ICAO TRAINING REPORT

NEWS AND FEATURES ON CIVIL AVIATION-RELATED TRAINING DEVELOPMENTS - VOL. 4 - NO. 2

AVIATION TRAINING GOING FORWARD

ICAO'S NEW APPROACH TO TRAINING AND CAPACITY-BUILDING IN AVIATION

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Raymond Benjamin, *ICAO Secretary General*

ICAO'S NEW APPROACH TO TRAINING AND CAPACITY-BUILDING IN AVIATION

All of us in the international air transport community recognize that the benefits of our global network rely strongly on the availability of qualified and competent personnel.

ICAO conducted a 2013 assessment to determine how it could better assist States with their skilled personnel needs. The 38th Session of the ICAO Assembly adopted Assembly Resolution A38-12, Appendix D, which encouraged greater ICAO involvement in human resources development strategies for the aviation sector and, together, these factors led to the development of a new ICAO Civil Aviation Training Policy and the establishment of a Global Aviation Training (GAT) Office.

This office is now responsible for the planning, management and coordination of all training and human resources activities at ICAO.

The establishment of the GAT Office in 2014 is enabling ICAO to better respond to the needs of Member States in a more consistent and comprehensive manner. Through it we are now enhancing the standardization of ICAO training activities and the quality and provision of services to our Member States and the aviation community.

ICAO TRAINING POLICY: THE FOUR PILLARS

The implementation of the new ICAO Aviation Training Policy, through the GAT Office, is based on four main pillars. These are: the ICAO **TRAINAIR PLUS** Programme; ICAO **recognition of beneficial training offerings and best practices** by other aviation stakeholders; the **development of specific training packages** by ICAO to meet aviation priorities; and **greater cooperation** with Member States, United Nations organizations, international and regional organizations, and educational institutions.

GAT is using TRAINAIR PLUS as a driving force for training standardization, capacity-building, course development and instructional staff training. Through TRAINAIR PLUS, GAT leverages a comprehensive network of leading and reliable training institutions to support the development and delivery of training and to provide truly global access to affordable and competency-based training packages. The network has also welcomed industry players who may join as Corporate Members in order to enhance the exchange of best practices.

> The establishment of the GAT Office in 2014 is enabling ICAO to better respond to the needs of Member States in a more consistent and comprehensive manner.

RTCE NETWORK

Earlier this year, ICAO launched the exclusive ICAO Regional Training Centres of Excellence (RTCEs) network, comprised of leading TRAINAIR PLUS Full Members in each ICAO region. These RTCEs are selected by the GAT Office based on specific criteria and will be responsible for the development and delivery of ICAO training courses in authorized subject areas, such as aerodromes, air navigation services, air transport, environment, flight safety and safety management, and security and facilitation.

All courses developed by the RTCEs will be ICAO courses and based around ICAO Standards and Recommended Practices (SARPs) and guidance material. This will enhance the quality of aviation training delivered to States and ensure ICAO that provisions are well understood.

As of December 2014, six RTCES have been selected in three different regions:

- École Nationale de l'Aviation Civile (France)
- Incheon Airport Aviation Academy (Korea)
- GMR Aviation Academy (India)
- Gulf Centre for Aviation Studies (United Arab Emirates)
- Joint Aviation Authorities Training Organization (The Netherlands)
- Singapore Aviation Academy (Singapore)

Several other important deliverables have been realized by ICAO since the inception of the GAT Office including:

- Development of a competency framework and implementation of procedures for the selection, evaluation, and training of ICAO-qualified instructors;
- Establishment of online tools supporting the development and delivery of training courses and assessment of training organizations to ensure their compliance with ICAO guidelines;
- Creation of a GAT webpage (http://www.icao.int/Training) on the ICAO public website;
- Establishment of a Training Scholarship Programme for least-developed countries.

ICAO is also organizing, with the assistance of its Member States and international organizations, global and regional aviation training events to promote greater capacity-building and training in aviation. The next global event is scheduled to be held in Dublin, Ireland, from 24–27 March 2015. I would encourage all States, training organizations and professionals in the aviation industry to attend these important gatherings.

This new approach to training by ICAO is marking a shift in the way we deal with human resources development strategies. I am confident that it will help contribute to the more effective and harmonized implementation of SARPs and that it will send a strong signal to our sector that ICAO has made global aviation training one of its most important priorities. ■

FIVE WAYS TO IMPROVE TRAINING

ABOUT ANDERS HALSKOV-JENSEN
With a background as an air traffic controller in Denmark and Oman, Anders Halskov-Jensen has spent 26 years in the aviation industry, in training, system design and test, simulation in addition to a great deal of international work. Following four years as a training expert at Entry Point North, Anders has now assumed the position of Client Manager for international customers.

***"That's how we've always done it"*. This sentence more or less sums up one of the barriers for improvement in aviation training today. The reluctance to change was the main topic for my presentations at various ICAO events last year, under the headline *Changes in the Aviation Environment and the Impact on Training*.**

I have a background as an air traffic controller and I've had the privilege of working with and meeting fellow controllers from all over the world. I have always admired the people in my profession for their ability to adapt to all kinds of changes; be they new regulations, technology or procedures. But I have also been puzzled with my colleagues' (and my own) reluctance to embrace or accept changes, until the realization sets in that there is no way around them. Controllers like the current situation, almost regardless of the suggested future.

The same reluctance is often visible in operational aviation organizations and training departments where focus normally is on running operations and less on necessary training. For this reason, training may go unchanged for years simply because the outcome is acceptable and the necessary resources to review the training might never be allocated.

I have spent the last seven years of my career at a training academy, Entry Point North in Sweden. Being in an organization whose sole purpose is to provide training gives one a different perspective on education. During the lifespan of our academy, we've made many changes in order to constantly improve what we do. As a company that exists on market terms, we have to be on our toes so that our customers are satisfied with our services.

> … training may go unchanged for years simply because the outcome is acceptable and the necessary resources to review the training might never be allocated.

So, let's take a look at how training can be improved by implementing the right kinds of changes.

#1. CHANGE SOMETHING… ANYTHING.

In your organization, you might be content with the outcome of your training. Students will receive the same education you had many years ago, and the way you do things in your organization has been proven effective over years with a stable success rate of 52%. That's great. But what if it could be increased to 60%, 70% or higher? Solid training results are not the same as ideal or maximum training results. If nobody remembers the reasons for "having always done it this way", perhaps it's about time to change something.

#2. REVIEW YOUR TRAINING.

Training should be reviewed regularly, ideally after each course. Feedback from students, instructors and teachers should be gathered, analysed and discussed before deciding on which changes (read "improvements") should be implemented. In a busy organization, this step is easily neglected, especially if everybody is happy with the outcome. However, the aftermath of a training session is the best time to reflect on how things were done and how they might be improved. In a training organization like Entry Point North, where all we do is training, it's easier to establish regular reviews. But even we have to remind ourselves every now and then. I would guess that you do too. Correct?

#3. REVIEW INSTRUCTORS AND TEACHERS.

Even if this might seem slightly controversial, it's important to look at the staff you have for training. You can select the best pilot, air traffic controller or engineer in the world, and he might be the worst teacher or instructor ever. Teaching and instructing is also a professional skill. In our industry, there is a tendency to merely select somebody for training duties without considering their motivation or teaching skills. But hey, that's how we've always done it, right? And this leads me directly to the fact that…

#4. TEACHING IS ALSO A PROFESSION.

It takes years to become a teacher. It is a profession. You need to study. And yet, in many professions, including aviation, it's

If nobody remembers the reasons for "having always done it this way", perhaps it's about time to change something.

common to take anybody with the competencies of the trade and put them in a classroom to teach everybody else. It might not be the optimum way of doing things. You cannot put a teacher behind a radar screen or the controls of an aircraft and expect him or her to separate traffic or fly an aircraft. And yet we put controllers and pilots in classrooms and expect them to teach. Why? You must provide your training staff with professional training education. It will significantly improve the outcome of training.

#5 CHANGE YOUR VIEW OF THE STUDENTS.

When I trained to become a controller some 30 years ago, the view of students was simple. If you made it through the training, that's fine. You had what it took. If not, too bad. We'll find somebody else. A low success rate was generally accepted, as well as the assumption that it was difficult, if not impossible, to screen properly for the right skills for the trade. And no attention was paid to the individual student.

Today, recruitment and selection processes have improved significantly. But on top of that, it's also important to recognize students as future colleagues and as individuals who might need to be treated differently through difficult training. Of course, what one can do may be limited by financial or time constraints. However, aviation training is expensive and providing students with individualized attention may well be worth the effort.

At Entry Point North, we try to make students aware of their individual learning style and whenever a student encounters problems, we create individual action plans together with the student and the relevant instructors. The responsibility for completing the training does not rest with the student alone. It is shared with teachers, instructors and the academy itself. This approach has increased our success rate over the years.

Be also aware that generations differ. The current Generation Y is very different from my Generation X. They have other needs and expectations. They behave differently. The training that you provide should take this into consideration.

In general, changes should be welcomed and embraced. Within aviation, many changes are forced upon us by new legislation or technology. Consequently, we change operations and training to adapt. But we can also implement changes as the result of a desire to improve things - to make things better. By regularly reviewing how we train and the outcomes we achieve, we can implement the necessary changes and training can continuously contribute to a better and safer aviation industry.

Aviation has always been a very dynamic environment. This is the one characteristic that will never change. ■

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THE B787 DREAMLINER INDUCTION: FACING THE CHALLENGES OF TRAINING FOR A NEW AIRCRAFT TYPE

ABOUT CAPT. AMITABH SINGH
He has a rich career in aviation, spanning over 28 years. He has worked in various capacities as a pilot and an executive, with Ms. Vayudoot and Air India Ltd. He has successfully handled the responsibility of Project Manager - B787 Aircraft Induction Programme, while also heading the Training Division as Chief of Training (Boeing -Wide Body Fleet). He led the team of senior experienced pilots from Air India for B787 Flight Crew course evaluation, along with the DGCA. He was also a part of the team that flew the first B787 from Charleston (USA) to India. Presently, he is handling Flight Operations as General Manager-Ops., at the company headquarters located at New Delhi.

Air India was among the first customers to embrace the cutting edge technology of the Boeing B787 Dreamliner. On 30 December 2005, Air India Ltd. signed purchase agreements with Boeing and General Electric for 50 Boeing aircraft (with GE engines), which included 27 B787-8 medium capacity long range aircraft with a seating capacity of 258, at an estimated project cost of Rs. 33,197 crore (USD 7.377 billion).

Following years of delay, the aircraft was finally ready for entry into service by late 2011.

While Air India has excellent manpower resources and unparalleled experience in all fields of aviation including Flight Operations, Operations Engineering and Maintenance and Ground Handling, induction of B787-8 posed some unique and unprecedented challenges:

A composite aircraft

Air India's one-of-a-kind maintenance facility in Mumbai, was equipped to perform major checks and maintenance for both Airbus and Boeing conventional metal body aircraft. However, the composite construction of the B787 aircraft demanded the creation of a composite repair facility. This was relatively easy to accomplish. The existing manufacturing facility was reconfigured through expansion and modernization to meet the new and enhanced infrastructural requirements recommended by Boeing.

However, orientation and training of technical personnel in this new technology proved to be a far more arduous task. In order to ensure minimum ground time for aircraft maintenance, the technical personnel were provided with thorough in-house training prior to regulatory training at the manufacturer's facility. This not only enhanced familiarization for personnel, but also increased the rate of turnout of trained manpower.

