operating conditions, aviation safety, security, environment, etc., this is one of the few industries where workers are required to remain current in order to avoid losing their qualifications.

Today, the aviation industry is facing major challenges in capacity-building largely due to the sustained growth of air transport activities; the need for harmonization of human performance in aviation for technical and managerial jobs; the requirement for the development of new competency-based courses to meet the growing needs of aviation industry and the employment of millennials; the risk of losing expertise and corporate competencies due to massive retirement of baby boomers in the upcoming years; the constant increase to the costs of training; and the challenges to the aviation training industry in determining a clear vision in order to respond to changing aviation training needs.

In this regard, the global implementation of ICAO-harmonized Training Packages is proving to be an excellent way to support capacity-building in aviation.

COMPETENCY-BASED TRAINING AND ICAO-HARMONIZED TRAINING PACKAGES

With passenger volumes and air traffic movements set to double every 15 years, and current air traffic projections showing that the threshold of six billion passengers per year will be reached by 2030, all Civil Aviation Authorities (CAAs) and Service Providers must implement Human Resources Development (HRD) and Human Resources Planning (HRP) strategies to ensure they have a sufficient number of qualified aviation personnel to adequately operate, maintain and manage all aspects of the worldwide civil aviation network. Distinct professional qualification criteria, effective talent management programmes, career and skills development plans based on experience, and academic and professional training are key elements of the implementation strategies.

Learning itineraries are very good tools to identify curricula and competencies to be developed, including a combination of various learning events and interventions such as formal training, education, self-study, on-the-job training and work experience.

ICAO works with the Convention's 191 Member States and industry groups to reach consensus on international civil aviation Standards and Recommended Practices (SARPs) and policies in support of a safe, efficient, secure, economically sustainable and environmentally responsible civil aviation sector.

These SARPs and policies are used by ICAO Member States to ensure that their local civil aviation operations and regulations conform to global norms.

For the global implementation of SARPs, ICAO updated its Civil Aviation Training Policy in 2013. The updated training policy requires that aviation training should be competency-based through the use of Instructional Systems Design (ISD).

COMPETENCY-BASED TRAINING

In a nutshell, competency-based training consists of teaching a person to do a certain job under certain conditions to an acceptable level. The first aspect of development of a competency-based training course is to determine the performance objectives, then to identify the competencies, including Knowledge, Skills and Attitudes (K/S/As). These K/S/As will be converted into teaching points that must be taught using a variety of instructional techniques in the training course.

Assessments are conducted throughout the process of training development and delivery. Training needs assessments tailor the training material to what the trainee “needs to know” rather than what might be “nice to know”. During training, formative and summative assessments evaluate whether the training objectives have been met. Following training, training effectiveness assessments measure the effectiveness of the entire training programme.

Feedback from the assessment may show the need for the modification of performance objectives, the amendment of competencies, selection of appropriate instructional techniques and the revision of training material in order to enhance the training effectiveness. All these components are interrelated and the process is ongoing.

ICAO-HARMONIZED TRAINING PACKAGES

At the end of 2014, the ICAO TRAINAIR PLUS Programme (TPP) was enhanced significantly by introducing new categories of courses. These ICAO training packages are either developed by ICAO, TPP Members or partners.

The portfolio of ICAO-harmonized Training Packages includes:

- ICAO Training Packages (ITPs);
- Standardized Training Packages (STPs);
- Compliant Training Packages (CTPs); and
- Partnership Training Packages (PTPs).

What all ICAO-harmonized training packages have in common is the application of the ICAO competency-based training methodology. However, each category has specific features in terms of its source of content, course validation, evaluation and delivery.

ITPs can be developed by ICAO or by Regional Training Centres of Excellence (RTCEs) in collaboration with ICAO. ITPs aim for the implementation of ICAO provisions. The content is based on ICAO SARPs and guidance material must be based on exemplary implementation practices. Consequently, ICAO validates both the ISD methodology and course content for ITPs.

STPs are developed by TPP members. The content deals with operational practice with reference to national regulations and procedures, and only the ISD methodology is reviewed by ICAO for validation.

