

ICAO JOURNAL

NEWS AND DEVELOPMENTS FROM THE INTERNATIONAL CIVIL AVIATION ORGANIZATION - VOL.69 - NO.2



GLOBAL FLIGHT TRACKING

ICAO Council States agree to new framework encouraging airlines to review and implement near-term solutions while performance-based global Standard is considered

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PREVIEW: ICAO SYMPOSIUM ON INNOVATION IN AVIATION SECURITY
FIRST-EVER ICAO COUNCIL RETREAT DELIVERS CONCRETE RESULTS
ICAO ASBUs AND THE IATA OPS CONFERENCE | CABIN CREW TRAINING
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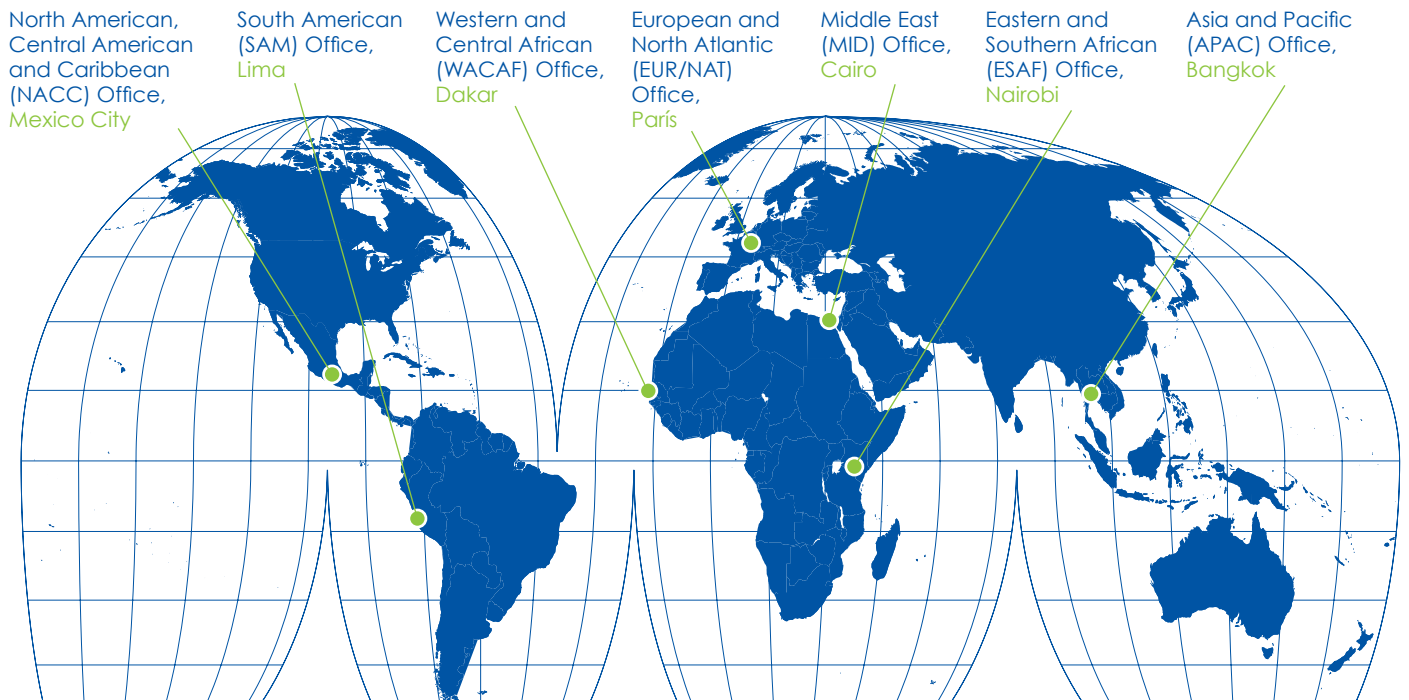
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ICAO's Global Presence





Olumuyiwa Benard Aliu

AN UNPRECEDENTED RESPONSE TO AN UNPRECEDENTED EVENT

✈ When Air France Flight 447 was regrettably lost in the summer of 2009, its circumstances were considered almost too rare to happen again. And yet some five years and 150 million flights later, aviation found itself faced with a similar occurrence.

Few industry communities would have responded as ours did to such a rare and unpredictable incident, but for anyone familiar with our sector it is perhaps not so surprising given that we take the loss of every single life and every single aircraft as seriously as we do.

This is precisely why, on a worldwide basis, roughly 100,000 daily commercial airline flights are able to operate with the remarkable and reliable levels of safety and efficiency that air transport so dependably provides. In 2013 for instance, the global air transport network managed over 32 million airline flights which carried 3 billion passengers to every corner of the world. In the course of these many flight operations there were fewer fatalities than were experienced in the single tragedy which has been Malaysia Airlines Flight MH370.

Our international aviation community may admit to a certain level of pride when our yearly monitoring and analysis activities determine these types of results, but we also clearly recognize that accident and fatality statistics, no matter how promising, are of no comfort whatsoever to the families of Flight MH370's passengers and crew in the aftermath of its disappearance.

This was the context in which ICAO decided to bring States and industry together on a somewhat extraordinary basis to agree that global airline flight tracking was needed. And as you will read in the article appearing on page five of this issue, Members of ICAO's 36-State Governing Council, as well as those States who have nominated experts to the ICAO Air Navigation Commission, did agree on establishing this capability on a phased basis.

The disappearance of Flight MH370 has been a challenge for global aviation, to be sure, but it has also taught us some important lessons.

This approach was also fully supported by the aviation industry stakeholders who were present with us in May, notably the International Air Transport Association (IATA); the Civil Air Navigation Services Organization (CANSO); Airports Council International (ACI); the International Federation of Air Line Pilots' Associations (IFALPA); the International Federation of Air Traffic Controllers' Associations (IFATCA); the International Federation of Airline Dispatchers' Associations (IFALDA); and all of the major airframe manufacturers.

Aviation's long-term goal is to resolve consensus-determined, performance-based criteria for global airline flight tracking which States, and the full community of aviation industry groups, will ultimately agree through ICAO. A full ICAO Standard, legally established via amendments to the civil aviation regulations of our 191 sovereign Member States, will best ensure adoption of flight tracking provisions by all airline operators globally.

ICAO will therefore continue to provide the necessary leadership to ensure all issues are considered expeditiously to enable a performance-based Standard, but in the near-term we will also support industry initiatives to advance this objective, notably the industry-led IATA Task Force which has already begun during the near-term phase to establish implementation plans for applicable solutions later this year.

A capability to globally track airline flights will not replace our sector's separate cooperative efforts which are more directly focused on preventing future accidents or incidents. It will, however, permit us to locate aircraft much more accurately in emergency or other circumstances, as well as to facilitate Search and Rescue (SAR) operations which may be required when emergencies do arise. Therefore, as ICAO considers the requirements for global flight tracking, we will also be looking closely at the most effective means of sharing tracking data with search and rescue and accident investigation authorities.

The disappearance of Flight MH370 has been a challenge for global aviation, to be sure, but it has also taught us some important lessons. On the one hand we have discovered that, despite the complexity and diversity of our global community, international aviation can respond with speed and unity when confronted by an urgent need.

In the weeks and months of subsequent SAR operations, which still continue, we have also seen a tremendous level of generosity and good will extended to Malaysia by both neighbouring and distant States, mainly with respect to offers of resources, equipment and expertise. Cooperation of this magnitude should never be underappreciated and it has been very heartening to see our Member States come together in this manner. We have also learned, however, that the level of international coordination on SAR activities shows definite room for improvement and ICAO will respond accordingly in the months ahead.

Lastly we are reminded that, no matter how hard we work or what level of success we achieve on our safety and air navigation challenges, we can never be complacent where the lives of our passengers and flight crews are concerned.

ICAO and aviation stakeholders the world over will continue to hope that the wreckage of Flight 370 will eventually be located, and that we will one day be able to determine with a better degree of certainty the cause or causes of its loss. Only in this manner will we be able to help bring closure to the victims' families.

As we do, we must also recall that cooperation and consensus will remain our greatest assets in everything we seek to achieve in global air transport.

Olumuyiwa Benard Aliu
ICAO Council President

STATES AND INDUSTRY AGREE TO DEVELOP GLOBAL AIRLINE TRACKING CAPABILITY

✈ At a Special Meeting on Global Flight Tracking of Aircraft, in May of this year, ICAO forged consensus among its Member States and the international air transport industry sector on the near-term priority to track airline flights, no matter their global location or destination. The meeting also established a framework for future medium- and long-term tracking efforts.

The Special Meeting was attended by more than 200 aviation industry stakeholders, including representatives from ICAO Member States in Africa, Asia, Europe, the Middle East, North America, Oceania, and South America, regulators, aircraft manufacturers, air traffic controller groups, pilot groups, the International Telecommunications Union, and other international organizations.

"We take the loss of every single aircraft and every single life seriously. Malaysia Airlines Flight MH370 has been an unprecedented event for aviation and we have responded here in a similarly unprecedented manner," commented ICAO Council President Dr. Olumuyiwa Benard Aliu. "While our flight safety work logically focuses the majority of our energy and resources on accident prevention, everyone in our sector also deeply sympathizes with the families of this lost aircraft's passengers and crew."

"Ultimately, in order to assure that every aircraft will be tracked, we need standards that will be converted to regulations," said Aliu.

Under an ICAO framework, the International Air Transport Association (IATA) is coordinating an Aircraft Tracking Task Force (ATTF) to help address the near-term needs for flight tracking. The Task Force is expected to summarize its findings by this fall. In parallel with the ATTF, ICAO will begin developing a flight tracking concept of operations covering how the new tracking data gets shared, with whom, and under what circumstances. ICAO will also begin considering performance-based international standards, on a priority basis, to ensure broader adoption of airline flight tracking throughout the aviation system.

TRACKING TASK FORCE

The 20-member Aircraft Tracking Task Force, which was scheduled to begin meeting in June, is comprised of experts from ICAO, airlines, aircraft manufacturers, flight safety organizations, air navigation service providers, pilots, air traffic management, and flight tracking equipment and service providers.

The ATTF is examining available options for tracking commercial airplanes, considering implementation, investment, time, complexity, and cost-efficiency to achieve the desired coverage. In particular, the Task Force will assess the responses to an ICAO vendor survey and examine existing capabilities to determine potential solutions.

The Task Force will develop recommended options based on performance requirements to implement global airplane tracking.