Regulatory stipulations
Since the B787 was a new type of aircraft being introduced globally and Air India was one of the launch customers, India's national regulatory authority, The Directorate General of Civil Aviation, was required to be thoroughly familiar with the unique features of the aircraft, the type certification process to be followed and the limitations of the aircraft. Further, the training requirements recommended by the manufacturer needed to be vetted and approved, to enable formulation of a robust training plan.

Delays in aircraft delivery
The uncertainty of the aircraft delivery date posed some unique challenges. The Regulatory Authority required the aircraft to be type certified in order to grant approval for the aircraft type-specific courses to be conducted for the flight crew, cabin crew, engineers etc., while, at the same time, commercial business interests expected the new product, with its advanced features, to be put into service as quickly as possible upon delivery of the first aircraft.

MEETING THE CHALLENGES

The most immediate task at hand was training and qualification of personnel beginning with the maintenance engineers. The first batch of training for Licensed Aircraft Maintenance Engineers began as early as August 2010 at the manufacturer's training facility.

Next, Air India, in coordination with the DGCA, India, initiated the evaluation of the FAA approved Flight Crew Training Programme from December 2010 through February 2011. During this period, a team of experienced senior pilots from the B777 and A320 fleet and designated Flight Standards

> When the aircraft delivery finally firmed up in the last week of August 2012, the requalification of pilots was restarted on a war footing.

Capt. Amitabh Singh, Project Manager-B787 with the Boeing officials at the South Carolina based aircraft manufacturing facility.

B787 Induction Team.

Directorate Inspectors underwent the various courses offered in order to evaluate the adequacy and relevance of the course contents and recommend additional training to ensure safe operations.

Subsequent to the evaluation of the FAA approved courses and considering the inherent training and systemic requirements, the course footprints were enhanced by approximately 9.5% for Full Transition, 21% for Shortened Transition and 83% Differences Training. Special emphasis portions were incorporated to cater to the introduction of Heads Up Display, Electronic Flight Bag, Onboard Performance Tool, etc.

Although the training syllabus and facility were accorded DGCA approval in March 2012, the flight crew training could not begin immediately as the aircraft delivery date continued to be postponed. The decision on commencement of training had to be taken in consideration of the fact that Flight Crew Recency requirements stipulated that the training be completed within 90 days of entry into revenue services. Scheduling the training earlier, would entail additional training costs in order to meet the Recency requirements. On the other hand, delaying training would result in the non-availability of crew for flight operations when the revenue flights commenced.

In anticipation of the first aircraft delivery, expected around mid-June 2012, the flight crew training was finally started in mid-April 2012. However, we had to pause the training midway in July 2012 as the aircraft delivery was further delayed. As an interim measure, management reassigned the pilots back to feeder fleets to ensure adequate crew utilization.

When the aircraft delivery finally firmed up in the last week of August 2012, the requalification of pilots was restarted on a war footing. This requalification was carried out on a training footprint which ensured that the pilots were sufficiently competent to fly the B787. Taking into account the fact that they had to undergo reconversion and operate their previous fleet during the interim period, this exercise was conducted to enable effective risk mitigation.

MORE SURPRISES

Major operational safety issues kept cropping up: battery fires, ice crystal icing, etc. These resulted in the FAA and the DGCA issuing directives to ground the newly inducted fleet. This put an unprecedented strain on the training resources, as it not only resulted in pilot recency issues, but also the ongoing conversion training, which had to be abruptly halted.

The final challenge came in the form of qualifying company pilots to enable ferrying the first delivery flight into the country. Assisted by the Master Differences Requirement tables published in the B787 Flight Standardization Board Report issued by the FAA and the Operational Evaluation Board

On 10 July 2013, Air India achieved the unique distinction of being approved as the second Type Rating Training Organization (TRTO) in the world to offer B787 Type Rating training, the first being the manufacturer itself.

Report issued by the EASA, an enhanced training module was designed, which, after a thorough scrutiny by the regulatory agency and the Ministry of Civil Aviation, Government of India, authorized designated senior experienced pilots to ferry the first delivery flight into the country, after undergoing the additional simulator training, which was conducted in-house at our Mumbai training facility.

The Boeing fleet training facility of the company located in Mumbai was designated as the site for installation of the B787 Full Flight Simulator (FFS). The FFS manufactured by M/s Thales, conforms to "Interim Level-C". This simulator was approved by the DGCA in May 2012, and put into service with immediate effect.

THE FINAL OUTCOME

By the time the first aircraft landed in the country, we had imparted training to 65 pilots; 238 technical personnel including aircraft engineers, technicians, and ground instructors; 187 cabin crew; and 58 flight dispatchers.

On 10 July 2013, Air India achieved the unique distinction of being approved as the second Type Rating Training Organization (TRTO) in the world to offer B787 Type Rating training, the first being the manufacturer itself. ■

THE CHANGING AVIATION ENVIRONMENT MEETS VIRTUAL TRAINING: A MOVING TARGET

Credit: e*m company / P MASCLET

ABOUT MICHAEL KALBOW

In his role as Head of Training, Airbus Maintenance Training, Michael is responsible for the development and implementation of the Airbus maintenance training strategy. This includes standardization of pedagogy, training technology and airworthiness requirements applicable for all Airbus maintenance training centres worldwide. His experience includes delivery of training courses as instructor and the development of training systems covering all aspects of training from classical approaches to blended learning including e-learning, simulation and virtual reality.

Many organizations in the aviation training industry are trying to adapt rapidly to the challenges of responding to the increasing demands of training new entrants to commercial aviation. The apparently unending growth in demand means that, as the numbers ramp up, development of innovative, effective and efficient ways of training in all aviation disciplines is critical.

One approach to this is an evolutionary path over a period of the next five to ten years. The crux of this approach was articulated in an article developed with Chris Long, Editor for European Affairs, CAT Magazine, Halldale Media, in the 2-2013 Issue entitled: *Training – a Philosophy for the Future*.

Because I represent a leading aircraft OEM, I obviously have a focused interest in maintenance training and, in particular, Type Qualification for the Airbus. However, many of the ideas expressed here apply to future training across the board.

A VIRTUAL WORLD

To briefly describe the evolution of this type of training, it has moved from classic classroom theory/workshop practice (See Figure 1 "Chalk and Talk" and Figure 2 "Practical") and supervised work on aircraft to technological improvements such as CAT (Computer Aided Training, Video Assisted and Computer Based

I wish to open a discussion on the philosophy which will mould future training. There is certainly a fluidity to the way this training will develop.

However, it is not simply the application of emerging technology or new methodology, but, perhaps more critically, the evolution in the talents and mindsets of those who will drive the industry in the future. Not only is this requirement self-evident, but it reflects the bigger picture in commercial operations.

With great pleasure, I follow EASA's recent initiative to orientate relevant training rules towards this new reality by launching the NPA2014-22 for comments. Recent technical glitches aside, the focus of interest is moving away from "mere" technology to look very closely at the integration of people and the way they interact with the technology.

A new way of thinking will be necessary across all training disciplines and skills, and the shape of that thinking is still under development.

...any changes to maintenance training must respect the need for cost-efficient deployment – either close to the customer or in a virtual, immersive world that is accessible anywhere and, ideally, anytime.

Instruction (VACBI) and Computer Based Training (CBT), and to a newer world of Virtual Aircraft based on simulation and immersive technologies.

While I make the distinction between the varying levels of immersion in this virtual world, there is little doubt that it will, not only complement what is presently being delivered, but expand and improve the training environment.

CATERING TO A NEW GENERATION OF TRAINEES

Alongside these changes in technology has been the emergence of Generation Y, who exhibit a radically different mindset from their predecessors. Among the strengths shown by this group is their ability to study and work in complex situations – absorbing and moving easily in a world where there are multiple and instantaneous inputs. This fits naturally in an aeronautical world where the intrinsic interdependence of aircraft systems requires an immediate understanding of the effect of an action in one part of the system on all the other systems.

The classic subdivision of independent systems (e.g. hydraulics or electrical systems) is no longer relevant; nor is the study of these systems as separate entities appropriate. We, as an OEM, receive more and more feedback from airlines and MROs that their young, latest generation entrants to the industry are no longer interested in classic classroom training, but feel better adapted to competence and scenario-based training systems. The *Training by Airbus* ACT concept (*Airbus Competence Training* available for all Airbus families; A320, A330, A380 and A350) is one appropriate answer to their needs.

HOW MUCH DOES IT COST?

While Part 147 approved training organizations do their utmost to comply with its associated rules, one key driver for strategic

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Through its Global Aviation Training Office, the International Civil Aviation Organization (ICAO) has launched several activities to support human resources development strategies.

The AAETS conference programme includes a panel session to address the development and sharing of competency based training packages within the ICAO network of training organizations in over 70 states. Senior managers of ICAO recognized training centres will present and discuss their experiences and best practices in this area as well as highlight the key role of the private industry in responding to the growing demand of civil aviation professionals.

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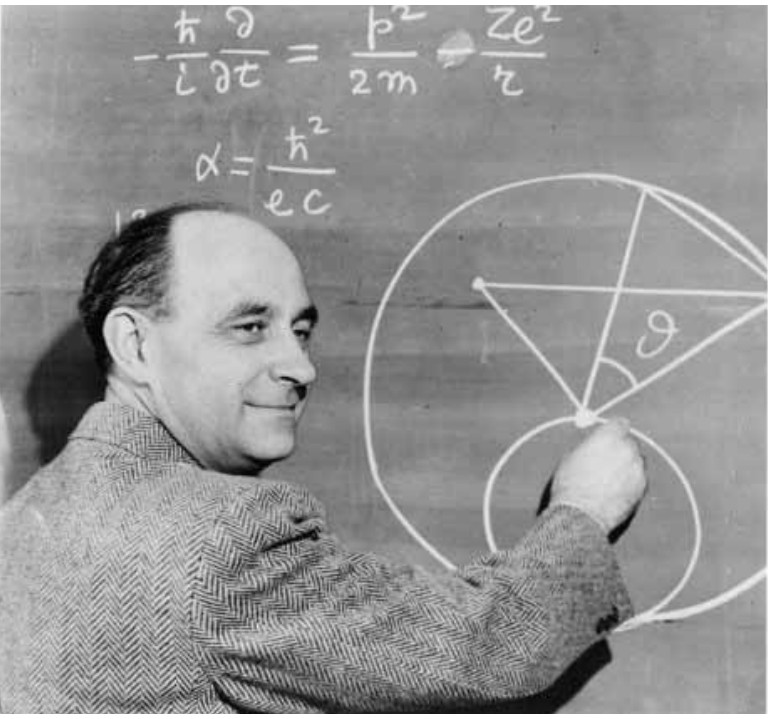

Figure 1: Chalk and Talk

Figure 2: Practical

Figure 3: ACT-A350-Scenario

We, as an OEM, receive more and more feedback from airlines and MROs that their young, latest generation entrants to the industry are no longer interested in classic classroom training, but feel better adapted to competence and scenario-based training systems.

business decisions should be mentioned here. The question of return on investment for any training initiative is constantly raised. Although training costs are not the biggest proportion of an airline's or MRO's labour costs, they are still a source of concern when it comes to the time spent outside of operations in a classroom or perhaps far away from day-to-day operations. In consequence, any changes to maintenance training must respect the need for cost-efficient deployment – either close to the customer or in a virtual, immersive world that is accessible anywhere and, ideally, any time.