“Assessments are conducted throughout the process of training development and delivery. Training needs assessments tailor the training material to what the trainee “needs to know” rather than what might be “nice to know”.”



CTPs are existing TPP Members' courses. The content also deals with operational practice in relation to ICAO provisions. Courses are submitted for recognition by ICAO as compliant. The CTP validation encompasses review of the ISD methodology and course content.

PTPs are developed within the framework of Partnership Agreements. Their purpose is mainly for aviation management training.

RESPONDING TO A NEED

The ITP initiative allows ICAO to effectively and efficiently respond to its mandate of assisting Member States in achieving and maintaining the competency of aviation personnel through these training programmes.

While some courses are developed by ICAO itself, given the Organization's resource constraints, ICAO elected to establish a set of high level criteria for the selection of Regional Training Centres of Excellence (RTCEs) and authorized these RTCEs to use ICAO provisions for the development of ITPs in collaboration with ICAO. The Training Design and Development (TDD) Unit of the Global Aviation Training (GAT) Office in ICAO works closely with the RTCE network on the development of ITPs to ensure that ITPs comply with ICAO's *Training Development Guide, Competency-based Training Methodology* (Doc 9941). ICAO provisions are appropriately addressed in the ITP as well.

Since the launch of the ITP Development Plan in 2015, three RTCE ITPs have been successfully developed by Singapore Aviation Academy (SAA), Incheon Airport Aviation Academy (IAAA) and Dublin International Aviation Training Academy (DIATA) respectively, and a variety of subjects are under development by the RTCEs for future courses.

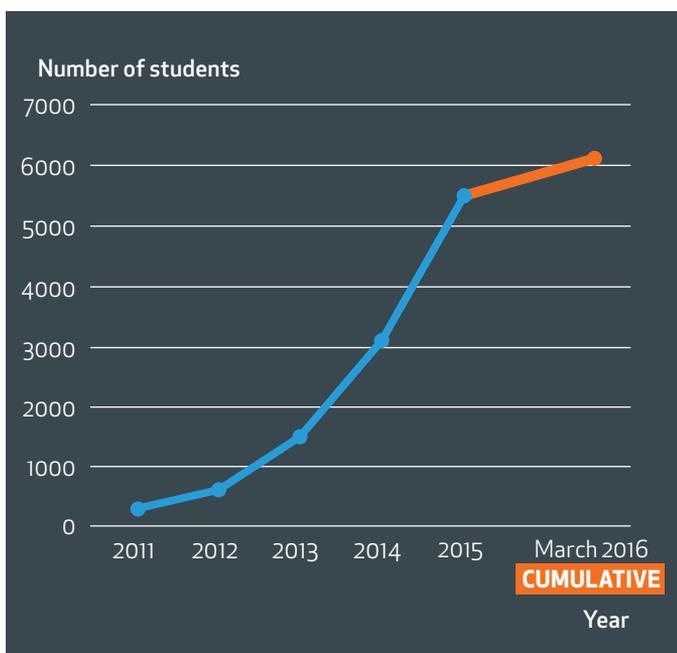


Figure 1. Number of Trainees – Classroom Courses

THE WAY FORWARD

The membership of the TPP has grown steadily since the creation of the Programme, and the number of validated courses available has also increased accordingly. Currently, there are 85 TPP Members in the ICAO training network and 136 courses are available within the four categories of ITPs. As of 31 March 2016, the number of trainees trained through all ITPs is 6139.

ICAO-harmonized Training Packages cover the full range of ICAO strategic objectives, which are grouped into the following areas: Air Navigation Services, Aerodromes, Flight Safety and Safety Management, Air Transport, Security and Facilitation, Environment and Training Competency Development. The largest numbers of courses developed are available in the areas of Air Navigation Services, Aerodromes, Flight Safety and Safety Management. As of May 2016, a total of 194 courses have been developed or are under development.