CONCLUSIONS AND RECOMMENDATIONS SPECIAL MEETING ON GLOBAL FLIGHT TRACKING MONTRÉAL, 12-13 MAY 2014

The Special Meeting on Global Flight Tracking of Aircraft issued these conclusions and recommendations for near-term, medium-term, and long-term tracking of airline flights:

NEAR-

- Global tracking of airline flights will be pursued as a matter of priority to provide early notice of and response to abnormal flight behaviour;
- A DRAFT concept of operations on flight tracking will be developed that includes a clear definition of the objectives of flight tracking that ensures that information is provided in a timely fashion to the right people to support search and rescue, recovery and accident investigation activities, as well as the roles and responsibilities of all stakeholders;
- Under the ICAO framework, the contribution by the industry through an Aircraft Tracking Task Force (ATTF) will help address the near-term needs for flight tracking;
- ICAO will consider establishing a short-term joint ICAO/IATA advisory group to support the global tracking initiative;
- Airlines will be encouraged to use existing equipment and procedures to the extent possible to support flight tracking pending the outcome of the AATF;
- In partnership with the Task Force, ICAO will develop guidance material, based on available flight tracking best practices;
- A final high-level concept of operations should be delivered to the ICAO High Level Safety Conference (HLSC 2015), February, Montréal;
- ICAO should increase its resources allocated to search and rescue in order to improve the effectiveness across national and regional boundaries;
- ICAO should, in collaboration with a pool of search and rescue experts, identify and address operational search and rescue challenges with implementation of existing Annex 12 provisions, and provide assistance to States, including aiding in the setting of priorities for the mid- and long-term;
- ICAO should facilitate the sharing of experience and lessons learned from States that were recently involved in accidents where flight tracking could have facilitated search and rescue efforts to all other States;
- ICAO should strongly encourage States to regularly run practice exercises involving airline operation centres, air navigation service providers (ANSPs) and rescue coordination centres (RCCs) to test and verify their ability to respond and coordinate together in an integrated manner to abnormal flight behaviour scenarios;

MID-TERM

- ICAO performance-based provisions should be developed, using a multidisciplinary approach, on flight tracking to support the location of an accident site in a timely manner for the purpose of search and rescue and accident investigation;
- ICAO performance-based provisions addressing flight tracking requirements should be sufficiently flexible to accommodate regional needs and be commensurate to operational situations;
- ICAO should encourage States and the International Telecommunication Union (ITU) to take action, at the earliest opportunity, to provide the necessary spectrum allocations as emerging aviation needs are identified. This includes spectrum for satellite and radio services used for safety of life aviation services. ICAO encourages ITU to place this on the Agenda for the upcoming ITU World Radiocommunication Conference 2015 (WRC);
- COSPAS-SARSAT should be invited to continue to investigate, within its own programme and in partnership with the industry, the means of improving the reliability and utility of emergency locator transmitters (ELTs), particularly in the context of flight tracking during a distress event; and

LONG-TERM

- ICAO should work in coordination with ITU to develop aviation requirements for network communications associated with remote storage of flight information.

Target levels of performance would serve as a basis for global guidelines. These target levels of performance should be established without reference to any specific technical solution. This, in turn, will allow airlines the flexibility to determine their means of compliance based upon their own operational scenarios and what would be the most cost-effective solutions to meet the target levels of performance. A prescriptive approach to any future Standards may hamper the innovative use of new technologies in the future. Therefore, a performance-based approach which addresses elements such as, but not limited to, tracking parameters, reliability, accuracy, global coverage and target levels of performance could be established and serve as the basis for international Standards.

Nancy Graham, Director of ICAO's Air Navigation Bureau, told a news conference that the bulk of the global air fleet has the tracking capabilities but that changes in hardware, software, and procedures must be made. "It's not terribly expensive – and it's not terribly difficult."

"Not all aircraft are created equal or have the same equipment," added Kevin Hiatt, IATA Senior VP Safety and Flight Operations. "What the task force will do is take a look at the equipment, take a look at the types of aircraft that are out there."

Ahead of the Special Meeting, ICAO asked industry groups for a list of technologies that might be useful to the airline sector. "The responses received showed that there are existing commercial off-the-shelf solutions providing global coverage. Graham predicted, "By September, we'll have recommendations of a few technologies that are suitable for global tracking. And those will be put in place beginning probably later this year."

Under an ICAO framework, the International Air Transport Association (IATA) is coordinating an Aircraft Tracking Task Force (ATTF) to help address the near-term needs for flight tracking.



"The industry is absolutely in solidarity on the initiative," Graham stated. She emphasized the Special Meeting was called on "very short notice" and that reaching unanimity among countries at the helm of ICAO typically takes substantially longer. It is also anticipated that the criteria will require some vetting by regulatory authorities. ICAO involvement in this process will provide a necessary conduit between the industry-led initiative and States. The outcome would lead to guidance material on global flight tracking to be used by all stakeholders.

SEARCH AND RESCUE DRILLS

The Special Meeting also recognized the challenges faced by States when coordinating their search and rescue (SAR) efforts across national and regional areas of responsibility, stressing the usefulness of regularly run practice exercises to identify procedural or operational gaps. "We're going to be encouraging a series of drills or scenarios all over the world that will enable what is really an extraordinarily rare event to be drilled," said Graham.

Among the conclusions of the Special Meeting were that "ICAO should increase its resources allocated to search and rescue in order to improve the effectiveness across national and regional boundaries; ICAO should, in collaboration with a pool of search and rescue experts, identify and address operational search and rescue challenges with implementation of existing Annex 12 [Search and Rescue] provisions, and provide assistance to States, including aiding in the setting of priorities for the mid- and long-term; ICAO should facilitate the sharing of experience and lessons learned from States that were recently involved in accidents where flight tracking could have facilitated search and rescue efforts to all other States."

The strong levels of international cooperation and resource sharing on the MH370 SAR efforts demonstrated to date were also recognized. "Cooperation is the key to everything we achieve in global air transport," Aliu noted. "This has been true since the first States came together and signed the Convention on International Civil Aviation seven decades ago in 1944, and it will remain true as we begin to address the doubling of traffic volumes projected for 2030." ■



COMMUNICATION WITH AND ASSISTANCE TO STATES: ENSURING NO COUNTRY IS LEFT BEHIND

✈️ Aimed at determining how ICAO can better communicate with and assist its Member States, the first-ever ICAO Council Retreat was convened by Council President Olumuyiwa Benard Aliu this past June, in the historic setting of Montebello, Canada. President Aliu and ICAO Secretary General Raymond Benjamin were joined at the unique two-day event by some 70 participants, including ICAO Council and Resident Representatives, industry leaders, and ICAO HQ and Regional Directors.

The high-level Retreat participants resolved a number of key recommendations which will now be reviewed by Council in its Fall 2014 Session, inclusive of timeline and reporting aspects to ensure accountability. Additionally, the Retreat discussions have also served as the impetus for a new advocacy campaign which will be developed to raise awareness and help ensure there is “No Country Left Behind” where the ability to effectively implement ICAO Standards and Recommended Practices is concerned.



Six Members of the ICAO Council generously participated in the planning and organizing of the Retreat, helping to make it a great success for all concerned. From left to right the full Retreat Planning Team were: Mark Allen, Canadian Representative to the Council and Chairman of the Council Retreat Planning Team; Aysha Alhameli, Council Representative for the UAE; Tao Ma, Council Representative for China; Kerryn Macaulay, Council Representative for Australia; Maria Helena Faleiro de Almeida, Council Representative for Portugal; Moumouni Dieguimde, Council Representative for Burkina Faso; and Javier Garcia Soruco, Council Representative for Bolivia.

The inaugural ICAO Council Retreat took place from 12-14 June 2014, just outside of ICAO's host city of Montréal, Canada. It provided the President of the ICAO Council, Dr. Olumuyiwa Benard Aliu, ICAO Secretary General Raymond Benjamin, Council Members and Representatives to ICAO, ICAO Bureau and Regional Directors, as well as key industry stakeholders, with a unique occasion for reflection and the opportunity to apply their collective knowledge and experience in order to chart a course for more effective engagement by ICAO with its Member States.

The Retreat activities centered upon assessing the effectiveness of ICAO with respect to its assistance and communication with Member States. Participants were divided into teams determined on the basis of geographic and expertise diversities and engaged in lively, guided discussions while collaborating to resolve priority areas for improvement while aiding ICAO in meeting or exceeding its 2014-2016 strategic objectives.

Kenneth Quinn, of Pillsbury Winthrop Shaw Pittman LLP, facilitated the retreat and engaged the group through provocative guidance and challenges. Quinn's extensive background as an aviation lawyer and his participation in many ICAO forums and events over the years (most recently as Vice-Chair of the Safety Information Protection Task Force) proved invaluable to the meeting, as was the assistance of his colleague Ashleigh Tomlinson of Rohmer & Fenn, Barristers & Solicitors.

SETTING THE STAGE

Prior to gathering for the event, Retreat participants and ICAO's worldwide staff base were asked to complete a comprehensive survey. 341 responses were submitted and analyzed and the results were later used to inform the questions for consideration during the Retreat breakout sessions, in line with the themes of assistance and communication with States.

The survey results showed that ICAO's vision and mission are sufficiently clear and understood, that staff and leadership are very committed to the Organization and its work, and that ICAO's safety and security audit programmes are well-coordinated with industry and State Civil Aviation Authorities.

The survey results also raised a number of areas for improvement, noting that the Secretariat and the Council should still explore ways of working better together, that ICAO's consensus and governance processes could be better streamlined, and the quantity and quality of ICAO State Letter responses was less than optimal. It was also indicated that the right information is not always getting to the right people at the right time, and that ICAO should take better advantage of available technologies and social media to communicate with the States and stakeholders that comprise the global civil aviation community.

It was also noted in the responses that ICAO does not have adequate funding to provide direct assistance to States, and that the Organization's ability to monitor and measure the effectiveness of its technical and assistance programmes could be improved.

Survey respondents were also overwhelmingly clear that ICAO can and should be doing much more to help States with higher accident rates or elevated security threats, and stressed that developed countries could be doing more to help elevate developing States to meet global norms.

Other respondent feedback expressed that Council consider the issue of diminishing resources and suggested that more funding should be solicited and resources should be focused on SARP implementation, recruitment, technological improvements and professional development. Survey results further suggested that there should be better coordination of assistance programmes between States and Regional Offices.

DYNAMIC ENGAGEMENT: ASSISTANCE TO STATES

Where the topic of assistance to States was concerned, retreat participants were asked to identify means to encourage States to actively participate and contribute to monitoring and reporting to help inform and improve performance. They reviewed how coordination with other stakeholders could be enhanced, and how far ICAO should go in its collaboration and partnership with regional bodies and industry while taking into account the full range of survey results.



ICAO Council President Olumuyiwa Benard Aliu consults with one of the break-out teams during the Retreat discussion on ICAO's assistance activities on behalf of its Member States.

PRIORITIES DETERMINED ON ASSISTANCE TO MEMBER STATES

- Re-examine and streamline monitoring and reporting requirements and process for assistance activities, in order to identify realistic needs.
- Make use of dedicated webpage (building on existing ICAO SCAN programme approach) for States seeking cooperation and assistance from ICAO.
- Coordinate with States, regions and industry to identify needs and priorities for regional assistance.
- Coordinate to help focus bilateral and multilateral programmes. Raise the issue at the highest political level and approach international financial institutions and multilateral development bodies.
- Provide training to Civil Aviation Authority Directors General (DGs), particularly incumbent DGs (many expected by November 2014). Ensure they understand their responsibilities and how to engage with ICAO.
- Reward good performance, encourage healthy competition and establish clear procedures to engage with States that are not performing well or responding to State Letters.
- Optimize the use of resources (financial, human, and technological) and analyze and improve the allocation of resources between HQ and ROs.
- Address transformational initiatives with the objective of total State autonomy. Consider implementation of "No Country Left Behind" model and an associated awareness campaign.

Also under discussion was how to increase and measure the effectiveness of ICAO's technical cooperation and assistance programmes and what more the Organization could be doing to help States meet their international aviation obligations. It was debated whether ICAO should focus its activities more substantially on States with higher accident rates or security threats and what it could do to encourage developed countries to provide greater assistance to developing countries.

Another important area of discussion focused around how ICAO could employ its Regional Offices more effectively and encourage States to pool resources to provide improved safety and security oversight. Throughout all of these topic discussions the issue of funding coordination and the provision of sufficient resources to more needful States remained an important consideration. Sidebar (*below, left*) indicates the prioritized results of the discussions and the recommendations which will now be progressed through the Council's upcoming Fall Session.

REACHING THE RIGHT STATE OFFICIALS AT THE RIGHT TIME AND WITH THE RIGHT MESSAGE

The Retreat's communication-related discussions served to identify current challenges and gaps and to propose practical, cost-effective or cost-neutral means of addressing them.