FOCUS ON THE FUTURE

It is possible that within ten years we could well see a training process which, for the maintenance team, may never actually involve hands-on time on an aircraft in operations/service before applying it on the ramp (See Figure 3 "ACT-A350-Scenario").

By combining the natural talents of Generation Y (as well as their successors) with evolving technology, it is possible to envisage a situation where a student will be exposed to a holistic or immersive training process that embraces both distance learning and work immersion in a virtual environment. Scenario-based training will play a large part, together with selective "Gamification", to engage the imagination and spur interest.

This process would not only be rich in experience for the trainee, but could be delivered in smaller lesson packages better adapted to the shorter attention span exhibited by this demographic and could be specifically adapted to the individual – one size does not fit all!

Alongside their talents, there are characteristics of this group that remain something of a challenge. A key feature of this generation is a mind-set which has been encouraged to be explorative and interactive in the learning and working process. This contrasts markedly with the highly structured and disciplined approach which characterizes the aviation industry.

The conservative, systematic and disciplined style of aviation work has been forged in the quest for absolute safety and is unlikely to be abandoned in the immediate future, especially considering that more than 80% of maintenance errors are linked to not respecting maintenance procedures. Absolute adherence to procedures may not always sit well with a mental default setting that questions and challenges as a matter of course.

While new and highly personalized interactive training processes can be very effectively employed, it may turn out that the greater challenge will be to convincingly introduce the tightly defined discipline required in a rigorous safety management system (See Figure 4 "Safety First Magazine") to a challenging mindset.

Not impossible. But not easy, either. ■

Figure 4: Safety First Magazine

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THE USE OF E-LEARNING IN THE AVIATION SECTOR

ABOUT TAHSIN UĞURLU, Ph.D.
He has worked as a trainer and educator both in industry and academic circles internationally since 1985. With multiple degrees in Electrical and Computer Engineering, his expertise is in areas of networking, distant learning, and emerging technologies. Recently, he joined THY Aviation Academy as a Training Technologies and Coordination Manager. He is actively involved in e-learning, Cloud Computing, Q&A, web applications and utilization of emerging technologies.

ABOUT KEMAL YÜKSEK, Ph.D.
He is Senior Vice President of THY Aviation Academy. He has numerous degrees in Applied Mathematics and Computer Engineering and an extensive academic and private sector background in Information Technologies. His primary interests are mathematical modeling, database systems and software development. He is keen to utilize state-of-the-art technologies to enhance training methodologies as one of the leading senior managers and educators.

The Turkish Aviation Academy (TAA) shares its experience and best practices in applying e-learning to aviation training.

Since 1998, the TAA has provided training and consultancy to individuals and institutions in the aviation industry within the context of our ISO 9001 – 2000 Quality Management System.

In e-learning, any proposed or acquired methodologies should be implemented to meet the demanding training needs and focus on the core values of *knowledge*, *skills* and *attitude*. This applies to the total solution and the final product produced. We wish to offer the sector our experience and some best practices and considerations for selecting an appropriate system.

The Academy has increased the scope and efficiency of its training and has obtained approvals and accreditations necessary to proceed to coordinate, in cooperation with Istanbul Technical University (ITU), a Master's Degree Programme in Air Transport Management for professionals who wish to lead the aviation sector.

The Air Transport Management Master's Programme is unique in that it is delivered by instructors from prominent institutions in the field of aviation including Boeing, the Massachusetts Institute of Technology (MIT), Cranfield University, University of British Columbia (UBC) and ITU. We are providing enhanced e-learning support by utilizing our infrastructure to deliver the programme.

BUILDING AN E-LEARNING SOLUTION

Technological advancements in aviation and changes in aircraft technology have brought about new training approaches. During EASA's *New Training Methods or New Teaching Technologies* workshop held in Cologne, Germany this past September, the introduction of such approaches for technical training and their implications were discussed. Currently, the advantages and disadvantages of new training methods and teaching technologies, for Part-66 and Part-147 in particular, are being evaluated.

The training carried out at TAA is in line with EASA's proposed regulatory amendments for e-learning training and "any

In e-learning, any proposed or acquired methodologies should be implemented to meet the demanding training needs and focus on the core values of *knowledge*, *skills* and *attitude*.

digitalized tutoring devices at the training facilities".
The distinct aspect which we propose is aligned with EASA's expectation to "provide a definition of these new methods", which we will elaborate in more detail below.

The E-learning Department manages the designed courses on LMS, offers support to users throughout the course and performs measurement and reporting services. e-instructors are responsible for the design and revision of the training materials and are either appointed among instructors authorized to offer the course in the classroom or are part of the department requesting this (e-learning) training.

"Preparation of E-learning Content" consists of analysis, design and development. E-learning is the platform that brings together participants, instructors and course materials in the electronic medium.

The course curriculum content is converted to digital media and is delivered on an LMS platform to end-users that tracks course progress and measures performance. At TAA, it is delivered on an internet/intranet platform or computer network, using time-independent and non-spatial media, animation, text and visuals, and in which users can interact during practices, intermediary exams, simulations, applications, and games. During the course, preliminary and final grading/evaluations are carried out.

The preliminary and final grading/evaluations along with intermediary self-test exercises are performed as a time-independent and non-spatial e-exam which is predetermined within the system. This e-exam is comprised of questions that are selected through a special interface with the e-instructor or an authorized LMS user from a repository of questions on LMS and is delivered to end-users as a package.

E-learning design and implementation is comprised of four stages: e-learning design, e-learning management, grading/evaluation and other intermediary tasks. To ensure an effective outcome, visibility and accountability must be provided at all stages of training while the input/feedback of stakeholders should be welcomed.

WHY IMPLEMENT AN E-LEARNING SOLUTION?

A reason for our strong preference for e-learning, along with blended training sessions, is the global distribution of personnel within the aviation industry. Hence, the primary criteria which are taken into account when preparing any e-learning training are: mobility, ease of access from different locations, round-the-clock availability, standardization and consistency, and avoiding trainee fatigue as the result of long journeys.

One of the challenges faced in implementing e-learning internationally is acquiring authority approvals for all civil aviation training areas, first domestically, then from international regulatory bodies.

We have focused on a limited range of subjects as we wait for proposed amendments of EASA regulations to come into effect. In time, we believe that these amendments will be adopted throughout the industry to pave the way for us to expand into broader subjects such as Technical Maintenance Training.

In the last decade, the use of e-learning in formal learning has increased as the expense of traditional classroom delivery has risen. Most organizations are looking to maximize the effectiveness of e-learning through technological innovation and to move beyond workplace skills.

By establishing an effective e-learning environment, we have produced impressive results in practice and in implementation. Through content standardization and consistency of quality, we have saved precious time and minimized trainee fatigue in

> The term e-learning brings to mind *"Everywhere, Everyone, Effective, Efficient, Embedded, Engaging and Every time"*.

addition to the cost savings and the advantage of having personnel remain close to their places of work.

The term e-learning brings to mind *"Everywhere, Everyone, Effective, Efficient, Embedded, Engaging and Every time"*. The content is either custom-developed or ready-to-use and can be adapted to a variety of learning styles. It can be delivered synchronously or asynchronously. It is scalable to the size of audience and can be applied in a formal or informal setting.

Use of e-learning in operational training shapes the knowledge, skills, and attitudes of personnel while making an organization more productive. E-learning reduces scrap learning and creates value when the knowledge and skills are ultimately transferred out of the learning environment and put to use in the work of the individual and organization.

CONCLUSION

While we advocate increased use of e-learning in the aviation sector, important challenges remain. Aviation authorities worldwide must adopt a proactive approach to enhancing and updating their regulations in accordance with technological advancements as they occur.

At TAA, we are experiencing strong demand for delivery of high quality training in areas where e-learning can be employed without compromising on quality, safety standards, and effectiveness.

Until recently, e-learning was considered a new trend - an emerging technology - but with its increased adoption by companies, universities, and governmental institutions globally to train their employees, students and customers, it has clearly become part of the mainstream.

In any organization, this value-added approach brings in new learning perspectives along with efficiencies of both cost and time. The flexibility and modularity of e-learning can be utilized to custom design any course form to suit all stakeholders. ■

ICAO

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TALENT MANAGEMENT FOR AIRPORT PROFESSIONALS

ABOUT KEVIN CARON
He is the Head, Global Training and Human Resources, for Airports Council International in Montreal. He joined ACI in March 2010 and is responsible for the leadership of ACI Global Training and its Human Resources Department. In addition, he serves on the ACI-ICAO AMPAP Steering Committee as ACI Team Leader. Prior to this posting with ACI, Kevin spent eight years with the Montreal Airports Authority (Aéroports de Montréal). He joined IATA in 2003 and held two training management positions in security and airports prior to joining ACI.

Investing in both current and future airport professionals makes good business sense.

At Airports Council International (ACI), our members are continually looking at ways of investing in their people. As airport Human Resources (HR) moves to the strategic function of business partner, HR professionals continue to work closely with airport senior management to attract, hire, develop and retain talent.

To this end, many in the airport HR profession are forward-looking in terms of talent management. By doing so, they are making sure their operations will be positively positioned to succeed in the global competitive market for talent.

Taking this into consideration, HR professionals must adopt an integrated approach to talent management because it offers a path towards organizational excellence in safety, security, operations and leadership.

...HR professionals must adopt an integrated approach to talent management because it offers a path towards organizational excellence in safety, security, operations and leadership.

WHAT IS TALENT MANAGEMENT?

According to Wikipedia:

"Talent management refers to the anticipation of required human capital for an organization and the planning to meet those needs.

Talent management is the science of using strategic human resource planning to improve business value and to make it possible for companies and organizations to reach their goals. Everything done to recruit, retain, develop, reward and make people perform forms a part of talent management as well as strategic workforce planning. A talent-management strategy needs to link to business strategy to make sense."

WHY DOES TALENT MANAGEMENT MAKE GOOD BUSINESS SENSE FOR AIRPORTS?

ACI members are keenly aware that the people working for the world's airports are committed to providing safe, secure and customer-focused service to the travelling public.

To be able to maintain this, we need to take a genuine interest in the future career growth of our airport employees. Talent must be taken seriously by both managers and the leadership team in cooperation with the HR team. By doing so, we are building loyalty. And loyalty increases business and operational excellence.

We all know that loyal employees are more engaged. And engaged employees are more innovative and productive. Good, talented people naturally want to advance and appreciate meaningful support in the process.

In a recent article, the Society for Human Resource Management (SHRM) identified four key steps to improve talent management:

1. Understand the needs and dynamics of the talent pools.
2. Quantify what's happening in the talent pipeline.
3. Shape the portfolio of experiences for key employees.
4. Approach talent decisions with a long-term mindset.

The first step involves the needs of talent pools with regard to education, specific training, wellness and a positive work environment that promotes cooperation.

The second step encourages the organization to focus inward to determine what talent is currently available within the airport. This would include the need for HR to collect data to identify where there is job movement in terms of high/low rates of attrition, for example, in the airport operations department. Once complete, the organization can determine whether to promote internally or hire externally.

The third step is related to the development of job competency requirements. This would determine, for example, the skills required to become the airport's Director of Engineering or Director of Security.

The fourth step deals with managing talent development as a function of the airport's long-term strategic plan. This process allows us to evaluate who should move to which role, when we should invest in additional education or coaching and when we should end the investment.