SUBJECT MATTER	VALIDATED	UNDER DEVELOPMENT	TOTAL
Air Navigation Services	48	22	70
Aerodrome	38	8	46
Flight Safety and Safety Management	22	16	38
Air Transport	11	6	17
Capacity Building	11	2	13
Security and facilitation	4	4	8
Environment	2	0	2
Total	136	58	194

Figure 2. Course Development by Category

ICAO achieves global harmonization and standardization by using well-established consultation and approval mechanisms involving four levels of documents: the Chicago Convention; the Annexes to the Chicago Convention; ICAO Guidelines; and Regional Supplementary Procedures.

To support the implementation of ICAO provisions, the ICAO GAT Office promotes training standardization and collaboration by using the competency-based training methodology for the development of ICAO-harmonized Training Packages in all civil aviation disciplines and by offering a worldwide sharing system of training packages. The global implementation of ICAO-harmonized training packages brings standardization of aviation training to these harmonized competency requirements. The sharing mechanism helps eliminate the duplication of training course development for the same subject.

The implementation of ICAO-harmonized training packages provides a meaningful training solution that responds to the need for capacity-building in aviation in a timely and cost effective manner. ■

DEVELOPING 3-3-5 AIRPORT PROFESSIONAL CURRICULUM USING COMPETENCY-BASED TRAINING METHODOLOGIES



MENG XIAOYA

She is the supervisor of international cooperation and course development for CAHM, and their ICAO Senior Course Developer and CATC Instructional Systems Design Validator.



Capital Airports Holding Company (CAH), which is affiliated with the Civil Aviation Administration of China, is a large-scale, State-owned enterprise with diversified businesses and cross-regional operations. With airport management as its core business, CAH has more than 40 member airports in eight municipalities, provinces and autonomous regions, including Beijing and Tianjin. Capital Airports Holdings Management Co., Ltd. (CAHM), which was established in 2012 as a subsidiary of CAH in partnership with Capital Airports Management Academy, is responsible for management research, training, consulting and output.

INTRODUCTION

After joining the ICAO Trainair Plus Programme (TPP) in December 2012, Capital Airports Holdings Management Co., Ltd. (CAHM) became a Regional Training Center of Excellence in 2016. To date, through the collaboration of the members of the Capital Airports Holding Company (CAH), we have had 11 Standardized Training Packages (STPs) that have been validated by ICAO's Trainair Plus Programme and included in the TPP STP library. We were recognized for our high quality work and won the award for the "Highest number of developed STPs" in 2014 and as the "TRAINAIR PLUS Member with the highest number of validated STPs" in 2015.

While professionals are key to turning strategic objectives into practice, training a highly qualified and specialized team cannot be achieved without systematic professional training and fundamental course development. Before joining the ICAO Trainair Plus Programme, CAHM work was specifically focused on middle and senior management training and did not include airport professional courses. After joining the family of the Trainair Plus Programme, the structure of "3-3-5" airport professional curriculum was established and evolved into the program it is today.

The "3-3-5" airport professional curriculum is comprised of *professional skill, airport management and general management* courses. Each category is divided into three parts: "ICAO Validated", "CAH Standard" and "CAH Member Recommended". The curriculum covers five main types of target population which include: front line staff, monitors, supervisors, mid-level managers and senior managers.

These achievements can be attributed to TPP competency-based training methodologies, which provide critical guidelines for developing the "3-3-5" airport professional curriculum.

THIS METHODOLOGY PROVIDES CRITICAL GUARANTEES FOR COURSE QUALITY AND TRAINING EFFECTS, WHICH ENSURE EMPLOYEES ACHIEVE A REQUIRED LEVEL OF COMPETENCY QUICKLY AND EFFICIENTLY.

We discovered many things as we developed the “3-3-5” airport professional curriculum.

In the first phase of curriculum development, we encountered difficulties when categorizing the existing professional courses for front-line staff. Some courses covered subject matter (business knowledge, laws and regulations, management documents, case studies, etc) associated with multiple jobs. Since some of the existing courses were not developed to evaluate and train employees in specific airport jobs to achieve the required level of competence, they weren’t necessarily providing employees with the appropriate knowledge, skills, and attitudes required to succeed in the workplace.