Participants looked at what ICAO could be doing to increase the response rate to its State letters, whether informal communication channels such as the ICAO website and social media platforms could be used to better result, and at how the Organization could ensure that the right information is reaching appropriate officials in a timely manner.

Further discussions focused around how regional bodies and industry could assist ICAO's efforts in this area, and how communications activities could be more effectively linked with efforts directly relating to increased State implementation of ICAO SARPs.

Recommendations for improving communication with States and addressing the identified gaps included encouraging ICAO's HQ and Regional Offices to collaborate more on major decisions and the development of important documents, establishing State Focal Points for State Letter reception and dissemination and managing that network diligently, and by ICAO providing more transparency with respect to which States are being negligent in replying to State Letters in a timely manner.

Additional recommendations in the communications domain included more strategic engagement with Directors-General of States with significant safety or security concerns, encouraging Council and State Representatives to ICAO to act as active ambassadors for ICAO with their local stakeholders, joining hands with industry stakeholders like IATA and ACI in partner communications, and streamlining the number of channels through which ICAO communicates.



Assembled participants from the 2014 ICAO Council Retreat. The two-day off-site meeting sought to determine practical means to refine ICAO's effectiveness with respect to its assistance and communication activities with Member States.

A potential Assembly Resolution was also discussed that would call for complete and timely responses to State Letters and monitor and report on overall performance from one Assembly to the next.

With respect to regional engagement, participants noted the need to ensure elements of a shared vision, shared priorities and shared targets between Civil Aviation Commissions (CACs) and ICAO. This point was also stressed in several video inputs submitted by the CACs for participant review in advance of the Retreat. It was also identified that ICAO would need to do a better job of communicating the overall SARPs development plan to States well ahead of the State Letter process, so that State officials could be better prepared for any required implementation measures.

In a general sense, the need for increased outreach and contact between ICAO Regional Offices and State DGCA's was recognized, and particularly with newly-appointed Directors General of Civil Aviation. In addition, it was supported that resources should be allocated to ICAO's Regional Offices that better reflect and address the Offices' significant role in the generation of political will, SARP's implementation, and capacity building.

SUMMARIZED CONCLUSIONS

The prioritized Retreat points relating to assistance and communication were identified as:

- Assistance to developing countries.
- Communication shortcomings between ICAO and States.
- More effective use of ICAO Regional Offices.
- Improved training offerings and support.
- Greater resource allocation focused on assistance and communications priorities.

The challenges of targeting assistance to developing countries was suggested to be addressed by ICAO playing

a more active coordination role between States while seeking to generate political will to pool resources, participate in regional efforts, earmark voluntary funds, and build capacity. A "No country left behind" model was strongly supported and an awareness campaign will be developed in support of its aims.

Improved communications strategies and better use of informal communication methods were highlighted to help ICAO more effectively convey information. Establishing State focal points, along with project teams, was further recommended. It was agreed that to simplify the State Letter process and leverage technological advances to increase the visibility of ICAO to States, industry, and the general public would be useful aims in this regard. The more frequent use of side-meetings and informal communications was also encouraged.

The role of the Regional Offices and empowerment of Regional Directors to communicate frequently with States in the region was noted as an important priority, mainly so that the Regional Offices could more meaningfully assume their roles as a subsidiary of ICAO and better promote participation in regional efforts such as Regional Safety Oversight Organizations (RSOOs) and ICAO Regional Aviation Safety Groups (RASGs).

ICAO was also strongly urged to provide or support efforts to make aviation training available on a more frequent and accessible basis and to optimize resources, such as websites and social media platforms, to increase visibility. States would also be encouraged to maintain sufficient human resources and coordinate resources within regions.

All in all the Retreat was considered a resounding success by all in attendance, and further thought will be given over time to establishing similar events on an annual or triennial basis. ■



ICAO INPUTS FIGURE PROMINENTLY AT 2014 IATA OPS CONFERENCE

✈ Addressing the theme of “Today’s issues, tomorrow’s challenges,” the International Air Transport Association (IATA) assembled representatives from airlines, regulators, air traffic providers, and other aviation industry stakeholders for its annual Operations Conference, held this year in early April in Kuala Lumpur, Malaysia.

For ICAO, the event represented a key opportunity for government/industry exchanges of views and to update the operator community on ICAO’s guidance and planning priorities. The more than 250 participants in attendance covered a variety of high-priority operations, infrastructure, and safety issues against the backdrop of the MH370 disappearance – which had occurred three weeks earlier.

The ‘Ops Conference,’ as it is referred to by IATA, is the airline trade association’s primary annual event to interact with its 240 member airlines, regulatory agencies from around the globe, and others in the aviation industry on all issues related to safety, operations, and infrastructure.

For ICAO, the event represents another forum to foster synergies between the two organizations. “The Ops Conference is an ideal opportunity to get the right people in the right room to talk about the issues,” said Nancy Graham, ICAO Air Navigation Bureau Director, who served on three panels at the event. “From the operational standpoint, the leaders in attendance make many of the decisions or influence



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decisions. This type of collaboration between IATA representing the airlines and ICAO as an intergovernmental representative of the States' interest is the type of joint government-industry symbiosis that needs to occur to improve safety."

This year's IATA plenary sessions focused on emerging operational risks, global infrastructure, regional infrastructure, regulatory environments, runway safety, improved fuel efficiency, and paperless operations in maintenance and aircraft transfers.

Prior to the conference, IATA held workshops on safety management systems, ground operations, and evidence-based training.

IATA Director General and CEO Tony Tyler, in opening the conference, said, "I don't think that I could start my remarks to a gathering of the industry's top leaders of operations in any other way than by acknowledging the human tragedy of MH370 ... There is no escaping the reality of what has happened... The best way for all of us involved in aviation to honor the memory of those on board is to learn from what happened to improve safety in the future."¹

Tyler also announced that IATA would create a special task force with ICAO participation to look at all the options available for tracking commercial aircraft and make recommendations. ICAO convened a "Special Meeting on Global Flight Tracking of Aircraft" in Montréal in May. Concurrently, IATA held the first meeting of the Aircraft Tracking Task Force (ATTF) with ICAO participation to help address the near-term needs for flight tracking. A report on the tracking meeting starts on page 5 of this issue of *ICAO Journal*.

SAFETY AND NAVIGATION COLLABORATION

In the opening plenary session on "Issues Today and Challenges Tomorrow," Graham outlined the objectives and priorities of ICAO's Global Aviation Safety Plan (GASP) and the Global Air Navigation Plan (GANP). One key priority is addressing Loss of Control In-flight (LOC-I): "Accident rates are declining and fatalities are decreasing, but fatalities related to LOC-I are increasing. LOC-I accidents have accounted for one-third of all fatalities in scheduled commercial operations over the last 10 years, more than any other category of accident," Graham noted. The continuing issue led to ICAO holding a Loss of Control In-Flight Symposium in May (a report on the Symposium will be in the next issue of *ICAO Journal*).

Graham said the infrastructure emphasis is shifting from State-based to regional traffic flow planning, coordinated through collaborations such as the Planning and Implementation Regional Groups (PIRGs).

The ICAO ANB leader challenged the industry to identify the top 15 air traffic 'flows' around the world as part of the effort to

streamline the air traffic system. A 'flow' represents the number of aircraft that arrive and depart at an airport over a defined period of time. Airspace planners can then schedule traffic in and out of the airport in a more efficient manner to get the maximum benefit for the available airspace, including convenient flight times for passengers, flight path fuel efficiencies for aircraft, and ground handling effectiveness for the airport. IATA officials indicated they are already working on the top 15 and expect to make it available later this year.

“Collaboration between the airports, the airlines, the air navigation service providers, and governments will be the key to the success of all of this”

– Kevin Hiatt, IATA Senior Vice President for Safety and Flight Operations

The traffic flows relate directly to ICAO's Aviation System Block Upgrades (ASBUs), which affect both airplane equipment and air navigation services infrastructure. "An airline's interest is getting from A to B with a preferred trajectory – a preferred route and preferred altitude," explained Mitch Fox, ANB Chief of the Flight Operations Section. "However, if States don't harmonize along the routes with major traffic flows, you might improve air navigation across one State where they've implemented voluntary ASBU upgrades, but if the next State on the route does not have the same improvements it becomes a choke point in terms of capacity. Airlines have to fly the least common denominator in terms of separation, and there's a domino effect back to the point of departure and to the arrival point. It limits the airline's ability to make the most efficient trip or the best use of investment in equipment."

Putting forth the challenge to the airlines to identify major traffic flows provides the impetus and motivation for States to invest in the infrastructure to make the maximum use out of the airspace and for the airlines to invest so that they can utilize the new upgrades along a given traffic flow. "ICAO can influence the infrastructure, IATA can

¹Remarks of Tony Tyler at the IATA OPS Conference, Kuala Lumpur, April 1, 2014. <http://www.iata.org/pressroom/speeches/Pages/2014-04-01-01.aspx>.

influence the airlines, and we can do this together to the benefit of the whole aviation community," Graham said.

She added, "It's in everyone's interest to work together to address this issue." If the airlines, through IATA, collectively identify their most traveled routes, ICAO can approach the States about upgrading their infrastructure to serve the needs of international air navigation.

The potential for flying a high-capacity aircraft such as an A380 along a preferred flight route and altitude could represent huge savings in fuel and other costs for an operator.

Civil Air Navigation Services Organization Director General Jeff Poole cited examples of the work CANSO is doing to implement ICAO's ASBUs, Performance-Based Navigation (PBN), and ADS-B. He said that collaboration is now "in the DNA of the ATM industry" with all elements of the aviation value chain collaborating to improve air traffic management system performance by sharing data and information to improve communication among all stakeholders on the ground for coordinated actions.

Kevin Hiatt, IATA Senior Vice President for Safety and Flight Operations, said there were discussions at the IATA Ops Conference about helping States become better informed about

the ICAO Aviation System Block Upgrades (ASBUs) and how to use them. "Collaboration between the airports, the airlines, the air navigation service providers, and governments will be the key to the success of all of this."

Graham was also a panelist for two other sessions, one on the Regulatory Environment and the other addressing Global Infrastructure Issues – Regional Implementation. "We need to have the regulatory controls and safeguards in place so the system evolves safely and reliably," Graham said. "And States need the political will; we've got to make sure that there is a commitment to making the air traffic infrastructure effective through harmonization. We need to promote mutual recognition and reduce unnecessary or duplicative efforts."

"Regulation is one of the approaches we can use to mitigate safety risks. Regulations are certainly not the only answer but it's something we've got to do."

Graham added, "One thing we've learned in standards-making is that if you don't take a collaborative approach with the industry, sometimes what you think would work may not work. So you don't create regulations in the blind, not knowing whether or not it would be an effective risk mitigator or whether it even makes sense. It's better to involve the stakeholders from the very beginning, and this conference is one way in which we can do that." ■



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RAISING THE BAR ON CABIN CREW TRAINING

✈ Cabin crew have essential roles in managing safety onboard aircraft. ICAO has taken a lead role in focusing greater attention on cabin safety initiatives by publishing the *Cabin Crew Safety Training Manual (Doc 10002)*, first edition, in May 2014. Doc 10002 provides guidance on the content of approved cabin crew training programmes, as required by Standards and Recommended Practices (SARPs) found in Annex 6 *Operation of Aircraft, Part I: International Commercial Air Transport – Aeroplanes*. The new document replaces the *Cabin Attendants' Safety Training Manual (Doc 7192 Part E-1)*, which dates to 1996.