Talent management need not be complicated or costly. At its core, it is mostly a matter of good managers taking the time to understand their employees person-to-person, recognizing their skills and needs and linking this to the airport's strategic plan.

If it is done well, the payoff can prove to be substantial in terms of long-term loyalty. Poorly done, the results can be devastating and costly over many years to come. ■

PROFESSIONAL DESIGNATIONS IN AVIATION

The programme that will pay dividends for our industry

ABOUT VICTOR DE BARRENA-SAROBE

With over 25 years in the aviation industry, Victor de Barrena-Sarobe rejoined IATA in January to lead the ITDI team worldwide. Victor has worked in the training and HR areas for the last 11 years of his career, leading teams to emphasize and prioritize the importance of training and L/D in international organizations. Victor is originally from Spain and is currently based in Geneva, Switzerland.

In today's fast-paced job market, professional designations, or certifications, provide real advantages to job seekers and employers. By defining the most widely accepted qualifications needed to perform a job or task, professional designations are the solution to job mobility in many industries. Certification programmes are successfully in place for pilots, mechanics, and auditors – so why haven't other areas of aviation taken note?

AVIATION'S INCREASINGLY COMPLEX JOB MARKET

The world of commercial aviation is changing. Thanks to deregulation, constant advances in technology and a global demand for air traffic, our industry is growing at an unprecedented rate. Commercial aviation has evolved into the global air transport system that will safely connect some 3.3 billion travellers with nearly 100,000 flights per day across 50,000 routes this year alone. This activity drives economic growth, creates jobs and facilitates business opportunities. Aviation's annual economic impact is estimated at $2.4 trillion and it supports 3.4% of global GDP.

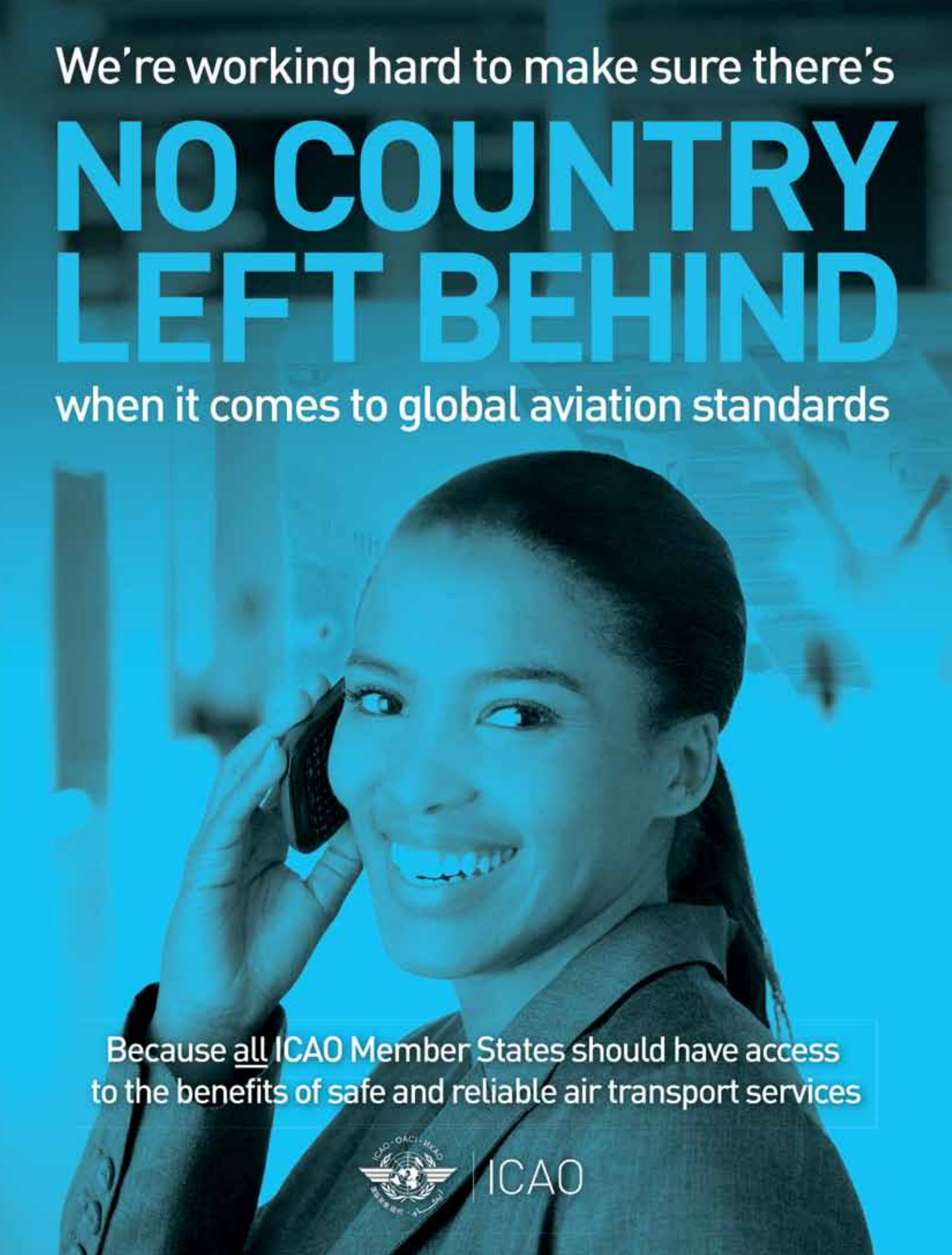
While our booming industry helps bring the world closer together, today's aviation professional is forced to navigate an increasingly complex job market. Constant change in our industry has spurred a number of new job roles, mandatory skill sets, and evolving ways of doing business. In turn, employers are forced to demand greater technical skills and versatility from the workforce.

Photo courtesy: IATA

We're working hard to make sure there's

NO COUNTRY LEFT BEHIND

when it comes to global aviation standards



Because all ICAO Member States should have access to the benefits of safe and reliable air transport services

ICAO

With a clear roadmap to confirm skills and subject matter expertise, employers can save on recruitment, on-boarding and job training costs, and allocate more resources to learning, development and retention.

As our industry consolidates in multiple regions, working with many regulators, and businesses that apply their own requirements on the people they employ, hiring the right candidate has become a more complex proposition.

Today's recruit is likely to have worked in a number of jobs, at different companies, and maybe even in different industries. The average worker today is expected to stay at a job for just over 4.4 years, according to the Bureau of Labor Statistics, but the expected tenure of the workforce's youngest employees is about half that. Ninety-one percent of Millennials (born between 1977 and 1997) expect to stay in a job for less than three years, according to the Future Workplace "MultipleGenerations@Work" survey of 1,189 employees and 150 managers. That means they would have 15 – 20 jobs over the course of their working lives! (Source: Forbes.com)

Young professionals today are no longer wooed by the excitement of an aviation career alone. They look for structure, technology proficiency, and advancement opportunities. Skilled labour today will not come through the ranks, as traditionally experienced in aviation. Skilled labour is key for most operational roles. And we are beginning to see the issue of skilled labour shortages, as reflected in ICAO and other industry organizations' different findings through the Next Generation of Aviation Professionals (NGAP) initiative.

As a service industry, people are our business. And we have to keep pace with global employment trends if we are to attract the most coveted talent. We cannot expect today's professionals to start and end their careers in aviation. Once we hire a new recruit, we have to assume they will consider changing jobs, companies, even industries, in search of career advancement. Here is where we need to step up our game to be able to provide the compensation packages, job satisfaction, and development opportunities to retain talent in our industry.

Our team is in contact with trainees, hiring managers, and HR staff on a daily basis, and we hear first-hand about our members and clients' challenges in attracting, retaining, training and engaging new talent. Different statistics show that outside our industry, over one-third (36%) of 1,400 executives surveyed felt the top factor leading to a failed hire, aside from performance issues, was a poor skills match. The second most common reason (30%) was unclear performance objectives (Source: roberthalf.com). This is both a problem and an opportunity to bring further standardization and harmonization to the industry.

AN INDUSTRY SOLUTION TO AN INDUSTRY PROBLEM

Time and again, standardization and harmonization have proven beneficial to our industry. We at IATA believe the same can, and should, apply to the way we define the jobs that are common to all airline-related businesses.

As seen in the technology, health care, and finance sectors, employment issues are neither localized nor company-specific. The workforce in many sectors is increasingly international and mobile, raising the need to address employment matters at an industry level. As such, professional designations have become a highly effective solution in a number of economic sectors. From Project Management Professionals, Microsoft Certified Professionals, to Certified Professional Co-active Coaches (CPCC), just to name a few, employers and job seekers recognize the benefits of standardizing professional areas that were either not organized or even present before.

In cooperation with ICAO and following its lead, IATA has been testing models for a professional designation programme with the hope of bringing it to the industry by 2015. Although a number of programme models exist in a range of industries, including aviation, all work from the same premise of assuring individual qualifications to perform a job or task.

We believe there is a real and current need to standardize the minimum required competencies, job descriptions, and career paths for roles in cargo, travel agencies, and airline management. There are still key questions to address as to designation requirements, global adoption, viable training implementation, and how to maintain the designation and its competencies throughout the lifecycle of a professional's career. For this, we will continue to work with the industry to ensure consistency. ICAO's TRAINAIR PLUS initiative will continue to guide the principles of this approach.

We haven't had to look far for inspiration. Key regulators and organizations, including ICAO, Airports Council International (ACI), the Federal Aviation Administration (FAA) and IATA have taken the lead with the introduction of certification programmes for pilots,

airport managers, mechanics, and cargo professionals. At IATA, we have also found success in areas such as the Center of Excellence for Independent Validators (CEIV) and the IATA Training and Qualification Initiative (ITQI) programmes.

COMMON LANGUAGE, COMMON BENEFITS

Existing professional designation programmes have provided measurable proof of the mutual benefit gained from the "common language" of professional designations:

- **Job seekers, new recruits, and seasoned professionals will know where they stand.** Professionals have the satisfaction of knowing their career paths and are motivated to update their training in order to maintain their designation. Global job standards will facilitate movement and motivate professionals to stay on top of the latest industry standards.
- **Employers will be able to streamline their hiring processes.** Data from Glassdoor.com, a site that collects information on hiring at different companies, shows that the average duration of the interview process at major companies has roughly doubled since 2010. With a clear roadmap to confirm skills and subject matter expertise, employers can save on recruitment, on-boarding and job training costs, and allocate more resources to learning, development and retention.
- **Industry standards will be applied across the board.** Standards drive quality in our industry. A common set of standards with which to measure skills and proficiency will benefit the level of service, safety and performance. In other industries, certification of professionals has proven to increase productivity, consistency and professionalism. Industry leading organizations are dealing with the issue already.

Time and again, standardization and harmonization have proven beneficial to our industry. We at IATA believe the same can, and should, apply to the way we define the jobs that are common to all airline-related businesses.