The competency-based training methodology requires a thorough analysis to ensure priorities are assigned to all positions at the airport. Based on the requirements of the Civil Aviation Administration of China, we began assessing all the airport jobs systematically and comprehensively, to form the “Airport Job Positions Panorama” which has built a solid foundation for the development of the “3-3-5” Airport Professional Curriculum.

In a traditional course development process, course developers are most often playing a lead role and developing content based on their own understanding of the training requirements. In the development of the “3-3-5” airport professional curriculum, the result of the job analysis is the key factor in converting the effect of training to the actual job performance. The course content must be based on the results of the job analysis for a specific airport position, rather than be the subjective opinion of a single person. This ensures the course content perfectly matches the actual requirements of the job.

On the other hand, following interviews with the Subject Matter Experts (SMEs), and once the results of the job analysis were available, we were able to accurately define the training

objectives for all levels and ensure the training content and teaching activities were well designed to accomplish the course objectives, guaranteeing that each training course is goal-oriented and productive.

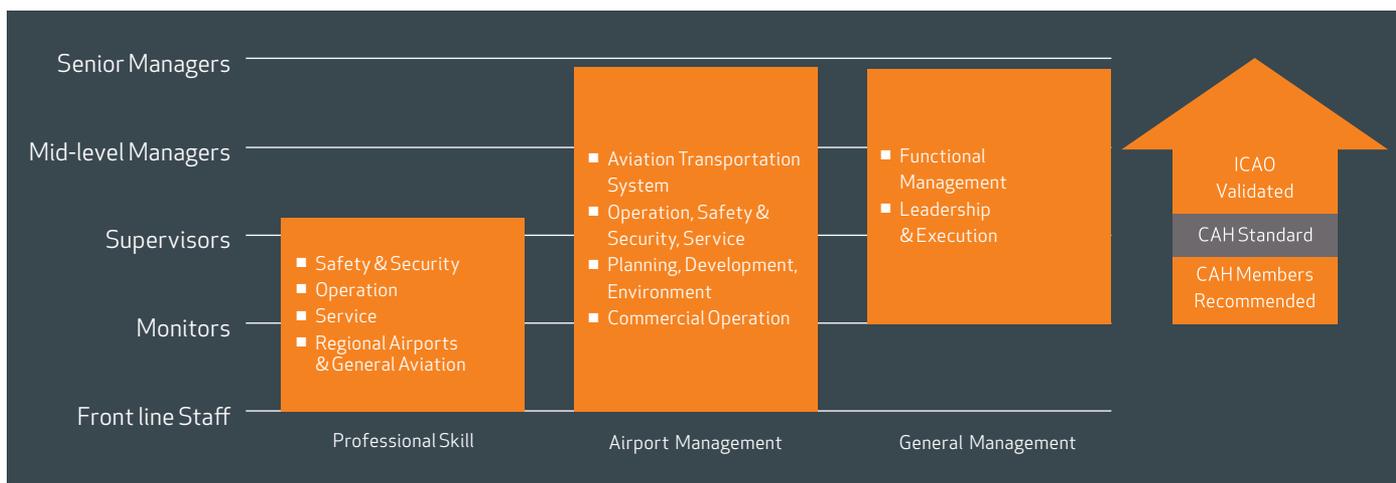
Today, airports are shifting their business strategies from an operational to a management approach. Due to the scope and complexity of jobs, the results of building competencies in many key positions at the airport will not be seen overnight. When developing the “3-3-5” airport professional curriculum, apart from setting the entry requirements of each job, we also abide by the requirements of the Civil Aviation Administration of China and carefully define each of the required levels by analyzing the developmental stages of the competency of each position, in order to achieve the highest level of competency. With this model, we began developing series courses that are targeted to achieve the job competency stage by stage.