The new 200-page manual includes an expanded chapter on security, handling of dangerous goods, added sections on safety management systems (SMS) and fatigue management, and much more.

Martin Maurino, Safety, Efficiency and Operations Officer, Flight Operations Section, ICAO, addresses some of the highlights of the new manual and how it was developed over the past two years.

BRINGING THE EXPERTS TOGETHER

In order to develop the best possible guidance, reflecting existing regulatory requirements and international best practices, ICAO established a joint Industry-Regulatory group, the ICAO Cabin Safety Group (ICSG). The ICSG is comprised of experts from civil aviation authorities, airlines of varying sizes and types, aircraft manufacturers, and international organizations. The ICSG provided different perspectives on how training programmes are developed, implemented, approved, and overseen. This enabled ICAO to develop guidance that would be suitable for different types of operations, from regional single cabin crew operators who conduct training on board actual aircraft to legacy carriers which operate large aircraft internationally with multiple crew members and with access to state-of-the-art training facilities.

A SHIFT TOWARD COMPETENCY-BASED TRAINING

Through a process of consensus within the ICSG, ICAO produced a competency-based cabin crew training framework. The concept of competency-based training for pilots was introduced some time ago, but this is the first time ICAO adapted the approach for cabin crew. Mirroring the framework for the Multi-crew Pilot Licence (MPL), Doc 10002 outlines an international baseline of all the competencies that are necessary for cabin crew members to perform their duties and responsibilities in normal, abnormal, and emergency situations.

In addition to the competencies, the manual presents the recommended performance standards, knowledge, and skills that cabin crew trainees should obtain through competency-based training. Guidance is also presented on recommended hands-on and simulated exercises that trainees should undertake prior to being assigned as operating cabin crew members on commercial passenger flights.

FILLING IN THE GAPS

During the development process for the manual, ICAO was approached by States and Industry, requesting guidance on issues which are not addressed in existing ICAO documents. ICAO decided to include these issues in Doc 10002 and develop supplemental material to assist States and Industry in tackling them.

Additional new guidance includes:

- Recommended qualifications and competencies for cabin crew instructors, examiners, and training programme developers;
- Guidance on the approval of cabin crew training facilities and representative cabin training devices (e.g. emergency exit trainers);
- Content for safety management systems (SMS), aimed specifically at cabin crew member duties and responsibilities; and
- Recommended content for in-charge cabin crew member training.

HOW THE COMPETENCY-BASED CABIN CREW TRAINING GUIDANCE IS PRESENTED

- *Specific competencies*, including for the in-charge cabin crew member
- *Reference material* needed during training, e.g., the Operations Manual
- *Guidance on conditions for conducting training*, such as classroom, CBT, hands-on exercises, etc.
- *Examples of performance standards* – how to address competencies in training
- *Recommended knowledge*, specific to each competency
- *Skills to support competencies*

MANAGEMENT ASPECTS OF THE TRAINING PROGRAMME

As part of the manual, ICAO developed guidance on several key aspects related to the management of a cabin safety training programme. Cabin crew training managers, training programme developers, instructors and examiners are integral to successful training programmes and the development of competent cabin crew members. Therefore, operators should establish qualifications for these aviation professionals. In some cases, they may need to be in accordance with national regulations. In order to assist States and operators, recommended qualifications and responsibilities are outlined in Doc 10002 for the cabin crew safety training manager. Since competency-based training requires a shift in the way training is delivered and performance is assessed, instructor and examiner qualifications and competencies are also presented.

The competencies for cabin crew instructors to focus on include:

- Managing the safety of the training environment
- Preparing the training environment
- Managing and supporting the trainee
- Conducting training
- Performing trainee assessment
- Performing course evaluations
- Continuously improving instructor performance

Competencies for cabin crew examiners focus on assessing trainees appropriately, objectively, and correctly. Additional guidance is also included for competencies specific to training programme developers, who must possess the ability to develop training and assessment in accordance with the features of a competency-based approach.

Additionally, ICAO included best practices related to training delivery methods, examiner reliability, continuous improvement of training programmes, and documentation (including training records management).

ICAO CABIN SAFETY PROGRAMME

In 2012, ICAO established a formal Cabin Safety Programme, as part of its Flight Operations Section. ICAO defines cabin safety as an area of flight operations that aims at enhancing the safety of both the passengers and the flight. The ICAO Cabin Safety Programme focuses on:

- Regulations relating to cabin operations
- Operator procedures and documentation
- Cabin crew training and qualifications
- Human performance
- Design and manufacturing
- Equipment and furnishings on board aircraft
- The operational environment

TRAINING FACILITIES AND DEVICES

During the development of the manual, ICAO received requests on guidance to assess training facilities and devices. A chapter in the manual was dedicated to this subject. It addresses:

- Classroom-based training
- Trainee-to-instructor ratios
- Criteria for safety and emergency equipment suitable for use during training
- Criteria for the approval of cabin training devices
- Criteria for facilities used for firefighting and water survival
- Considerations when using another operator/training organization's devices.

In order to assess and evaluate the trainee's competency, ICAO recommends that the operator determine ratio of trainees per instructor, satisfactory to the State, and recommends certain ratios. The numbers of instructors needed varies based on the different training environments and delivery methods used by the operator. Different ratios are proposed for the classroom environment, facilitating computer-based training, conducting practical instruction, and familiarization flights.

Cabin Training Devices (CTDs) that are capable of recreating realistic situations can be used to provide effective training on safety and abnormal/emergency procedures. When applicable, a mock-up or simulator should be used to enable realistic simulation of the cabin crew's duties without continuous need for use of actual aircraft. Doc 10002 provides guidelines for CTDs used for cabin crew training, for emergency evacuation training as well as emergency exit training. The criteria presented in the manual is meant to assist operators in choosing an appropriate CTD and serve as a means for State inspectors to assess and approve the use of these devices as part of the operator's training programme.

SMS TRAINING FOR CABIN CREW MEMBERS

As part of the training manual, ICAO developed guidance on SMS training specially tailored for cabin crew members. Training in SMS is defined as training which focuses on the role that the individual cabin crew members play within the operator's SMS and how their contributions fit in the bigger picture of safety management at the overarching organizational level. The goal of this training is to ensure that cabin crew are trained and competent to perform their duties within the SMS.

The scope of SMS training must be appropriate to each individual's roles and responsibilities within the operation. Training should follow a building-block approach. As part of the ICAO requirements, an operator must provide training to its operational personnel (including cabin crew), managers and supervisors, senior managers, and the accountable executive for the SMS.

SMS training should address the specific role that cabin crew members play in the operation and includes:

- SMS fundamentals and overview of the operator's SMS
- The operator's safety policy
- Hazard identification and reporting
- Safety communication

IN-CHARGE CABIN CREW MEMBER TRAINING

Completion of the operator's cabin crew training programme provides specialized competencies and skills relevant to becoming a qualified cabin crew member. In-charge cabin crew training is usually additional or enhanced training which is

ICAO ANNEXES REGARDING CABIN CREW

ICAO Annex 6 (Operation of Aircraft, Part I: International Commercial Air Transport – Aeroplanes), contains standards for the conduct of international aeroplane operations, including requirements on the establishment of minimum cabin crew competencies specific to each aircraft type, approved cabin crew training programmes, fatigue management, as well as safety and emergency equipment required in the passenger cabin of commercial aeroplanes.

Annex 8 (Airworthiness of Aircraft) includes standards related to cabin design, the protection of its occupants, cabin systems' design features and crashworthiness.

Additionally, other ICAO Annexes address cabin crew and cabin safety-related issues. These include Annex 18 (The Safe Transport of Dangerous Goods by Air), Annex 13 (Aircraft Accident and Incident Investigation), and Annex 19 (Safety Management).

specific to the duties and responsibilities of a cabin crew member leader and provides him/her with the competencies and skills required to assume that role.

The goal of this training is to enable the in-charge cabin crew member to carry out all the specific tasks that are assigned to him/her during day-to-day operations and normal, abnormal and emergency situations in order to participate in the safe operation of aircraft. This training includes the interactions with the flight and cabin crew, the management of the cabin environment and interfacing with other personnel, such as ground staff, law enforcement officers, airport security, medical personnel, etc. It also includes the completion of administrative tasks related to the cabin operations.

Although there is no international standard addressing in-charge cabin crew member training, ICAO developed guidance on the content of this type of training, which is presented in Doc 10002.

Training should cover these topics:

- Briefings (in normal, abnormal, and emergency situations) taking due account of special circumstances of flights (e.g. weather forecast conditions, political turmoil at destination, special categories of passengers, etc.)
- Communication, cooperation, and coordination with the crew and with other personnel
- Operator's procedures and legal requirements
- Administrative tasks required by the operator
- Human performance
- Reporting systems and requirements
- Fatigue management
- Leadership skills

NEXT STEP: FOCUS ON IMPLEMENTATION

In an effort to assist States and Industry in implementing the content of the *Cabin Crew Safety Training Manual*, ICAO will hold a series of regional workshops, open free-of-charge to Member States and Industry representatives. The goal of the workshops is to provide participants with knowledge of SARPs relevant to cabin safety and security contained in ICAO Annexes and related guidance material, as well as to present cabin crew competency-based training concepts and associated guidance material. The workshops also aim at developing participants' knowledge on the implementation, approval, and oversight of key components of cabin crew competency-based training programmes, based on Doc 10002.

The *ICAO Cabin Crew Safety Training Manual (Doc 10002)* is now available to States in English on the ICAO-NET at <http://portal.icao.int/> and can be obtained via the ICAO online store at <http://store1.icao.int/index.php/catalogsearch/result/?q=10002>.

More information on ICAO's Cabin Safety Programme and upcoming regional workshops can be found at www.icao.int/cabinsafety. ■



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ICAO UPDATES TRAINING COMMUNITY ON UPRT, MPL, AND CABIN CREW TRAINING



Mitch Fox, ICAO ANB Chief, Flight Operations Section, speaks to the aviation training community at WATS

✈ One of the premier annual gatherings of subject experts on commercial airline training is the World Aviation Training Conference and Tradeshow, known in the industry as WATS. Mitch Fox, Chief of the Flight Operations Section, Air Navigation Bureau, called the event “a superb exchange of information.”

In April, more than 1000 aviation professionals from 48 countries around the globe gathered in Orlando, Florida, US for the 17th edition of the three-day WATS event. This year’s theme was “Aviation Training Cultures and Human Performance.”

Speakers, attendees, and exhibitors represented airlines, pilot groups, aircraft manufacturers, regulators, other government agencies, simulator manufacturers, and training providers.

The conference was initiated with keynote addresses from Michael Huerta, Administrator, US Federal Aviation Administration (FAA) and Christopher Hart, Vice-Chairman, US National Transportation Safety Board (NTSB).

Mitch Fox represented ICAO in three of the conference ‘streams’:

- In the airline pilot training stream, Fox was part of the panel discussing Upset Prevention and Recovery Training.
- In the regional airline pilot training stream, he was a panelist for the Pilot Training in Transition discussion.
- In the cabin crew training stream, he presented on the Global Insights panel.

COMMERCIAL AIRLINE PILOT TRAINING

Upset Prevention and Recovery Training (UPRT)

The focus of the UPRT Special Panel was the new *ICAO Manual on Aeroplane Upset Prevention and Recovery* (Doc 10011), published March 3, 2014. The purpose of the manual is to provide guidance to developers and providers of UPRT programmes. The ICAO framework employs an integrated approach that identifies training resources to provide pilots with the necessary knowledge, skills, and attitudes to reduce the probability of an upset encounter and to maximize their ability to recover from such an event.

The new UPRT guidance is applicable November 13, 2014.