Photo Courtesy: IATA

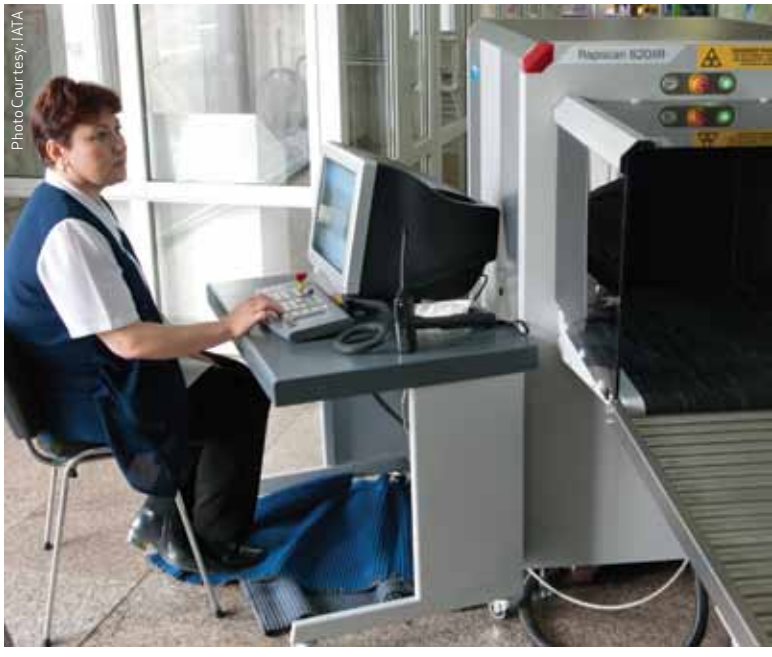


Photo Courtesy: IATA

Photo Courtesy: IATA

Failure to maintain a common standard may have an adverse impact on our industry's ability to maintain service levels in multiple areas. As an illustration, in the U.S., the FAA has warned that "unless work is described with reasonable accuracy and the required skill sets are ensured through adequate recruitment, selection, training, and placement of personnel, estimates of the number and distribution of ASIs required to sustain system performance will remain equivocal."

Harmonized task performance standards and competency-based training programmes result in personnel who are trained and assessed against competency standards. They generate records that provide evidence that these individuals meet the defined standards, which makes it easier for organizations to employ personnel from other countries and organizations.

Professional standards will be adopted widely in most areas of our world economies, and they will also need to be a key part of our industry as we look at the next 10-15 years of development. Seniority is no longer the driving force for professionals to stay with a company as new opportunities and new emerging economies mature.

CALL FOR SUPPORT

It is up to the leaders in aviation organizations to accept this challenge and develop a solution. This can only work if we take a collaborative approach. With ICAO's guidance, this industry will succeed in transforming professional designations into job descriptions; agree on the common minimum criteria for a person to perform a job/task; and create the common standard for jobs that have become common professions in our industry. This process will help to raise professional standards and maintain a high level of competence and ethical practices. In addition, professional designations will support the goal of continuous improvement for an individual's skills and professional development, as well as clarifying the necessary skills, knowledge and standards of conduct.

At ITDI, we will continue to facilitate industry support for these needed designations through the participation of our experts in industry task forces, working groups and committees. The jobs to focus on will be coordinated with our stakeholders. We have already begun these discussions. A complete guide and further details of IATA's professional designations can be found at: http://www.iata.org/training/certification/Pages/index.aspx. ■

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ESTABLISHING A NEW AVIATION TRAINING CENTRE IN THE UNITED ARAB EMIRATES

ABOUT KAJ KJOELLER CHRISTENSEN
He is the Head of Training at the GAL ANS Training Centre, located in Al Ain, United Arab Emirates. Together with his highly motivated and professional crew, Kaj has been the key to the success of establishing the GAL ANS Training Centre. Before joining GAL ANS, he worked with Emirates Aviation College as Chief Instructor for ATC Training. Kaj has been an Air Traffic Controller since 1978 and has delivered training in several countries in the Middle East and Europe.

Global Aerospace Logistics, Air Navigation Services LLC (GAL ANS) is an Emirati company dedicated to creating a balanced, expert workforce specializing in aviation services for the United Arab Emirates (UAE). The company is focused on the process of Emiratization in order to build a superior Emirati workforce, not only with regard to delivery on our specific contracts, but for the UAE as a whole.

GAL ANS's objective is to provide suitable training, recruiting, and skill and knowledge transfer from the expatriates who work here to UAE Nationals. GAL ANS establishes Human Resources (HR) strategies to take up skill-based Emiratization. The main objective in this regard is to efficiently integrate and engage in various Emiratization activities (i.e. recruitment fairs, training programmes, etc.) to locate candidates who have the required skill sets as the result of their educational background and/or prior work experience.

A part of the company, the GAL ANS Training Centre, was opened in Al Ain in 2009. Its initial purpose was to train Air Traffic Controllers for Military and Civil Air Navigation Service providers in the UAE as well as outside the country.

SOLID PREPARATION IS THE KEY TO SUCCESS.

The GAL ANS Training Centre was, from the beginning, set up as a civil training centre as it was a requirement that ANS operations and training should follow ICAO Standards and Recommended Practices (SARPs).

Instructional personnel were recruited from all over the world. These were all highly professional people with enthusiasm for ANS training and many years' experience in this field of expertise.

The first step was to carry out a Training Needs Analysis (TNA) for operational staff at GAL ANS and establish the requirements for training for these employees – if any. TNA questionnaires were distributed to existing as well as new employees to gather information on previous and current validations held, previous training (including where and when this had been completed), English Language Proficiency (ELP) assessment, Instructor training, Continuation and Refresher training completed and, finally, ATS proficiency assessments completed (including information on place, year and rating).

The information from these TNAs formed the basis for the decision on which training courses had to be established first and which could be developed and delivered as second priority to secure the required quality and safety of the Air Traffic Services provided by GAL ANS.

To ensure the highest possible rate of success of the On-the-Job Training following the completion of the courses at the training centre, it was decided initially to establish development training for instructional staff at the units; Classroom Instruction courses, On-the-Job Training Instructor courses, Training Officer and ATC Examiner courses. An Aviation English training programme and ELP testing were also introduced to comply with ICAO recommendations.

Finally, a decision was made that the training centre should offer Initial, Rating, Development and Continuation training related to Air Navigation Services for the UAE and surrounding countries.

Because one of the objectives of GAL ANS is to train and recruit UAE Nationals to eventually fill all positions, it was very important to establish recruitment procedures that could guarantee recruitment and selection of well-motivated candidates with good educational and/or job backgrounds.

THE IMPORTANCE OF DOCUMENTATION AND ACCREDITATION

The next important step in the process of establishing the training centre was accreditation from the local Civil Aviation Authority (UAE GCAA). This process included developing courseware, establishing an Operations Manual, documenting the processes and procedures, obtaining accreditation for post-holders and instructors and approvals of the facility including simulators and other equipment.

The training centre received very professional support from UAE GCAA and obtained accreditation as an ***Approved Training Organization*** (An organization approved by and operating under the supervision of a Contracting State in accordance with the requirements of Annex 1 and guidance from ICAO DOC 9841 to perform approved training) after many months spent gathering and assembling the required documentation.

RECRUITMENT AND SELECTION OF CANDIDATES FOR AB INITIO TRAINING IN A VERY COMPETITIVE MARKET

The third step was to establish recruitment procedures for Ab Initio students in order to supply candidates for Ab Initio training, which was scheduled to begin in 2010. Because one of the objectives of GAL ANS is to train and recruit UAE Nationals to eventually fill all positions, it was very important to establish recruitment procedures that could guarantee recruitment and selection of well-motivated candidates with good educational and/or job backgrounds.

The UAE is a multi-cultural society, where Nationals make up less than 15% of the population. With the strong growth of the economy in the region and the visionary expectations of the leadership of the UAE, all companies recruit intensively, offering contracts and scholarship training with many different benefits to attract the best possible workforce. Intensive marketing of the training and jobs offered is important to attract young people in this very competitive market.

Following intensive research, it was decided to set up a testing programme designed by GAL ANS. While there are many very good testing programmes on the international market, local culture and requirements are rarely taken into account. The GAL ANS recruitment programme included English Testing and Aptitude Testing targeting training specifically for Air Traffic Service, which included: Air Traffic Control, Meteorology and Aeronautical Information Services.

The tests used as part of the recruitment process are constantly being measured against the outcome of the training and necessary corrections or changes in the tests are implemented. It has been necessary to change and add tests to accommodate special requirements for new or specialized training programmes, including mathematics and physics tests.

Course Developers have been trained to TRAINAIR PLUS standards and future training courses will be designed in accordance with ICAO TRAINAIR PLUS standards.

BECOMING AN OPERATIONAL AVIATION TRAINING CENTRE

Upon receiving UAE GCAA approval as ATO and having all required instructional staff (English Teachers, ATS and MET Instructors, Pseudo Pilots and support) in place, training was initiated for existing staff at GAL ANS units.

All Air Traffic Controllers and Assistants working within GAL ANS were trained on refresher courses. Extra training was delivered if required, such as English Language training to ensure the minimum ICAO English Language Proficiency (ELP) Standards.

The first Ab Initio training courses commenced at the end of 2010 and several hundred Ab Initio students have been tested, selected and trained since then.

Courses were offered for external clients and the GAL ANS Training Centre is now offering and delivering ATC, MET, ATSEP and AIS training courses to military and civil ANSPs in the Middle East region as well as other regions.

ESTABLISHING DIPLOMA PROGRAMMES IN AIR TRAFFIC MANAGEMENT

Shortly after the GAL ANS Training Centre was established, we were requested to develop an Academic Diploma Programme in Air Traffic Management (ATM). A cooperation agreement was signed between GAL and Al Ain International Aviation Academy to develop and deliver this programme. The requirement was for a three year programme for UAE high school graduates to nurture competent and qualified aviation technologists, especially focused on Air Traffic Services.

The documentation to be submitted to the Ministry of Higher Education to achieve accreditation for such a programme was a serious challenge for the newly established Training Centre. Manpower had to be sourced from training to gather the documentation and compile it in the correct format. The Training Centre's experience from the previous accreditation by UAE GCAA was invaluable during the accreditation process with the Ministry and proved again how important it is to have all documentation in place.

An audit by two universities in the United States that offered ATM Academic training proved very successful and resulted in the best possible outcome, considerably facilitating the final accreditation. The first students have since achieved their Diploma and Higher Diploma in ATM.

A change in strategy is now necessitating the establishment of a Vocational Diploma training programme in the UAE for Air Traffic Controllers. This programme will be subjected to accreditation by the UAE National Qualification Authority and will only be accredited if all of the stakeholders in the country agree on the content of the programme. This has proven to be a major new challenge for the GAL ANS Training Centre.

Negotiations are presently ongoing to obtain agreement from the industry in the UAE and this programme is expected to be accredited by the Authority in 2015.

MEMBERSHIP IN THE ICAO TRAINAIR PLUS PROGRAMME

The GAL ANS Training Centre constantly strives to have all its training courses meet the latest internationally recognized standards and practices. For this reason, it elected to apply for

membership in the ICAO TRAINAIR PLUS Programme in 2014.

While the process to become a member was a new challenge, it did show that the required documentation to achieve the initial ATO approval from UAE GCAA had positioned the Training Centre well for membership in the ICAO TRAINAIR PLUS Programme. The Training Centre received great support from the TRAINAIR PLUS Programme as it moved through the process of becoming a member. Course Developers have been trained to TRAINAIR PLUS standards and future training courses will be designed in accordance with ICAO TRAINAIR PLUS standards.