USING THIS METHODOLOGY AS A CRITICAL TOOL FOR SUMMARIZING THE BEST PRACTICES AND TRANSMIT THE “ENTERPRISE INVISIBLE WISDOM”

Aside from relying on external training resources, the success of an enterprise increasingly depends on the knowledge of their own, including but not limited to, classic cases, operation standards and management concepts. However, this “invisible wisdom” is usually owned by the most experienced professionals or instructors. Most often, they themselves don’t really realize how valuable their experience is to their companies; when a professional or an experienced instructor holding more than 30 years of working experience is going to retire, it generally causes nervousness.

What happens when such a highly experienced professional walks out of the door without leaving his/her experience and best practice behind for the benefit of others?

As a globally-renowned airport group, CAH has accumulated rich management experience. The development of the “3-3-5” airport professional curriculum creates an experience sharing and summarizing platform for its members. In the development process of the “3-3-5” airport professional curriculum, we take



full advantage of the course development mode, fully generalizing the best practices of the SMEs under the guidance of the course developers, and we realize the “raison-d’être” for the best practice of the specialized cases.

FINALLY, THIS METHODOLOGY IS AN EFFECTIVE PUSHING HAND FOR THE DEVELOPMENT OF ONLINE TRAINING AND THE OVERALL COMPETENCY OF THE AIRPORT PROFESSIONALS.

The CAH online training academy was developed as an interactive online and off-line learning platform with a modern, interactive learning style. The aim was to build a platform that would share airport management ideas and encourage learning. The open and interactive features of the platform complement the respective advantages of online and off-line training; extend the numbers of the target trainees; and further improve the training efficiency and effectiveness as well as the overall competency of the airport professionals who use it.

We have, and will continue to select, the core courses from the “3-3-5” airport professional curriculum to convert them into online training courses. This methodology helps us precisely identify the competency elements and allows us to transform the teaching points that belong to the “knowledge” category into online training contents. With the facilitation of the online training, trainees are able to use their spare time to complete the online training, related exercises and evaluation tests. Meanwhile, the related classroom training will mainly focus on the accomplishment of the end-of-module objectives of each module, which provides a systematic and flexible method for employees to acquire the required knowledge, skills, and attitudes.

Over the next three years, using the competency-based training methodology, the “3-3-5” airport professional curriculum will continuously improve. To support the training of airport professionals within and outside of CAH, we expect to develop more than a hundred training courses. Specialized assessments

and evaluations of the curriculum will follow the development trends of the airport, with the aim to continuously improve the completeness of the curriculum. As we move forward, we expect to make full use of the Trainair Plus Programme’s international platform to promote and provide high-quality airport professional trainings to the international airport professionals. ■

“Today, airports are shifting their business strategies from an operational to a management approach...the results of building competency in many key positions at the airport will not be seen overnight.”

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ICAO'S TECHNICAL COOPERATION PROGRAMME: AN IMPORTANT RESOURCE FOR TRAINING AND CAPACITY-BUILDING



DANIEL SOUHAMI

He is a Field Operations Officer with ICAO's Technical Cooperation Bureau Project Development Unit. He joined ICAO/TCB in 2001 after previously working for the World Bank, the Canadian Trade Commissioner Service and in the private and academia sectors.



AFGHANISTAN: July 2016 marked the beginning of the implementation of a technical cooperation project aimed at building capacity in Afghanistan through the training of national personnel. The first phase of this project, funded by the United States, calls for training over 30 Fire Crash and Rescue Service personnel and over 40 Air Traffic Controllers.

The training is conducted in an ICAO TRAINAIR PLUS accredited academy in India, supported logistically by UNOPS and coordinated through ICAO's Technical Cooperation Bureau (TCB). Subsequent phases of this project will see more Afghan nationals benefit from similar training.

The project serves as a powerful illustration of the virtues of close collaboration between different entities in the aviation community. This is how ICAO plays a pivotal role in the development of the skills and experience of aviation professionals.

LATIN AMERICA: Another case of a successful capacity-building initiative is the partnership between TCB and Aeropuertos Españoles y Navegación Aérea (AENA) from Spain. For many years, under this technical cooperation project, seminars and workshops have been organized in Latin America covering a number of important topics. For example, one of the seminars held in Cartagena, Colombia last year dealt with "Development of Regional Airports". Over 50 participants benefitted from this training activity.