Upset Prevention and Recovery Training was developed to help reduce Loss of Control In-flight (LOC-I) accidents, which were the leading cause of fatalities in commercial aviation between 2001 and 2011. An aeroplane upset often precedes fatal LOC-I events. An upset is defined in part as “an in-flight condition by which an aeroplane unintentionally exceeds the parameters normally experienced in normal line operations or training.”

Over the past five years, numerous aviation organizations undertook initiatives to investigate LOC-I phenomena, examine current training practices, and develop risk-mitigating strategies. The two most notable working groups were the International Committee for Aviation Training in Extended Envelopes (ICATEE), launched in 2009 under the auspices of the Royal Aeronautical Society (RAeS), and LOCART (Loss of Control Avoidance and Recovery Training), which evolved from an FAA aviation rulemaking committee into a joint effort of the FAA, the European Aviation Safety Agency (EASA), and ICAO.

Ultimately, the LOCART effort involved about 100 training experts and included representatives from OEMs Airbus, ATR, Boeing, Bombardier, and Embraer; training companies CAE, FlightSafety International, and others; industry groups such as the Flight Safety Foundation (FSF), the International Federation of Air Line Pilots' Associations (IFALPA), Coalition of Airline Pilots' Associations (CAPA), the International Air Transport Association (IATA), Airlines for America (A4A), and Regional Airlines Association (RAA); regulators from Canada, Europe, the UK, and US; and ICAO.

"Because we were working so closely together, we were well tuned into the needs of the community," Fox noted.

After six LOCART meetings in 2012, a draft UPRT manual was developed in December 2012. The draft was reviewed in May 2013 and again in December 2013, then published in March as Doc 10011 under the authority of the Secretary General.

In addition to the Manual on Aeroplane UPRT, changes were made to Annex 1 with regard to Multi-crew Pilot Licence (MPL) UPRT, Commercial Pilot Licence (CPL) UPRT, and Type-Rating UPRT; to Annex 6 Part 1 for Operator UPRT programmes; and to the PANS-TRNG UPRT chapter. Amendments are also being developed for Doc 9625 Part 1, the *Manual of Criteria for the Qualification of Flight Simulation Training Devices (FSTDs)* – these changes, expected later this year, are being developed through the International Pilot Training Consortium (IPTC), a collaboration of ICAO, IATA, IFALPA, and the RAeS. At WATS, Fox said, "We were able to outline what we had done together as a community to develop Upset Prevention and Recovery Training, which has since been adopted by the ICAO Council for commercial pilots as a recommended practice and also for the MPL, the type rating, and for initial / recurrent training within an airline. It becomes an international standard."

"What we presented was a suite of tools from a regulatory perspective and from an implementation perspective that provides the basics of moving forward. It's an integrated package because we developed it along with, initially, the ICATEE committee of the Royal Aeronautical Society, then alongside the regulators through LOCART. It is exciting because it's a package – from regulatory standards to implementation guidance, even down to implementation cross-reference to a training aid that was produced by the manufacturers [ARUTA – *Airplane Recovery*

Upset Training Aid, Revision 2]. We will be doing further work with the manufacturers on advancing that guidance so it covers aeroplanes that were previously not covered, such as turboprops and smaller aircraft." ARUTA Revision 3 is expected to be ready by the end of 2014. Fox and four other subject experts did a joint presentation at WATS to explain, at a high level, the complexities of the UPRT changes and what they mean to training organizations. The other panelists were: Robert Burke, FAA; Andrea Boriardi, EASA; Philip Adrian, Boeing; and Lou Németh, CAE.

The complete presentation is available on the Halldale website (www.halldale.com) under Events/WATS 2014.

Here are highlights of their comments:

- Prevention is the key factor being emphasized; every training session should be about preventing loss of control. "Pilots don't want to be in a stall that develops into an upset in the first place. We want to mitigate the problem before it escalates," said Németh, who served as panel moderator.
- A globally harmonized approach is necessary.
- The challenge will be implementation.
- Instructors need to understand and adhere to the simulator limits – the valid training envelope (VTE) – to avoid negative training. Use of FSTDs in regions of the flight envelope beyond the device's ability to provide accurate fidelity has the potential to introduce misleading concepts or inappropriate understanding of techniques which can result in a 'negative' training experience.
- Human factors, crew resource management (CRM) and threat and error management (TEM) are integral parts of the training.

UPRT training is divided into two tracks: academic and practical. Practical training is further subdivided into two parts: on-aeroplane and FSTD. The ICAO UPRT manual recognizes that current FSTDs "have limitations that render them incapable of providing the complete exposure to conditions synonymous with preventing or recovering from an LOC-I event." The on-aeroplane UPRT helps to fill the gaps and provides experience and confidence in the psychophysiological domain of upsets, such as the 'startle factor' and G-forces.

In May, ICAO held a three-day Loss of Control In-flight Symposium to further address industry concerns related to LOC-I events by looking at the range of contributing factors; considering what work is being done now and how it is being applied; identifying what more needs to be done; and coordinating efforts for maximum efficiency in use of resources to address this issue globally.

The Symposium covered:

- What the data says about LOC-I events
- Approaches to enhance the way pilots monitor
- Developing technologies and approaches to avoid pre-LOC-I conditions
- Methods for improving pilot energy awareness

- Optimizing the management of automated systems
- Human-centric flightdeck technology and its application
- Research on the management of unexpected threatening events
- Upset prevention and recovery training approaches
- Advances in simulation
- New ICAO provisions for UPRT

REGIONAL AIRLINE PILOT TRAINING

Pilot Training in Transition

In the regional airline pilot training stream, Fox participated on a panel addressing "Pilot Training in Transition," including proficiency-based training regimes such as the Multi-crew Pilot's Licence. The panel was moderated by Capt Paul Kolisch and included Bill Whyte of Compass Airlines.

Fox addressed MPL with particular emphasis on the global experience to date, and the panelists and audience discussed whether such a training regime is applicable to the US airline environment.

"The MPL presentation at WATS was partly a reporting for people who are not familiar with the programme and the follow-up process in terms of evaluating the effectiveness of results to date," Fox explained. His presentation provided detail on the ICAO MPL Symposium, which drew nearly 300 participants to Montréal in mid-December 2013.

At WATS, Fox described the history of MPL, including discussions on competencies in the 1960s up to its adoption by ICAO in 2006.

He explained "What is an MPL?" – the first new ICAO licence of its kind in over 40 years, an alternate pathway for ab-initio student pilots to achieve the necessary competencies to become "highly effective, efficient, and safe operators of commercial multi-crew aeroplanes."

And he delineated the outcomes of the December MPL Symposium. "We're really very pleased with the MPL proof of concept," Fox told the WATS gathering. "Programmes are getting good results. Pass rates coming out of line training are on the order of 99%. That's really incredible for a brand new licence."

Key elements for successful MPL programmes include:

- Airline / ATO / State partnerships
- Effective course design, including Competency-Based Training (CBT) and Threat and Error Management (TEM)
- Competent, standardized instructors
- A rigorous selection process
- An effective Learning Management System (LMS)
- A repeatable feedback system for continuing improvement

There were several key outcomes of the ICAO MPL Symposium. The experts indicated that:

- Oversight of MPL programmes requires significant civil aviation authority resources and suitably trained inspectors

- The competency concept is evolving within PANS-TRNG. ICAO is reviewing definitions and recent concepts.
- There needs to be continued and improved data collection (for examples, knowledge requirement and improved air traffic control communications). Approved Training Organizations (ATOs) were invited to share data with research institutes for specific research projects.
- A need for implementation guidance.
- Guidelines for expanding on PANS-TRNG for MPL course approval, implementation, instructor competencies and qualification, and ATC communications training. "We didn't have the same level of guidance to regulators who potentially approve an MPL programme. Work has already begun on expanding on that," Fox stated.

There was also a call for reviewing the number of takeoffs and landings on type. Many MPL graduates have averaged more than the 'normal' events recommended. PANS-TRNG recommends 12; the average for all graduates to date has been 14; however, some ATOs which did more preparation sessions in FSTDs averaged fewer on-aircraft takeoffs and landings.

"We need to continue a rigorous application of the MPL concept, joining with industry partners, continuing to gather and analyze data," Fox told the regional airline representatives. "The takeaway I got from the WATS audience is that they are very pleased. Is there room for improvement? Yes. But the standards are proven. MPL works."

CABIN CREW TRAINING

Document 10002

In the WATS cabin crew training stream, as part of a Global Insights panel – which included Kellie White of Emirates Airline, Novair's Andreas Bekiris, and Magnus Lindroth, Stockholm Airport – Mitch Fox talked about "ICAO's Competency-Based Approach to Cabin Crew Safety Training." The focus of his presentation was the new *ICAO Cabin Crew Safety Training Manual Doc 10002, 1st Edition*, which was subsequently published in May.

"The presentation was well received by a large audience," Fox said. "They are pleased that ICAO is taking a more active role in cabin safety-related issues. The aviation community values that we have refocused efforts in this area."

Perhaps the most significant aspect of the new cabin crew manual is its competency-based training approach, which mirrors the framework for the MPL programme. Doc 10002 outlines an international baseline of all the competencies that are necessary for cabin crew members to perform their duties and responsibilities in normal, abnormal, and emergency situations.

This is the first time ICAO adapted the approach for cabin crew. In this issue of *ICAO Journal*, beginning on page 12, Martin Maurino, ICAO Safety, Efficiency and Operations Officer, Flight Operations Section, provides an extensive overview of the new Doc 10002: "Raising the Bar on Cabin Crew Training." ■

RESTRUCTURING FOR A MULTIDISCIPLINARY FUTURE



Nancy Graham, Director, Air Navigation Bureau. As ANB Director, Nancy Graham oversees much of the work undertaken in the development of ICAO's technical Standards and Recommended Practices (SARPs), which are critical to the safety of the international air transport infrastructure.

✈️ ICAO's Air Navigation Bureau is focusing on providing more holistic, 'implementer-centric' information and resources which facilitate operational improvements.

The Aviation System Block Upgrade (ASBU) methodology, as a central tenet of the ICAO-approved Global Air Navigation Plan (GANP) for 2013-2028, has led to a restructuring of ICAO's Air Navigation Bureau in keeping with the modular, multidisciplinary ASBU design.

"Our focus is to develop a global path for air navigation improvements and delivering implementation packages that result in operational improvement," said Nancy Graham, Air Navigation Bureau (ANB) Director. "We're trying to look at it holistically from the point of view of the implementer and work together with the aviation community to anticipate all of the elements that are needed so it comes out as a package."

"The community as a whole has to work together – the airlines, the air navigation service providers (ANSPs), and the airports, as well as the regulators – to actually implement an operational improvement on the air navigation side," Graham added.

The ASBU (or "block upgrade") is the "common language" of air navigation. The ASBU framework is the result of comprehensive consultations with a wide range of aviation stakeholders, and it provides a harmonized and flexible approach for implementing operational improvements within the global aviation system. The ASBU methodology in the GANP gives States a plan forward and the freedom to choose from a range of systems and services which will be compliant with the global standards. It will also provide industry with a clear pathway to where they need to invest their research and technology funds.

"We're providing more systems engineering and integration at the global level for an easier implementation at the regional level," Graham summarized.

ANB AND ICAO'S STRATEGIC OBJECTIVES

The Air Navigation Bureau is responsible for two of ICAO's five Strategic Objectives: Safety and Air Navigation Capacity & Efficiency

STRATEGIC OBJECTIVE: Enhance global civil aviation Safety

This Strategic Objective is focused primarily on the State's regulatory oversight capabilities. The Global Aviation Safety Plan (GASP) outlines the key activities for the triennium.