LESSONS LEARNED

- We have learned that it is very important to prepare well when establishing a new aviation training centre. All documentation must be prepared properly from the outset in order to facilitate approvals/accreditations.
- We have learned that it is difficult to attract young people to aviation training in a market that offers so many possibilities for education and jobs for the new generations. We are constantly searching for new ways of doing this – a great deal of inspiration for this comes from the NGAP/TRAINAIR PLUS Regional Symposia where experience from other programme members is shared. Strong and effective marketing of the training/education offered is an integral part of attracting new generations to the fast growing aviation market.
- We have learned that establishing a training centre with multi-cultural experienced and highly motivated instructional staff is good, but that it is as important to take into account local cultural aspects in the training process.
- We have learned that new generations are developing skills and attitudes that are different from previous generations. It is important to constantly update/change the training methods used in accordance with this.

The importance of safety and efficiency of aviation through the establishment, maintenance and monitoring of high standards of training and competency of aviation personnel cannot be understated.

The fast growing aviation market in the Middle East region with traffic movements increasing at an average rate of 10% or more per year and the consequently complex airspace structure is a challenge for any ANSP and makes it even more important to provide these high standards of training to ensure the safe and efficient conduct of flights. ■

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SIR SEEWOOSAGUR RAMGOOLAM INTERNATIONAL AIRPORT'S JOURNEY TO EXCELLENCE

ABOUT SERGE PETIT
He is a licensed Professional Engineer in both the UK and North America and a Certified Project Manager (PMP). Serge has served as the World Bank Consultant in Sub Saharan Africa and was Senior International Project Manager designing and managing World Bank infrastructure projects in Canada, Africa and Latin America. Since March 2009, his position as Chief Executive Officer of Airports of Mauritius Co. Ltd. has afforded him the opportunity to gear the construction project of the new Passenger Terminal of SSR International Airport and other major development projects at the airport.

The Republic of Mauritius is located in the middle of the Indian Ocean some 2000 km from Africa, the nearest continent, and a four hour flight away from Johannesburg, South Africa. Sir Seewoosagur Ramgoolam International Airport (SSRIA), the sole airport on the island, is thus a key national infrastructure for the country connecting the island to the rest of the world and driving the socio-economic development of the country. As such, the airport has always been at the forefront of the country's development agenda.

Conscious of its responsibilities and of the need to position Mauritius as a leading airport in the Indian Ocean region and on the African continent, Airports of Mauritius Co. Ltd., (AML) the licensed aerodrome operator for SSR International Airport, has embarked on a *Journey to Excellence in Passenger Service* since early 2011.

Mauritius has built a worldwide reputation as being a high class tourism destination. Therefore, it was deemed natural to join the national endeavour towards delivering excellence so that the five-star experience could begin right at the airport. In 2013, SSRIA was on the podium of the Best Airports in Africa and was awarded Best Airport of the Indian Ocean.

A MAJOR INFRASTRUCTURE INVESTMENT

In recent years, AML has developed and implemented a holistic modernization plan focused on the improvement of the physical airport infrastructure and on raising the standards of airport services. More than USD 500 million has been invested in projects aimed at increasing passenger and aircraft handling capacity and enhancing our compliance with international aviation safety and security standards.

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In 2013, a modern passenger terminal was put in service raising the annual handling capacity to 4.5 million passengers. With the improvement to the airside infrastructure, Mauritius now enjoys daily service by two A380 type aircraft.

Our unique, strategic position between Africa and Asia, two continents with promising growth, has fostered greater aspirations for our airport. A multipronged strategy to transform our existing passenger airport into a full fledged aviation hub, opening up opportunities for boosting aviation activities such as Freeport and Cargo, Aircraft Maintenance and Aviation Training is already starting to bear fruit.

ACI – ASQ QUALITY MONITORING

In concert with the airport infrastructure improvements, AML has been adamant in ensuring the highest standards of services to passengers and stakeholders. Monitoring the quality of the services we provide has been essential to our progress. Upon joining the Airport Council International - Airport Service Quality Monitoring Programme (ACI-ASQ), AML became aware that the only way to bring SSRIA forward and achieve its aspirations for excellence was to establish benchmarks with the world's best airports.

Since adopting the ASQ Programme in 2011, SSRIA has climbed from the fifteenth position for quality in the category of international airports with 2-5 million passengers and is presently among the top two airports in this worldwide ranking. The significant progress made is the result of a deep-rooted organizational commitment towards delivering excellence and the drive to remain on the competitive edge.

Employee commitment to excellence is promoted by a performance management system which links remuneration with key ASQ performance indicators. We work daily towards being forward-planning in all our actions; taking the basics of passenger service to near perfection; creating the right airport ambience and ensuring stress-free airport processes. All with a view of creating the unique five-star airport experience, powered by passionate airport staff.

The quarterly results of the ACI ASQ allow us to assess our performance and identify the airport service elements that require improvement. With the support of Management, an extensive quality programme is developed using focus groups, comprised mostly of operational staff who possess the experience and technical know-how to improve the processes. Focus groups meet regularly and are assigned the responsibility of developing new initiatives that bridge the quality gaps. Following implementation, monitoring is carried out and the efficiency of these new initiatives is reviewed.

CONTINUOUS MEASUREMENT

The way forward is certainly not one of complacency. Additional efforts and resources are being allocated to the continuous measurement of airport service quality and to keeping our personnel motivated and passionate about excellence. Our quest cannot be successful without buy-in by the other airport

Our strategy is to put the human element at the core of our service delivery.

stakeholders. Increasing their commitment and winning their full support in implementing our quality initiatives, although not a daunting task, is certainly a challenge we need to tackle. In this respect, we are focusing more on consolidating a strong and common brand name for our airport that would make all airport stakeholders feel proud to be part of the Sir Seewoosagur Ramgoolam International Airport community.

A FULLY INTEGRATED TRAINING CENTRE

Substantial investments will also be made in the training of our personnel, to ensure the highest standards of service delivery and safety of operations. Discussions are presently underway with the Global Aviation Training Office of ICAO to become a member of the ICAO TRAINAIR PLUS Programme and the creation of a fully certified training centre. This would enable us to consolidate our existing internal training capabilities and would be an opportunity for our partners to combine their respective training resources under one roof as an ICAO TRAINAIR PLUS member training centre.

DEVOTION TO EXCELLENCE

Our strategy is to put the human element at the core of our service delivery. Our devotion to excellence has paid substantial dividends. The ASQ ratings and international recognitions we have received are a testament to the success of our business model.

However, fierce competition from airports in the region and within our airport category compels us to constantly seek out new strategies and initiatives that allow us to maintain our ranking as a quality airport.

This pursuit could not be undertaken without the invaluable contribution and support of our airport personnel. Our people remain a crucial asset and the key to the continuation of our successful journey. ■

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ARE PILOTS THE NEW THREAT TO AVIATION SAFETY?

Loss of Flying Skills Must Be Addressed

ABOUT GREGORY DARROW
He has a long history of pilot training with South Pacific Island Airways, Wings West, American Eagle, Aloha Airlines and American Airlines. A pilot with over 17,000 hours of flight time, he has flown and been an instructor on many regional and mainline aircraft, as well as an FAA training center examiner on Boeing 737 and 757/767 aircraft. He has assisted airlines around the world in recruiting, training and retaining flight crews. He is Vice President, Pan Am International Flight Academy.

Air France *447 lost over the South Atlantic*, Asiana Airlines *214 hits the seawall on approach to San Francisco*, Colgon Air 3407 *crashes into a neighborhood in New York*. All of these accidents have one thing in common; a lack of pilot flying skills was a contributing factor.

In the past, improvements in aviation safety have focused on threats such as Controlled Flight into Terrain (CFIT), Runway Incursions, and Unstable Approaches. By identifying these challenges to safety, airlines and regulators have been able to train pilots to avoid these threats and reduce accidents.

Since the 1970s, electronic flight instrumentation and flight management systems have decreased cockpit workload and have automated many pilot functions. But have they also created a new threat?

DECLINE IN PILOT FLYING SKILLS AND PROFICIENCY

A recent report by the FAA stated that opportunities for airline pilots to maintain their flying proficiency by manually flying are increasingly limited. Many airlines discourage pilots from turning off the autopilot. Today, automation and flight management systems are integrated in even the smallest airplanes. From primary flight training aircraft with Garmin 1000 Electronic Flight Instrumentation Systems and a full coupling autopilot to advanced regional aircraft, younger pilots are being raised on automation.

For more senior pilots, an increase in long haul flying and standard operating procedures that discourage "hand" flying have reduced manual flying proficiency.

Increasing the manual flying proficiency of airline pilots and maintaining instrument flying skills will take the cooperation of operators, regulators and pilot associations.

Once pilots come to rely on these systems, one malfunction can suddenly spill into a sequence of other failures. The FAA's Aviation Safety Reporting System shows that even a "simple hand flown go around" can lead to serious mistakes in aircraft control. Bill Voss, president of the Flight Safety Foundation in Alexandria, Va., recently stated that the inability of pilots to respond to the unexpected loss or malfunction of automated aircraft systems must be "dealt with".

In a study for San Jose State University entitled the *Manual Flight Skill of Airline Pilots*, Antonio Puentes reported that: "As a result of prolonged use of automation, pilots flying complicated airliners may also be unprepared to manually take over controls when automation fails or performs unexpectedly. During a routine flight in 2010, a Boeing 737- Next Generation aircraft began an uncontrolled dive towards the ocean below. The First Officer struggled to comprehend exactly what was happening while paralyzed by fear. The Captain, who had left the flight deck to use the restroom, was frantically trying to get back into the locked flight deck. Once entry was gained, the Captain was able to bring the aircraft under control and return to cruise flight. The First Officer had accidently disengaged the automatic pilot, but fear, panic, and the lack of manual flight practice prevented him from recovering the airplane from its nose dive."

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The problems associated with complacency and non-proficiency from overuse of automated systems can be alleviated by routine manual flight practice and training.

The National Aeronautics and Space Administration (NASA), Moffett Field, California has shown: "Cockpit automation systems now routinely assume primary responsibility for many piloting tasks that once relied exclusively on the hand-eye and cognitive skills of human pilots. Pilots no longer have to constantly scan flight instruments; decide which control inputs are needed to pursue a desired heading, course, altitude, or speed; or manually carry out those control inputs. Today, pilots can use a flight director that automatically determines which control inputs are needed and use autopilot and autothrottle systems that automatically manipulate the aircraft controls."

The problems associated with complacency and non-proficiency from overuse of automated systems can be alleviated by routine manual flight practice and training. To maintain instrument proficiency and coordination of flight controls and power settings, pilots need to routinely utilize their instrument scan and "stick and rudder skills". An airline's standard operating procedures and cockpit duties should encourage the pilot to scan his instruments especially when automation is engaged. When appropriate, pilots should be encouraged to manually control the aircraft.

At Pan Am International Flight Academy, a recent airline candidate for Captain upgrade could not accomplish a simple hand-flown ILS approach. With over 3 years and one thousand hours as First Officer on the Boeing 737 flying for the airline, the pilot had very little actual hand flying experience. His company's standard operating procedures were to engage the Autopilot at 500 feet and, when not auto-landing, the autopilot was disengaged at about 300 feet. Auto throttles were never disengaged. This is one example of how automation and a company's reliance on automation diminishes the skills of its pilots and increases the risks to safety.

In recent years, many simulator training events have focused on "automation" management. Pilots have become very skilled at operating the aircraft with many levels of automation engaged. These "Aircraft Managers" are trained to utilize automation to maintain high situational awareness and aircraft control during very challenging flight conditions such a CAT 3 approaches. But most airline training programmes no longer train or test basic flying skills. Like all skills, manual flying and instrument scans will become dull or be lost over a long period of non-use.