Professionals from the region are eligible to apply for fellowships to participate in these events. Moreover, AENA, in collaboration with TCB, has awarded a number of bursaries for professionals to undertake graduate level studies at the Universidad Politécnica de Madrid in Spain.

These are just two examples of TCB's commitment to work with organizations around the world to promote training for aviation professionals worldwide. In fact, since its creation over 60 years ago, capacity-building and training have been pillars of TCB's core activities when providing assistance to ICAO Member States. TCB offers many mechanisms and services that States can use to meet their capacity-building and training needs.

FELLOWSHIPS: Through TCB, States can nominate nationals to undergo training through our Fellowships Programme. This way, selected candidates receive training in internationally recognized universities or training centres. States can nominate candidates through the Developing Countries Training Programme (DCTP), which is provided in partnership with internationally respected training centres in India, the Republic of Korea and Singapore.

In the past four years, TCB has awarded over 2500 fellowships across the globe (including over 700 fellowships under the DCTP). Professionals who have benefited from this training have returned to their national authorities and contributed significantly to the development of their State's air transport industry.

IN-COUNTRY TRAINING: TCB also facilitates training through capacity-building projects that may include the deployment of instructors to conduct seminars and workshops, or to provide on-the-job training. Through capacity-building projects of this kind, over 5000 personnel have received in-country training. Many of these projects aim to help States remedy deficiencies related to their safety and security oversight responsibilities.

In addition to fellowships and capacity-building initiatives, training is provided by equipment suppliers for goods procured through TCB. TCB also manages the Assad Kotaite Fellowship Fund, which awards bursaries to selected graduate students around the world.

TAILORED SOLUTIONS: TCB collaborates closely with ICAO's Global Aviation Training (GAT) Office to ensure that State training needs are effectively met. States are welcome to approach GAT and TCB to propose projects to assist their Aviation Training Organizations (ATOs) to become part of ICAO's TRAINAIR PLUS network.

States are encouraged to contact ICAO for assistance in addressing their training requirements. Feel free to contact TCB at the following coordinates:

Phone: +514-954-8219 ext. 6332

Email: officetcb@icao.int ■



VISIT OF THE ICAO PRESIDENT AND ICAO SECRETARY GENERAL TO THE MALAYSIA AVIATION ACADEMY

Malaysia hosted the 3rd ICAO-WCO Joint Conference on Enhancing Air Cargo Security and Facilitation, held in Kuala Lumpur, from 26-28 July 2016. To increase its visibility, the Malaysian Aviation Academy (MAvA) was a co-sponsor of the conference and also exhibited a booth to promote its training solutions during the conference.

On 27 July 2016, MAvA was honoured to host an onsite visit by Dr. Olumuyiwa Benard Aliu (President of the ICAO Council), Dr. Fang Liu (Secretary General of ICAO), Mr. Arun Mishra (ICAO APAC Regional Director) together with 20 ICAO Council Members.

In his remarks during the visit to MAvA, Dr. Aliu took the opportunity to congratulate MAvA for their recent achievement in becoming an Full ICAO TRAINAIR PLUS Programme Member. To mark the occasion of the ICAO visit, a brief inscription ceremony was held to commemorate the installation of the ICAO TRAINAIR PLUS Programme Full Membership Plaque and the launching of the new MAvA Logo. Subsequently Dr. Aliu, Dr. Liu, Mr. Mishra and the rest of the ICAO delegation participated in a walk-about of MAvA's 360o Aerodrome, Radar and Search & Rescue Simulator facilities.



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Contact: Mr. Percy Morokane, External Communications Officer – **Email:** PercyMO@atns.co.za

Tel: +27 11 607-1234 – **URL:** www.atns.co.za

Air Traffic and Navigation Services (ATNS) Company of South Africa is the sole provider of air traffic, navigation, training and associated services within South Africa and some parts of Africa. Responsible for 10 percent of the world's airspace, ATNS proudly manages more than half a million arrival and departure movements every year while maintaining ISO 9001 accreditation. ATNS is celebrating 21 years of selfless and distinguished air navigation and aviation training service provisions in Africa.