STRATEGIC OBJECTIVE: Increase the Capacity and improve the Efficiency of the global civil aviation system

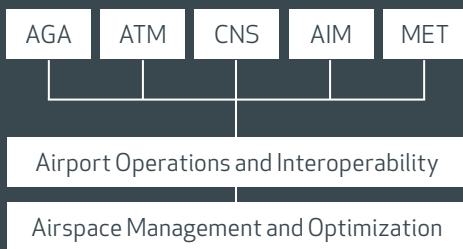
This Strategic Objective is focused primarily on upgrading the air navigation and aerodrome infrastructure and developing new procedures to optimize aviation system performance. The Global Air Navigation Plan (GANP) outlines the key activities for the triennium.

ICAO GLOBAL PLANS DRIVING GUIDED EVOLUTION: INSIDE AND OUT

The 38th Assembly of ICAO has recently endorsed the Global Aviation Safety Plan (GASP) and the Global Air Navigation Plan (GANP) that set the directions for achieving two of ICAO's five strategic objectives: Safety and Air Navigation Capacity & Efficiency. Under the two global plans an integrated air navigation work programme has been developed to help States upgrade their aviation systems, following the Aviation System Block Upgrade (ASBU) modules, to increase capacity while maintaining safety.

Accordingly, the Air Navigation Bureau (ANB) has been restructured in order to focus on regulatory and operational improvements by delivering value through implementation packages, aligned with the ICAO strategic objectives and the aviation communities' needs.

The new ANB structure features three Branches that include multidisciplinary Sections as well as Sections of a single discipline. In particular, the aerodromes (AGA), air traffic management (ATM), communication, navigation and surveillance (CNS), aeronautical information management (AIM) and meteorology (MET) are integrated into two major multidisciplinary sections, i.e. Airport Operations and Interoperability and Airspace Management and Optimization.



Aviation communities, including State CAAs, can refer to the Terms of Reference of the Branches and Sections for business contacts. Senior technical staff will also be designated as lead focal points for specific subjects. More information on 'who's who' in ANB can be found on the public web site at: <http://www.icao.int/safety/airnavigation/Pages/default.aspx>

The global air navigation plan allows ICAO and its partners to create a timeline for standards development. But ANB needed to restructure itself and its expert groups so that timelines and deliverables are available when needed, especially for States with the highest density airspaces.

"We will produce implementation kits which will include all the necessary ICAO provisions in one place supporting the operational improvements, along with a series of orientation programmes and even training packages for those States which don't have the immediately available capacity to implement the modules," explained Graham.

THREE BASIC FUNCTIONS

The restructured Air Navigation Bureau (ANB) comprises three basic functions:

- Safety
- Air Navigation
- Monitoring & Oversight

The Safety Branch focuses predominantly on regulatory matters and the oversight of the aviation system in the context of a State. It is responsible for the Strategic Objective to enhance global civil aviation safety, including the Global Aviation Safety Plan (GASP).

The Safety Branch is organized into several domain-specific Sections, including Operational Safety, Cargo Safety (representing a broadened scope from the former 'Dangerous Goods' section), Accident Investigation, Aviation Medicine, and Safety Implementation Planning and Support.

The Air Navigation Branch deals with airports, ANSPs, regulators, and airlines. It is responsible for the Strategic Objective to increase the capacity and improve the efficiency of the global civil aviation system, including the Global Air Navigation Plan (GANP).

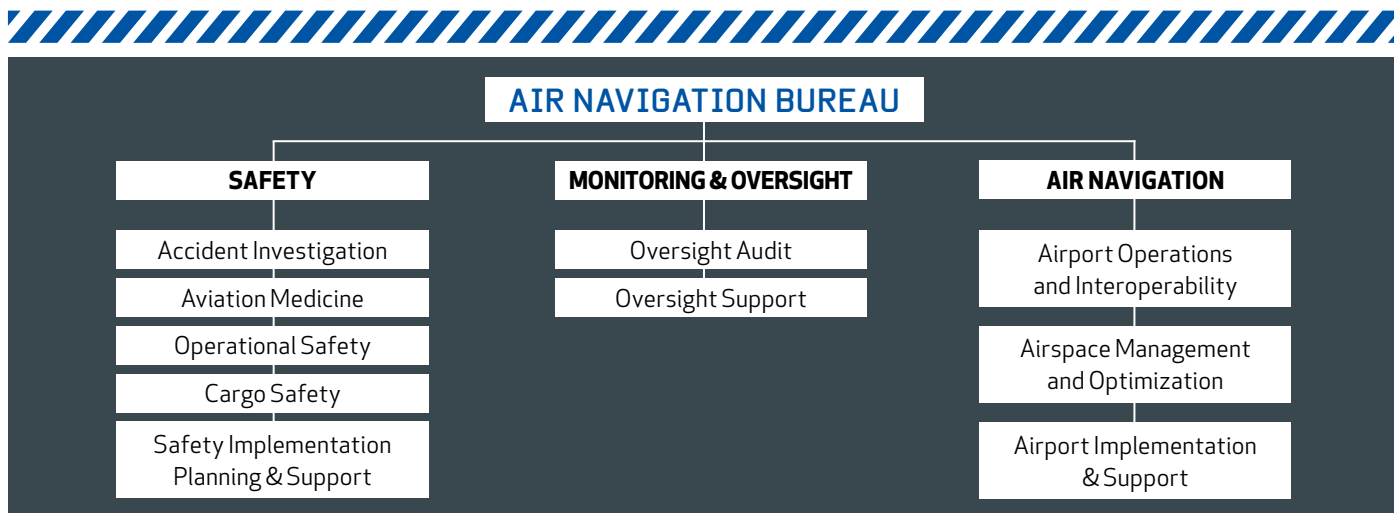
The three Sections under the Air Navigation Branch are Airspace Management and Optimization, Airport Operations and Interoperability, and Air Navigation Implementation Planning and Support.

The Monitoring and Oversight Branch is responsible for managing the development, implementation, maintenance and quality of the Universal Safety Oversight Audit Programme Continuous Monitoring Approach (USOAP CMA).

The Monitoring and Oversight Branch is comprised of two entities: the Oversight Audit Section and the Oversight Support Unit. The restructuring involves some consolidation. Graham said, "We used to have communications, navigation, surveillance, ATM, aeronautical information, meteorology... we had a whole bunch of different disciplines, but there was no cohesive look at the packages that were necessary to get you to operational approval. So this takes away all of these stovepipes and focuses more on what we are trying to achieve, which is improved operations and interoperability at an airport and airspace management and optimization."

THE ANNEX RIPPLE EFFECT

"Normally what we've done in the past, and very effectively, is deliver Annex amendments," Graham said. "But when we do an Annex amendment, there's a ripple effect. It actually takes a number of Annex amendments and some guidance material and



FIRST AIR NAVIGATION REPORT ISSUED

ICAO has published its inaugural *Air Navigation Report*. The new annual report features global and regional results as well as best practices on the implementation of Performance-Based Navigation (PBN), Continuous Climb and Continuous Descent Operations (CCO/CDO), Air Traffic Flow Management (ATFM), and Aeronautical Information Management (AIM) progress.

The report will be supplemented by a series of new online dashboards to provide real-time updates on local safety and efficiency performance indicators, improving transparency and accountability on aviation safety and air navigation performance and implementation in all ICAO Regions. The online dashboards will be available on ICAO regional office websites.

The new report and online dashboards will further assist ICAO in managing work toward the priorities and objectives established in the Global Air Navigation Plan (GANP).

Nancy Graham, Air Navigation Bureau Director, said, "Effective monitoring and reporting efforts of this nature greatly assist us in determining practical priorities, eventually helping to set in motion targeted collaborative initiatives like the highly successful ICAO Runway Safety Programme. Our goal is to leverage ICAO's data in these areas, make it available to our community as immediately as possible, and then to support the data with analysis and trends identification that will be published in our reports."

The new *Air Navigation Report* is a sister publication to the *ICAO Safety Report*, also issued annually. Both reports are available free of charge on the ICAO website.

some training in order to deliver and have an operational improvement in the field. Manuals must be developed on new operations. Regulators need to certify new processes. And, and, and..."

"What we didn't do in the past was think of it from the point of view of the implementer."

ICAO has traditionally worked through discipline-specific expert groups, but the ASBUs and other aviation challenges demand a much more multidisciplinary approach. "So we will still develop standards with the assistance of an expert group but it will be a multidisciplinary group or task force established specifically for the purpose to create the standards, with a start and an end – similar to the work of our volcanic ash task force," Graham said.


"Ultimately we need to communicate in a language that the ministers who are going to fund part of these new systems can understand, as well as the public. Part of the process of simplification is to create a conversation that everyone can take part in."

"For example, we tried to make [EASA's] SESAR and [the FAA's] NextGen something a human being could understand," Graham said. And then those States with sophisticated air transport system plans map those against the ASBUs. The advanced States typically do their own guidance material and certification strategies, like with performance-based navigation, etc."

"However, those States which have high growth but not high capacity really struggle with that. So they look to ICAO to do more of the material for them, including training, which is not something we've done a lot of in the past. That's part of the area we're moving into," Graham explained.

The ASBU modules are composed of flexible and scalable building blocks that can be implemented in a region or a State to meet identified needs. Not all modules are required in all areas; implementation can be customized for the prevailing and expected future circumstances. "The benefit we're looking to provide," said Graham, "is to the aviation system as a whole." ■

ACTION PLANS: THE DAWN OF REAL EMISSIONS REDUCTION

 **The 38th Session of the ICAO Assembly in 2013 further encouraged Member States to voluntarily submit their Action Plans on Emissions Reduction (APER) by the end of June 2015. To date, 73 States representing 82% of international revenue tonne kilometres (RTK) have submitted their first action plan and another nine plan to do so in 2014. To support other States in their efforts to take action on aviation and climate change, ICAO is holding a series of regional environment and action plan seminars.**

This is the second series of ICAO hands-on regional workshops to support member States' action plan development. The first workshops from May to July 2011 reached 91 States representing 93% of global international aviation RTK.

States' action plans are expected to incorporate information on international RTK, fuel consumption, and CO₂ emissions in the future (ideally up to 2050), as well as measures proposed to address CO₂ emissions from international civil aviation and any assistance needs (financial, technological, training, etc.).

ICAO developed a web-interface to serve as an electronic template for the submission of action plans, as well as guidance material and a framework for collecting, assessing, and reporting aviation CO₂ emissions.

"The seminars provide a means of partnering with people who have experience in developing the action plans," said Jane Hupe, ICAO Deputy Director, Environment. "All our States want to take action on climate change but not all of them have the experience or means to develop detailed action plans, so we're bringing together experts from various organizations in the aviation and climate community."

Participants in the April 2014 seminars for the North American, Central American and Caribbean (NACC) region have included ICAO Environmental Officers, members of the Committee on Aviation Environmental Protection (CAEP), the United Nations Development Programme (UNDP), the International Air Transport Association (IATA), the Airports Council International (ACI), the Inter-American Development Bank (IDB), and representatives from States in the region which have already submitted their plans and can share their experience. States which presented included Canada, Cuba, the Dominican Republic, Guatemala, Jamaica, Mexico, Trinidad and Tobago, and the United States.

The Assembly also requested additional regional seminars to cover ICAO's environmental work, including recent developments in CAEP, aviation and the environment outlook and trends, available ICAO tools, aircraft noise standards and noise management, local air quality issues, ICAO engine emission standards, CO₂ emissions reduction technology and standards, alternative fuels, airport planning, market-based measures, ICAO assistance to States, financing, and international cooperation. In order to effectively use the Organization's resources, these "Aviation and Environment Seminars" and "States' Action Plans Seminars" are being held back-to-back.