Initial and recurrent training events should incorporate periods of reduced automation and hand flying. A study by the Flight Safety Foundation showed that many airline pilots could not accomplish basic flying tasks to Airline Transport Pilot (ATP) practical standards and were unaware that they were not proficient. When pilots were asked before the test to assess their manual flying and instrument skills, every pilot was confident that they were proficient. This over-confidence and continued lack of manual flying currency resulted in all 30 pilots performing well below ATP standards when performing take-off, engine failure on take-off, holding, ILS approach, and go-around maneuvers. Even though the results were concerning, the study also concluded that these skills could be improved through training and regular use.

In January 2013, the FAA issued an unprecedented Safety Alert for Operators (SAFO) encouraging airlines "… to take an integrated approach by incorporating emphasis of manual flight operations into both line operations and training (initial/upgrade and recurrent). Operational policies should be developed or reviewed to ensure there are appropriate opportunities for pilots to exercise manual flying skills, such as in non-RVSM airspace and during low workload conditions. In addition, policies should be developed or reviewed to ensure that pilots understand when to use the automated systems, such as during high workload conditions or airspace procedures that require use of autopilot for precise operations. Augmented crew operations may also limit the ability of some pilots to obtain practice in manual flight operations. Airline operational policies should ensure that all pilots have the appropriate opportunities to exercise the aforementioned knowledge and skills in flight operations."

Increasing the manual flying proficiency of airline pilots and maintaining instrument flying skills will take the cooperation of operators, regulators and pilot associations. Recognizing the loss of basic flying skills as a serious threat to airline safety will lead to improvements. Like other safety threats, the loss of manual flying proficiency and instrument skills can be addressed through training, situational awareness and airline procedures that recognize that the pilots are more than just automation managers. ■

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United ATS plays an integral role in aviation safety by providing highly specific professional trainings that equip aviation industry personnel with new skills either by learning from highly experienced staff in the implementation of a new procedure, or by offering a venue through workshops, seminars, break-out sessions and conferences in which our aviation experts share tips and ideas, and showcase outstanding work. United ATS offers a unique professional training package solutions tailored for the practical needs of stakeholders with a particular emphasis on technical and legal issues to meet ICAO mandatory requirements in ATM, AIM, PANSOPS, ATC, aeronautical survey, eTOD and aerodrome certification.

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Asset Aviation International with its main office in Brisbane Australia, comprises a team of people who shares a common interest in this global, hi-tech and critical industry; we desire to make it better by providing high quality training. Asset Aviation International is an approved regional training partner and authorized training centre with the IATA training and development institute. We provide a range of courses, that give air transport professional, newcomers to aviation and their organizations tools to stay relevant in the industry. We believe in doing the right thing and to us, this means treating you like you belong to our community - we treat you with respect just like a valued member that belongs to any community.

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A Division of the Civil Aviation Authority of Singapore

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SPACE2015

The ICAO/UNOOSA AeroSPACE Symposium
ICAO Headquarters, Montréal, 18–20 March 2015

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Contact: Hannes Pieringer, Sales & Marketing – **Email:** h.pieringer@axis-simulation.com
Tel: +43 5 9889 102 – **Fax:** +43 5 9889 115 – **URL:** www.axis-simulation.com

Axis builds the most advanced full flight simulators on the market today. Their design makes them readily customizable. Their unique monitoring, trend vectoring and control system makes them more efficient and easier to operate day in day out. You can see and feel the difference, whether as operator, instructor or pilot.

CAA INTERNATIONAL (UNITED KINGDOM)

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

CAA International (CAAi), a wholly owned subsidiary of the UK Civil Aviation Authority (UK CAA) and is a leading, globally recognized aviation consultancy and training company. Delivering and promoting best practice in the practical application of aviation regulation, safety oversight, compliance monitoring and education. CAAi is helping to create a flying world fit for the 21st Century. CAAi offers a comprehensive portfolio of public access courses and tailored training programmes, covering all aspects of aviation safety regulation. CAAi's strength lies in its ability to provide training solutions which are quality assured to ISO9001 standards by active regulators as subject matter experts, involved in directly influencing International policy and rulemaking at a strategic level. CAAi training services are based on ICAO standards and recommended practices (as a minimum) and provide the highest levels of practical training that delivers measurable results for individuals and organizations.

ICAO

GLOBAL AVIATION TRAINING

Calendar of TRAINAIR PLUS® Courses and Events 2015*

TRAINING INSTRUCTORS COURSE (TIC)

Date	Location	Host Training Centre/Organisation	Language
10 to 14 January 2015	Tehran, Iran	Civil Aviation Technology College (CATC)	English
17 to 21 January 2015	Tehran, Iran	Civil Aviation Technology College (CATC)	English
19 to 23 January 2015	Banten, Indonesia	Sekolah Tinggi Penerbangan Indonesia Training Center (STPI)	English
1 to 5 March 2015	Abu Dhabi, United Arab Emirates	Gulf Center for Aviation Studies (GCAS)	English
9 - 13 March 2015	Hoofddorp, Netherlands	Joint Aviation Authorities Training Organisation (JAA TO)	English
23 to 27 March 2015	Incheon (Seoul), Republic of Korea	Incheon Airport Aviation Academy (IAAA)	English
6 to 10 April 2015	Rio de Janeiro, Brazil	Agencia Nacional de Aviacao Civil (ANAC)	Spanish
20 to 24 April 2015	Montreal, Canada	ICAO HQ	English
20 to 24 April 2015	Dublin, Ireland	Dublin International Aviation Training Academy (DIATA)	English
4 to 8 May 2015	Mexico City, Mexico	Centro Internacional de Instrucción de Aeropuertos y Servicios Auxiliares Ingeniero Roberto Kobeh González	Spanish
11 to 15 May 2015	Dar Es Salam, Tanzania	Tanzania Civil Aviation Training Centre	English

TRAINING DEVELOPERS COURSE (TDC)

Date	State	Host Training Centre	Language
2 to 13 February 2015	Whiteley, Fareham, United Kingdom	NATS Training and Simulation	English
9 to 20 February 2015	Nairobi, Kenya	East African School for Aviation (EASA)	English
15 to 26 February 2015	Cairo, Egypt	Egyptair Training Center	English
2 to 13 March 2015	Montreal, Canada	ICAO HQ	English
5 to 16 April 2015	Abu Dhabi, United Arab Emirates	Gulf Center for Aviation Studies (GCAS)	English
20 April to 1 May 2015	Dublin, Ireland	Dublin International Aviation Training Academy (DIATA)	English
22 June to 3 July 2015	Incheon, Republic of Korea	Incheon Airport Aviation Academy (IAAA)	English

TRAINING MANAGERS COURSE (TMC)

Date	State	Host Training Centre	Language
2 to 6 February 2015	Hoofddorp, Netherlands	Joint Aviation Authorities Training Organization (JAA TO)	English
4 to 8 May 2015	Montreal, Canada	ICAO HQ	English
18 to 22 May 2015	Dublin, Ireland	Dublin International Aviation Training Academy (DIATA)	English
14 to 18 September 2015	Dar Es Salam, Tanzania	Tanzania Civil Aviation Training Centre (CATC)	English
5 to 9 October 2015	Montreal, Canada	ICAO HQ	English

EVENTS

Date	State	Event	Hosted by
24 to 27 March 2015	Dublin, Ireland	Global Aviation Training & TRAINAIR PLUS Symposium	Dublin International Aviation Training Academy (DIATA)
29 September to 1 October 2015	Trinidad and Tobago	The Regional Aviation Training and TRAINAIR PLUS Symposium	Trinidad and Tobago Civil Aviation Authority (TTCAA)

*The list of scheduled courses is continuously updated.

FOR MORE INFORMATION AND REGISTRATION: **WWW.ICAO.INT/TRAINAIRPLUS**

as of 17 December 2014

ECOLE NATIONALE DE L'AVIATION CIVILE – ENAC (FRANCE)

Live Your Passion and Take Off to Your Future

Contact: Isabelle Rossi, Business Development Manager – **Email:** isabelle.rossi@enac.fr
Tel: 00 33 5 62 17 40 00 – **Fax:** 00 33 5 62 17 40 23 – **URL:** www.enac.fr

ENAC is a unique aviation university in the world that offers a wide range of ab-initio and refresher courses for the executives and main actors of the civil aviation world, for both private and public sectors in all fields of its well-known expertise: ATM, CNS, airports, air transport, AVSEC, human factors and aviation English. ENAC also provides training courses for airline transport pilots and flight instructors. ENAC can set up tailor-made courses to meet specific needs.

INTERNATIONAL SAFETY TRAINING COLLEGE – ISTC (MALTA)

ISTC – The Answer To All Your Aviation & Emergency Response Training Requirements

Contact: Andy Gilravey, Operations Manager – **Email:** andy.gilravey@istcollege.com.mt
Tel: +356 2165 8281 – **Fax:** +356 2165 8283 – **URL:** www.istcentre.com/contact-us

The International Safety Training College has been approved to deliver a variety of accredited training courses including STCW95, OPITO, NEBOSH and JOIFF courses and is the only aviation training center in the world that has been approved by the Libyan Civil Aviation authority to carry out basic aviation rescue & firefighting courses. Our specialized training facilities and its unique location in the Mediterranean, combine to provide the perfect platform for learning and to allow our students and visitors alike, to also explore the multi-cultural diversity of Malta, whilst learning valuable life-saving skills.

MACMILLAN EDUCATION (UNITED KINGDOM)

Your Partner in Education

Contact: Fauzia Eastwood, Marketing Executive (Adult, Professional and Methodology) – **Email:** help@macmillan.com
Tel: +44 207 833 4000 – **URL:** www.macmillanenglish.com/aviationenglish

Macmillan Education is a leading publisher of materials for learning English. In 2008, Macmillan was one of the first publishers to produce materials for pilots and air traffic controllers to achieve and maintain level 4 of the ICAO language requirements. Aviation English and Check Your Aviation English were authored by experts in the field, Henry Emery and Andy Roberts, and are ideal preparation for any aviation English exam.

MAYFLOWER COLLEGE (UNITED KINGDOM)

A leader in Aviation English Training & Testing

Contact: Paul Stevens, Director – **Email:** paul@maycoll.co.uk – **Tel:** +44 1752 673784 – **Fax:** +44 1752 671537 – **URL:** www.aviation-english.com

Located in the historic, seaside city of Plymouth, Mayflower College is a leader in Aviation English "ICAO Level 4" training and testing. It has been providing courses to the aviation community since 1992 and every year welcomes 1000+ learners from 40+ countries. Mayflower College is the developer of the Test of English for Aviation (T.E.A.) and the co-developer of the online training / testing program 'Climb Level 4'. Courses are offered for pilots and controllers, teachers of Aviation English and examiners of Aviation English.

MET OFFICE COLLEGE (UNITED KINGDOM)

World-renowned for excellence in meteorology and climate training, combining scientific excellence with hands-on experience

Contact: Ruth Hammond, Marketing Manager – **Email:** enquiries@metoffice.gov.uk
Tel: +44(0) 1392 885680 – **Fax:** +44(0) 1392 885681 – **URL:** www.metoffice.gov.uk/training

As leaders in aviation meteorology, the Met Office College has developed a wide range of training courses for the aviation community which conforms to the latest world meteorological organization training and education guidelines. We teach international best-practice techniques in meteorological forecasting and observing, including the most recent developments in aeronautical meteorology. As well as courses that enable operational meteorological staff to meet ICAO requirements, we also provide training that can help you better understand and interpret meteorological and climatological information and the potential impact on your business. Whichever type of course you choose, our team of highly skilled staff can deliver it either at a location most convenient to you or at the excellent training facilities within Met Office headquarters.