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Contact: Training Team – **Email:** training@caainternational.com – **Tel:** +44 (0)1293 768700 – **URL:** www.caainternational.com/training

CAA International (CAAi), a wholly owned subsidiary of the UK Civil Aviation Authority (UK CAA), is a leading, globally recognized aviation consultancy and training company. Providing a comprehensive portfolio of public access courses and tailored training programmes for Civil Aviation Authorities and industry around the globe, CAAi delivers practical, best practice regulatory, safety oversight and compliance monitoring training solutions. What sets CAAi apart is the ability to provide training programmes that are quality assured by active UK CAA Regulators, that directly influence international policy and rulemaking at a strategic level. Based on ICAO and EASA standards as a minimum, CAAi training covers all of aviation's major disciplines, providing the highest levels of practical training that delivers measurable results for individuals and organizations.

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ÉCOLE NATIONALE D'AÉROTECHNIQUE (ENA) (CANADA)

A Passion for Aviation

Contact: Nicole Mercier, Director, International Development Affairs – **Email:** ena.api@cegepmontpetit.ca
Tel: 450-678-3561 – **URL:** http://ena.cegepmontpetit.ca/

ENA, affiliated with Cégep Édouard-Montpetit, is the largest college-level aeronautical institute in North America, in terms of its infrastructure and student capacity. ENA offers three regular post-secondary diploma programmes in aerospace engineering, aircraft maintenance, and avionics. ENA is the industry's first choice for its workforce and for the continuing education of its technicians. The school accepts over 1,300 full-time students each year and over 6,000 technicians in continuing education. It is one of the few schools in Canada authorized by Canada's department of national defence, to provide aircraft maintenance training to military personnel.

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Asia Pacific & South Asia

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Email: saa@caas.gov.sg – **Tel:** +65 6540 6220 (Office Hours), +65 6540 6225 (24 Hours) – **Fax:** +65 6542 9890/6543 2788

URL: www.saa.com.sg

As the internationally-recognized training arm of the Civil Aviation Authority of Singapore, the Singapore Aviation Academy (SAA) conducts more than 100 courses annually. It offers a comprehensive breadth of training in various disciplines through its four schools – School of Aviation Management, School of Aviation Safety and Security, School of Air Traffic Services and School of Airport Emergency Services. To date, the Academy has trained over 91,000 participants from 200 States and territories. SAA is an ICAO TRAINAIR PLUS Full Member, ICAO Regional Training Centre of Excellence, ICAO-endorsed Government Safety Inspector Training Centre and ICAO Aviation Security Training Centre.

TOULOUSE BUSINESS SCHOOL - TBS (FRANCE)

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Contact: Céline Rodriguez, Communications Officer – **Email:** c.rodriguez@tbs-education.fr

Tel: +33 (0) 561 29 48 93 – **URL:** www.tbs-education.fr

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TURKISH AVIATION ACADEMY (TURKEY)

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Email: aviationacademy@thy.com – **Tel:** +90 212 463 63 63 ext: 12360/17985/17463/17787 – **URL:** www.academy.thy.com

Turkish Aviation Academy has transformed over the years into an institution that offers training courses to people from many different companies both in Turkey and abroad. The Academy has been offering training courses for over 30 years. Turkish Aviation Academy continues to be one of the leading aviation training centers in Turkey utilizing expert trainers and a quality training approach. Within the Academy there are 26 trainers, all experts in their fields, whereby 800 people can be delivered training at the same time. Approximately 2000 classroom trainings are conducted annually in which nearly 30,000 students participate. Moreover, the number of distance learning has reached 100,000. The Academy delivers training services in the following fields: Reservation and Sales Trainings, Cargo and Passenger Services Trainings, Security Trainings, ICAO Trainair Plus Trainings, Organizational Development Trainings, IATA Trainings, Air Transport Management Master Programme, Aviation English Trainings and Fear of Flying Programme.



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