"There is so much interest in assistance," Hupe said. "This can be a game-changer. Together with our partners we are helping States become more aware of the information and best practices available to them, as well as building their capacity to use the ICAO tools" such as ICAO's Carbon Emissions Calculator, Green Meeting Calculator, and Fuel Savings Estimation Tool.

Building upon this successful capacity-building experience and the assistance requested by States in their action plans, ICAO succeeded in obtaining, for the first time, green funding for two projects, one in cooperation with the EC (European Commission) and one with UNDP funded by the GEF (Global Environment Facility). One EC-funded project will target 14 states from the African and Caribbean regions, supporting action plan development and implementation of some measures. The global UNDP-GEF partnership project will support capacity building for developing States, particularly Small Island Developing States, including a practical case study on implementation of aviation CO₂ reduction measures. These assistance projects will pave the way for similar initiatives in other States, and the capacity building provided through the ICAO seminars will help all States to develop, further refine, and implement their action plans, contributing toward concrete steps to achieving the sustainable growth of international aviation. ■

REGIONAL SEMINARS HELD TO DATE IN 2014

Mexico City, Mexico – NACC – 1 to 4 April 2014
Lima, Peru – SAM – 7 to 10 June 2014
Yaoundé, Cameroon – WACAF – 11 to 13 June 2014
Nairobi, Kenya – ESAF – 16 to 18 June 2014

UPCOMING REGIONAL SEMINARS, 2014-2015

Kuala Lumpur, Malaysia – APAC – 28 to 30 October 2014
Warsaw, Poland – EUR/NAT – 18 to 20 March 2015
Dubai, UAE – MID – 23 to 25 March 2015
Montréal, Canada – ICAO HQ – Fall 2015

MONTREAL PROTOCOL CLARIFIES UNRULY PASSENGER CONVENTION

✈ A rare Diplomatic Conference featuring over 400 participants from 100 ICAO Member States and nine international organizations and institutions officially adopted a Protocol to amend the 1963 Tokyo Convention, addressing what had become recognized in recent years as a troubling escalation in the frequency of incidents involving disruptive and unruly passengers on scheduled commercial flights.

On 4 April, an International Civil Aviation Organization (ICAO) Diplomatic Conference adopted the Montréal Protocol 2014 to amend the *Convention on Offences and Certain Other Acts Committed On Board Aircraft 1963*, otherwise known as the Tokyo Convention. The Protocol will come into force the first day of the second month after 22 member states ratify the instrument.

The Diplomatic Conference was assembled to address a rising tide of "unruly passenger" incidents – more than 28,000 reported incidents between 2007 and 2013, according to the Safety Trend Evaluation, Analysis & Data Exchange System (STEADES) database maintained by the International Air Transport Association (IATA). These incidents included violence against crew and other passengers, harassment, and failure to follow safety instructions.

ICAO Council President, Dr. Olumuyiwa Benard Aliu, stated, "This new Protocol to the Tokyo Convention significantly improves the ability of ICAO Member States to expand jurisdiction over related offenses to the State of the Operator and the State of Landing. It will also serve to enhance global aviation security provisions by expressly extending legal recognition and protections to in-flight security officers (IFSOs) from this point forward."

According to Jiefang Huang, Senior Legal Officer in ICAO's Legal Affairs and External Relations Bureau, the new Protocol provides the legal framework for dealing with passengers whose behaviour can or does lead to physical assault or otherwise poses a threat to the safety of a flight. "Unruly people are a very, very small percentage of passengers," Huang noted. "There's an incident every 1,200 flights. But those are only the ones that get reported, and the problem has been growing. Unruly behaviour does not always amount to a criminal act, but it can have serious consequences, endangering the safety of the flight and everyone on board."

Michael Gill, IATA Director, Aviation Environment, said, "Unruly behaviour reflects a broader societal problem where anti-social behaviour is becoming more and more prevalent." The most common disruptive behaviours are physical confrontation with other passengers or crew members, refusal to obey safety instructions of the crew (e.g. fastening of seatbelts or disrupting a safety announcement), sexual abuse or harassment, illegal consumption of narcotics and cigarettes, and making threats that could affect the safety of the flight.

PROTOCOL PROVISIONS

The new Montréal Protocol contains four main categories of provisions: definition of offences, jurisdiction over alleged offenders, the role of in-flight security officers, and the ability of an airline to recover damages stemming from the incident.

Offences

All that is required under the Protocol is reasonable grounds to believe a "serious offence" has been committed. Serious offences could range from terrorist threats, to violent or threatening behaviour against other passengers or crew, to tampering with a smoke detector.

Jurisdiction

The new Protocol expands the jurisdiction over offences and acts committed on board aircraft from the State of Registration of



Image courtesy: Gillen Industries

“Unruly behaviour does not always amount to a criminal act, but it can have serious consequences, endangering the safety of the flight and everyone on board.”

– Jeifang Huang, Senior Legal Officer in ICAO’s Legal Affairs and External Relations Bureau

the aircraft to the State of the Operator and the State of Landing (where the aircraft has its last point of take-off or next point of intended landing within its territory and the aircraft subsequently lands in its territory with the alleged offender still on board). Extending the jurisdiction “closes a loophole which allowed many serious offences to escape legal action,” Huang said.

The State to which the alleged offender is delivered upon landing is obliged to make a preliminary investigation into the alleged offence and then inform the other States, as well as the State of Nationality of the detained person, about whether it intends to exercise jurisdiction.

In-Flight Security Officers

States may establish in-flight security officers (IFSOs), often referred to as “air marshals,” who are deployed pursuant to bilateral or multilateral agreements between States, to take reasonable preventive measures where those officers have reasonable grounds to believe such action is immediately necessary to protect the safety of the aircraft or the persons or property in the aircraft. The legal protection currently given to the aircraft commander, members of the crew, any passenger, and the owner or operator of the aircraft in respect of any action taken against the alleged offender is extended to the in-flight security officer.

Recovery of Damages

Nothing in the Convention precludes any right to seek recovery of damages from a person disembarked or delivered pursuant to the Convention.

PROPOSAL TO TREATY IN 5 YEARS

Tan Siew Huay of Singapore was elected as the Conference President. She was supported by five vice-presidents: Michael Jennison (United States), Norberto Luongo (Argentina), Levers Mabaso (South Africa), Malgorzata Polkowska

MONTREAL PROTOCOL 2014

- Clarifies the definition of unruly passenger behaviour
- Extends the jurisdiction over offences and acts committed on board aircraft from the State of Registration of the aircraft to the State of the Operator and the State of Landing
- Extends legal recognition and protections to in-flight security officers
- Enables recovery of costs stemming from unruly passenger behavior

(Poland), and His Highness Prince Turki Bin Faisal Al Saud (Saudi Arabia).

“ICAO appreciates the significant challenges undertaken by this conference and we are grateful for the diligent work of its participants and executive leadership,” noted ICAO Secretary General, Raymond Benjamin. “This new Protocol to the Tokyo Convention will make an important contribution to assuring the security of passengers and crew worldwide.”


ICAO has driven the process through from initial proposal to a new treaty in five years, a relatively short length of time for a new protocol to be agreed.

Tony Tyler, IATA’s Director General and CEO, said, “Governments must now follow-up on the success of the diplomatic conference and ratify the new protocol. With some 300 incidents of unruly behaviour being reported each week, we urge governments to move quickly.” ■



From left to right: Malgorzata Polkowska (Poland); Eveling Anabell Aráuz Betanco (Nicaragua); Kerryn Macaulay (Australia), ICAO Council President Olumuyiwa Benard Aliu; Aysha Alhameli (United Arab Emirates); Maria Helena Faleiro de Almeida (Portugal).

WOMEN OF THE ICAO COUNCIL

 This triennium at ICAO sees the largest cohort of women serving on the 36-member Council with five very independent, capable, and accomplished women representing States from most regions of the world: Australia, Nicaragua, Poland, Portugal, and the United Arab Emirates.

The women serving on the ICAO Council come from different cultures and have varied educational backgrounds, career experience, and interests ranging from law, management, flight operations and accident investigation, to economics. Yet they have one thing in common – they are passionate about aviation. They are all worthy ambassadors for their countries and regions. But more importantly, they have ably demonstrated that woman can bring a constructive and collaborative approach to the development of aviation policy at ICAO to foster a safe, secure, and sustainable international aviation industry.

In 1975, on the occasion of the International Women's Year, the United Nations started celebrating International Women's day on 8 March. A few years later, the UN General Assembly recognized the role of women in peace efforts and development and urged an end to discrimination and an increase of support for women's full and equal participation. According to the UN, International Women's Day is celebrated to recognize women's achievements without regard to divisions, whether national, ethnic, linguistic, cultural, economic, or political. It's an occasion for looking back on past struggles and accomplishments, but more importantly,

it's an occasion for looking ahead to the untapped potential and opportunities that await future generations of women.

In his speech to commemorate International Women's Day in ICAO this year, the Council President, Dr. Olumuyiwa Benard Aliu, acknowledged the strong contribution that women have played in the Council, adding that it was illustrative of the ever-increasing leadership roles that women are playing in all areas of endeavour despite some of the ongoing challenges many still face.

Speaking on behalf of her female Council colleagues, the Representative of Australia, Ms. Kerryn Macaulay, expressed their wish to promote cooperation with foreign female students and young female aviation professionals: "to reach out to them, to provide support in their aviation careers, and to make ICAO a more familiar and friendly forum for women working in the aviation sector in our regions."

The many hard-working women that make ICAO operate effectively and efficiently were enthusiastically acknowledged



“There was a Civil Air Patrol squadron operating out of Hybla Valley Airport [Virginia’s first airport], so I started flying with them. I was the only woman. We were on a pilot-to-pilot basis. The question of man and woman didn't come up.”

– From a 1987 interview with Betty Crites Dillon, the first woman to serve as a representative on the ICAO Council


and encouraged, “including those that work in the technical areas of ICAO, those who provide administrative support, those who help us to understand each other in this multi-lingual environment, and those that keep us secure and our offices clean – we thank each and every one of you for your dedication to your important work.”

This year's International Women's Day at ICAO was dedicated to the first woman to serve as a Council Representative. Mrs. Betty Crites Dillon from the United States joined the then 27-member Council of ICAO in December 1971. Mrs. Dillon was a licensed private pilot, an authority on air transportation, and a Peace Corps veteran. She served on the Council from 1971 to 1977.

As a symbolic gesture to celebrate this special day, each Council member was provided with a flower... “while flowers can have various meanings in different cultures, we see them as symbolizing life, strength, love and hope. For the male Council members who will be receiving a flower, we ask that you give yours to a woman who is special in your life.”

We hope that women around the world are celebrated, nurtured, and respected every day of the year as they rightfully deserve. ■

ICAO DRIVES OUTREACH AND AWARENESS ON NEW TRAVELLER IDENTIFICATION PROGRAMME

 The ICAO Machine Readable Travel Document (MRTD) team is spreading the word around the world about the Traveller Identification Programme (TRIP) Strategy adopted by the 38th Session of the ICAO Assembly last fall.

Regional MRTD-TRIP seminars were conducted in Burkina Faso in West Africa in November; Tashkent, Uzbekistan, in Central Asia in April; and Madrid, Spain in Western Europe in June. Over the past decade, ICAO has organized over 20 MRTD events, published 22 issues of the *MRTD Report*; delivered more than three dozen sub-regional workshops and Member States' assessment and assistance projects; and assisted over 100 States in MRTD-related issues.