MLS INTERNATIONAL (UNITED KINGDOM)

The Leading Edge in English for Aviation Training and Assessment

Contact: Mark Henwood – **Email:** mhenwood@mls-college.co.uk
Tel: +44 0 1202 291556 – **URL:** www.mls-college.co.uk

With over 25 years experience in providing English for Aviation training services, both in the UK and overseas to the international aviation community, MLS recognises and understands the complexities faced by organisations and individuals in meeting the revised ICAO language proficiency requirements. Drawing on this extensive expertise, MLS offers language consultancy, a comprehensive range of scheduled and bespoke training programmes and, in the CAAi EALTS, a UK CAA approved and internationally recognised language proficiency assessment.

THALES ATM TRAINING INSTITUTE (FRANCE)

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Contact: Mr. Eric Rodrigues, Head of ILS Department – **Email:** eric.rodrigues@thalesgroup.com
Tel: +33 0 179 61 18 70 – **URL:** www.thalesgroup.com / Customer OnLine (COL) area

Delivering over 4140 Training days for 290 trainees per year, Thales Training Institute offers a top-quality ATC training environment, with a 91% satisfaction rate. Our training portfolio covers all Thales ATM solutions - Automation, Surveillance and Navigation- and is dedicated to your ATC system operators and engineers, maintenance staff, trainers and supervisors. Thanks to our worldwide expertise, you benefit from innovative tools and tailored courses adapted to your operational needs.

THE ICAO TRAINING INSTITUTE – NATIONAL AVIATION UNIVERSITY (UKRAINE)

Training to Face Any Challenge

Contact: Prof. Galyna Suslova, Director – **Email:** eduicao@nau.edu.ua
Tel: +38 044 406 72 19 or +38 044 457 69 12 – **URL:** www.icao.nau.edu.ua

The ICAO Training Institute provides training at four specialized centres – European Sub-Regional Aviation Security and Government Safety Inspectors Training Centres being endorsed by ICAO and national centres certified by the CAA of Ukraine. It is a member of the ECAC Network of Training Organizations. The standardized training packages based on the ICAO methodology have been tailored to meet international and national requirements. We have got the experienced instructors to conduct training in English and Russian. High quality training is the main priority of the ICAO Training Institute.

TURKISH AIRLINES AVIATION ACADEMY (TURKEY)

Fly to Knowledge with Experience

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

For over 25 years, Turkish Airlines Aviation Academy has been servicing many companies throughout Turkey and around the world. The Academy delivers trainings to around 25.000 people annually in two separate buildings, one of which is the new hangar building where the technical training unit is, with 32 classrooms and an auditorium of 120 seats. Turkish Airlines Aviation Academy delivers training services in the following fields: EASA Approved Technical Trainings; Commercial & Ground Handling Trainings (ICAO Approval); Management and Personal Development Trainings; Aviation and General English Trainings; IATA Trainings (ATC & RTC Partner) and Flight Phobia Programme.

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Contact: Anna Cecconello, CEO - **Email:** ac@wan.be
Tel: + 32 71 348180 – **Fax:** + 32 71 348181 **- URL:** www.wan.be

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Email: aviationtraining@cae.com – **Tel:** +1 514 341-2000 – **Fax:** +32 2 722 17 64 – **URL:** www.cae.com

CAE is a global leader in providing comprehensive training solutions based on world-leading simulation technology and integrated training services. The company employs 8,000 people at more than 160 sites and training locations in 35 countries. Our vision is to be our customers' Partner of Choice and we take a long-term approach to customer relationships. We offer our civil aviation customers a complete range of highly innovative product, service and training centre solutions designed to help them meet their needs for safety, efficiency and readiness. CAE has the largest installed base of civil and military flight simulators, supported by a range of after-sales services, and has been serving the needs of its customers for nearly 70 years. We have the broadest training services network in the world and offer civil aviation, military and helicopter training services in 67 locations worldwide and train more than 120,000 civil and military crewmembers annually. In addition, CAE Oxford Aviation Academy offers training for up to 2,000 aspiring pilots across a global network of 9 flight schools.

CQFA CHICOUTIMI COLLEGE (CANADA)

Serving the Industry Since 1968

Contact: Jean LaRoche, Director of R&D, Continuing Education – **Email:** info@cqfa.ca
Tel: +1 514 300-2732 – **URL:** www.cqfa.ca

CQFA began delivering on demand courses in 1968 from its Montreal campus and currently delivers 50 courses: Check pilot (TRE), ground deicing, aviation HR, pilot selection systems, airport management, ICAO 054, jet transition, multi-crew, SMS audit and a unique program of CAA leadership training. CQFA is the world's largest civilian provider of winter aviation survival courses. CQFA's online training program features a comprehensive ramp to ramp operational performances course, international procedures, SMS, high altitude flying, surface contamination, aviation fuel and CFIT. We deliver training worldwide in English and French. Our unique one month homestay international aviation English program also includes time in the simulator.

IATA TRAINING AND DEVELOPMENT INSTITUTE (WORLDWIDE)

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URL: www.iata.org/training-search - **Contacts in your region:**

North & South America	Europe & Africa	Asia Pacific	North Asia
Email: training.mia@iata.org **Tel:** +1.305.779.9860	**Email:** training.gva@iata.org **Tel:** +41.22.770.2820	**Email:** training.sin@iata.org **Tel:** +65.6499.2293	**Email:** training.bjs@iata.org **Tel:** +86.10.8571.9262

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PAN AM INTERNATIONAL FLIGHT ACADEMY (UNITED STATES)

We train airline pilots.

Contact: Gregory Darrow – **Email:** GDarrow@panamacademy.com – **Tel:** +1 303 394 2118 or U.S. 877 394 2118 – **URL:** www.PanAmAcademy.com

Pan Am International Flight Academy is one of the largest and most experienced aviation pilot training organizations and has over 80 full-flight simulators in locations throughout the U.S., Europe, and Asia. We offer a complete menu of training programs for airlines, governments and individuals including Pilot Training, Type Ratings, Recurrent, Flight Attendant, Line Training, ATC, Dispatcher, and Maintenance Training. We own and operate the world's most diverse simulator fleet including the B787, B777, B767, B757, B747-400, B747, B737 All Models, B727, B707, A-300, A-320, A-330, MD-80, MD-11, DC-9, DC-10, EMB-175, EMB-190, CRJ-200, CRJ-700, CRJ-900, SAAB 340, Q-400, DHC-8, and the Cessna Caravan. In the private sector, Pan Am's unequaled ProPilot Training program provides seamless aviation training from zero time to a commercial pilot license—with early introductions into airline procedure and full-motion simulation as part of initial training.

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Contact: Robert Maciorowski, Commercial Training Operations Manager – **Email:** Robert.Maciorowski@pw.utc.com
Tel: +1 860 565 5458 – **URL:** www.pwcustomertraining.com

Pratt & Whitney Customer Training delivers a focused learning experience to students from around the world. Our curriculum blends classroom instruction with computer-based technologies and hands-on engine practice. We support both commercial and military engine maintenance training, engineering and engine performance courses, leadership programs and educational resources. All of our courses emphasize proactive safety, reliability, performance and quality. Self-paced online courses are available to support your training needs.

SPRANZA LLC (UNITED STATES & AFRICA)

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Contact: Francis Spranza, Director – **Email:** spranzallc@gmail.com, director@spranza.com, info@glosatsecurity.com
Tel: +1 772-237-0166, +234 70331 53573 – **URL:** www.spranza.com

Formed in 1981, Spranza LLC provides quality training, document compliance and audit preparation assistance as well as innovative technologies to airports, airlines and civil aviation authorities worldwide. With instructional staff drawn from the fields of military science, civil aviation, psychology, aviation operations, academia and computer science, Spranza in class and distance learning programs and provides basic and advanced instruction in the fields of aviation security, emergency response, safety management and airport operations worldwide. Spranza instructional and consulting services are available both on-site at client locations, as well as on-campus, at a state of the art, accredited academic institution through our partner Mugla Sitki Kocman University, Mugla, Turkey.

The Aviation Training Academy at ATNS

Shaping the minds of tomorrow

Become part of a **leading aviation facility** committed to world-best practices and imparting knowledge and skills that set you apart in the skies. The **ATNS Aviation Training Academy** utilises top quality instructors and state-of-the-art equipment and facilities to give graduates the **advantage** when it comes to aviation.

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The ATA offers more than just training. External clients can take advantage of our expertise through consultation services in:

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- **Defining and developing succession plans**
- **Evaluation of existing corporate programmes**
- **ICAO standards in training**
- **Manpower requirements**
- **Performance management**
- **Recruitment of new personnel**
- **Training needs assessment**

ATNS ATA Training Schedule: December 2014 to May 2015

	Course	Course No.	Duration (weeks)	Start	End	Course leader
ATS Courses						
1	ATSA (Clearance Delivery) Rating	0360115	3	05/01/2015	23/01/2015	GVG
2	ATS Assistant Rating Course (ATSOs)	0530115	2	12/01/2015	23/01/2015	WJ
3	ATS Assistant Rating Course (ATCOs)	0530215	2	12/01/2015	23/01/2015	WJ
4	ATSA (Coordinator) Rating	0350115	4	12/01/2015	06/02/2015	MM
5	Team Resources Management	0280115	1	12/01/2015	16/01/2015	IJ
6	New Aerodrome Rating	-	8	12/01/2015	06/03/2015	BC
7	AT/AIM Core Content	0340115	15*	09/02/2015	22/05/2015	WJ
8	ATSA (Clearance Delivery) Rating	0360215	3	02/03/2015	20/03/2015	WM
9	Advanced Aerodrome Control Course	0370115A	6	02/03/2015	10/04/2015	VS
10	Team Resources Management Course	0280215	1	02/03/2015	06/03/2015	IJ
11	ATSA (Coordinator) Rating Course	0350415	4	02/03/2015	27/03/2015	WS
12	ATSA (Coordinator) Rating Course	0350515	4	02/03/2015	27/03/2015	SM
13	ATSA (Coordinator) Rating Course	0350615	4	02/03/2015	27/03/2015	JG
14	OJTI Course	0230115	1	09/03/2015	13/03/2015	WJ
15	Aerodrome Control Rating Course	0370215	8	11/05/2015	10/07/2015	PJ
16	Advanced Aerodrome Control Course	0370215A	6	13/07/2015	21/08/2015	PJ
Engineering courses (ATNS)						
1	AIS/AFTN Systems concepts	E-0130115	2	09/02/15	20/02/15	-
2	Data communications	E-0160115	2	16/02/15	27/02/15	-
3	OTN: Bora 600 – Equipment	E-0420115	2	30/03/15	10/04/15	-
Engineering courses (International)						
1	VHF Park Air 1500 TX /2100 RX – Equipment	E-0140115	4	16/03/15	10/04/15	-
2	Advanced Networking	E-0180115	2	30/03/15	10/04/15	-

* Extended due to Public Holidays

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- Security
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www.iata.org/training-subjects
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