As this issue was going to press, the 22nd meeting of the Technical Advisory Group on Machine Readable Travel Documents was convening at ICAO Headquarters in Montréal. (We will have a report on the TAG/MRTD event in the next issue.)

The message of a coherent integrated framework for traveller identification management is also being conveyed at industry gatherings such as SDW 2014 in London, where Jean-Francois La Manna, Expert Project Director at the French Ministry of Interior and ICAO Public Key Directory (PKD) member for France, presented on "Exploring the ICAO holistic and coordinated approach from Evidence of Identity to MRTDs."

This fall, the 10th edition of the annual ICAO MRTDs, Biometrics and Border Security Symposium and Exhibition will be held (October 7-9, 2014) at ICAO Headquarters in Montréal. Symposium speakers and facilitators will include world leaders in the field, policy makers and senior managers, top experts, practitioners, and researchers, many from the relevant working groups of ICAO, ISO, and other international organizations.

The MRTD-TRIP message is quite simple, according to Mauricio Siciliano, MRTD and Biometrics Programme Leader and Chief Editor of the *ICAO MRTD Report*. "The ICAO TRIP Strategy links the five elements of traveller identification and border controls into a coherent framework:

1. Evidence of Identification,
2. Document issuance and control,
3. MRTDs,
4. Inspection systems and tools, and
5. Interoperable applications."

In his closing remarks at the Tashkent event, Siciliano told the delegates, "These ICAO MRTD-TRIP Regional Seminars provide an opportunity to discuss practical ways in which we can join our forces to strengthen traveller identification management and border control capacity so States and their societies can benefit from the enhanced security and facilitation that the MRTD programme offers."


Key messages from the Seminar discussions include:

- *Compliance* with ICAO MRTD standards and specifications is both a legal obligation and of key importance to maximizing security and facilitation benefits for States and their citizens.
- The ICAO Standards are a foundation, but what also matters is the *practical implementation*. "If you implement ePassport, get it right. Read the chip at the borders, use the PKD," Siciliano said. Some States struggle with the implementation of Annex 9 standards and MRTD specifications, Siciliano acknowledged. "This calls for intensifying capacity-building assistance efforts, intensifying technical dialogue with States in need, and mobilizing assistance from the donor community."
- The *security of the passport issuance process and Evidence of Identification* are areas that require particular attention. Fraud efforts globally have been shifting toward obtaining genuine passports based on false identities, which can then be exploited for terrorist and trans-border crime purposes.
- *Cross-border cooperation and data sharing* is a vital area that requires further regional cooperation, confidence-building measures, joint activities, and information exchange in preventing identification fraud.

The deadline for the expiration or withdrawal of non-machine readable passports is only a little over a year away: 24 November 2015. "Meeting the deadline is a challenge to some States," said Siciliano. "We encourage States to maintain a dialogue with ICAO on this matter, send a reply to the Standard 3.10.1 Questionnaire and, if applicable, file a difference."

The ICAO Traveller Identification Strategy reconfirms and consolidates the relevance of robust identification management to the needs and expectations of Member States. The more the ICAO team knows about Member needs – through the Regional Seminars and other communications – the better ICAO will be enabled to develop an effective technical assistance strategy. ■

OCTOBER 2014 SYMPOSIUM TO HIGHLIGHT STRATEGIC ROLE OF INNOVATION IN AVIATION SECURITY

 **The need to address the evolving threat to civil aviation through effective yet sustainable measures is best achieved by introducing new and innovative processes and technologies. To foster a dialogue among States, industry, and academia about security innovation, ICAO will hold its first-ever Symposium on Innovation in Aviation Security, 21-23 October 2014, at ICAO Headquarters in Montréal.**

Delegates to the historic ICAO High-level Conference on Aviation Security (HLCAS) held in September 2012 agreed on the need to be forward-looking in addressing threats to civil aviation, rather than rely solely on reactive measures. Concluding that innovative processes and technologies were required to craft a security regime that is effective, efficient, operationally viable and economically sustainable, they called on ICAO to convene its first-ever Symposium on Innovation in Aviation Security (SIAS) in 2014. The event, which will feature an industry exhibition as well as several thematic panel sessions, is scheduled for 21-23 October at ICAO Headquarters in Montréal, Canada.

The primary purpose of the SIAS is to facilitate dialogue among all those with an interest in air transport security: States, airlines, aircraft manufacturers, airports, aviation security (AVSEC) technology and system vendors, international organizations, academic researchers, and other public and private-sector entities that wish to explore issues ranging from threat behaviours to leading-edge screening technology.

"Remarkable progress has been made in aviation security thanks to innovations in technology and security processes," said Jim Marriott, ICAO's Deputy Director, Security and Facilitation. "But the threat and risk environment is constantly evolving. The air transport system is expected to double in size by 2013, and terrorists innovate in their methods. Under ICAO's leadership, the Symposium provides an ideal opportunity for the international aviation community to focus on innovating to ensure that security measures are appropriate, efficient, and sustainable."

"Collaboration among AVSEC stakeholders is essential to identify emerging threats as well as new technologies and processes to thwart those threats," Marriott added. "ICAO has taken a leadership role on resolving international aviation

security issues, and is the appropriate global forum for sharing concerns and ideas about what might come next."

The SIAS programme will focus on seven key themes:

- **Optimizing technology**
- **Innovation in risk-based screening processes**
- **Improving passengers' experience with security processes**
- **Transferring information through innovative methods**
- **Strengthening partnerships between State authorities and AVSEC manufacturers/vendors**
- **Promoting AVSEC research and development**
- **Empowering people and organizations toward innovation**

TECHNOLOGY INNOVATION

The Symposium will explore how innovative technologies might enhance efficiency and threat detection, as well as examine policy and operational challenges stemming from the combination of equipment, privacy and health concerns, operating concepts, human factors, and airport environments.

Among the technological areas to be addressed are advanced screening equipment, access control systems, surveillance, and the use of security barriers.

"Today's security measures serve to mitigate the priority risks. However, current screening approaches can be uncomfortable and inconvenient, discouraging rather than encouraging people to fly, which is detrimental to aviation's continued growth," said Marriott. "It's time to focus also on the passenger perspective, and improving the passenger experience will require innovation in screening technologies."

Next-generation security checkpoints, for example, might integrate technology with intelligence, behavioural analysis, and passenger data. Data sources may be used to enable a risk assessment of passengers prior to their arrival at the security checkpoint. Biometric data could help verify a passenger's identity and determine the appropriate level of screening. Enhanced screening technology may allow passengers to keep personal electronics and liquids in their bags, as well as eliminate the requirement to remove coats and shoes.



The future starts here

Bringing together major decision makers, the first-ever Symposium on Innovation in Aviation Security has been designed to help States, industry, academic researchers and other AVSEC professionals explore how technology, tools and equipment can help States and industry meet both existing and future aviation security challenges.

Key presentation and panel themes:

- Optimizing technology.
- Innovation in risk-based screening processes.
- Improving passengers' experience with security processes.
- Transferring information through innovative methods.
- Strengthening partnerships between State authorities and AVSEC manufacturers/vendors.
- Promoting AVSEC research and development.
- Empowering people and organizations toward innovation.

If you would like to take advantage of this invaluable networking and learning opportunity and help set the course for the newest security and facilitation solutions, please visit www.icao.int/meetings or contact ICAO's SIAS2014 team at: SIAS2014@icao.int



| ICAO

SECURITY & FACILITATION



ICAO Symposium on Innovation in Aviation Security, 21-23 October 2014 - ICAO Headquarters - Montréal, Canada - www.icao.int/Meetings/SIAS/

Any initiative to deploy new technologies should consider the principles of effectiveness and efficiency as priorities, but should also seek to improve the passenger experience by minimizing or reducing the inconvenience experienced.

SUSTAINABLE SECURITY

The sustainability of aviation security measures emerged as a major issue at the HLCAS in 2012. "We must make aviation security more sustainable," ICAO Secretary General, Raymond Benjamin, stated at the conclusion of the Conference. "This means maintaining or augmenting the already robust measures which have protected aircraft and passengers so effectively, but in a streamlined manner that better recognizes the necessary movement of people and goods."

Delegates recommended adoption of a number of inter-related policy principles and practices to achieve sustainable aviation security, including risk-based security measures, the optimum use of technology and one-stop security arrangements.

States are compelled to prioritize needs against limited resources. A risk-based approach can provide an acceptable level of security by utilizing resources wisely.

"When we focus appropriately on managing risk, security measures tend to be practical, effective, and proportionate to

the threat," Bernard Lim told ICAO Journal in an interview last fall. Lim is Director (International Relations and Security), Singapore Ministry of Transport, and Chairperson of the ICAO AVSEC Panel. "We also need to remember that each State has individual considerations and local circumstances, and resources for enhancing aviation security are not unlimited. For these reasons, outcome-based approaches are highly desirable and should continue to be adopted."

A flexible outcome-based approach, instead of one-size-fits-all prescriptive measures, supports long-term operational and economic sustainability by allowing authorities to address risk in varied ways that do not hamper the growth of civil aviation operations.

STRENGTHENING PARTNERSHIPS AND RESEARCH

The Symposium for Innovation in Aviation Security will help strengthen partnerships between regulators and other State security authorities on the one hand, and aviation security equipment manufacturers and suppliers on the other, by promoting a better understanding of each other's needs and challenges, which vary from State to State. It will serve as a starting point for continual sharing of best practices and future collaboration on innovative solutions for the benefit of the global air transport system.

Another objective of the Symposium is to promote research and development that will foster the implementation of new technology and processes, whether through operational trials or early system deployment.

"The threats of the next 10 years may be unlike any we have seen over the past 10 years," Marriott cautioned. "This Symposium can help the aviation security community establish a clearinghouse for the best ideas, and the most innovative solutions that will provide air travellers greater peace of mind and a more enjoyable travelling experience." ■

ICAO SYMPOSIUM ON INNOVATION IN AVIATION SECURITY

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ELECTRO-MAGNETIC ADVANCES SHOW POTENTIAL FOR IMPROVED NON-METALLIC CARGO SCREENING

Air transport cargo security is benefiting from a new electromagnetic detection solution that could significantly improve the screening of non-metallic commercial cargo such as produce, seafood, meats, printed materials, flowers and apparel.

Electro-Magnetic Inspection Scanner or 'EMIS' technology is certified (TSA and EU-ECAC) to accurately screen packages or pallets using a harmless, low intensity electromagnetic field to ensure there are no explosive devices hidden within. This method of inspection does not require visual interpretation of an image, unlike typical x-ray scanners, and threats can be identified throughout the entire stack of cargo, thereby minimizing operator interaction with the goods.

Screening staff would additionally no longer need to disassemble the pallet to inspect each individual package, decreasing the work dedicated to each shipment and greatly reducing inspection time.

BENEFITS TO CARGO THROUGHPUT

The certified EMIS solutions would enable freight forwarders and shippers to pre-screen cargo, thus minimizing potential bottlenecks at the airport. Manufacturers, warehouse facilities, distribution centers, third party logistics providers, indirect air carriers, airport cargo handlers, and independent cargo screening facilities could all potentially derive benefit from EMIS applications.

These benefits would also include the satisfaction of a number of specific security program requirements, for example (EC) No. 272/2009 dated 02.04.2009 and its following amendment dated 09.04.2010, as well as the TSA Certified Cargo Screening Program (CCSP).

"Since implementing this technology, IGS has been able to keep up with export growth without losing valuable time on screening procedures," highlighted Guðjón Skúlason, Director of Icelandair Ground Services (IGS). "The equipment is reliable and very easy to use and greatly assists us in complying with the security requirements for shipments heading to the United States and Europe."

A range of models is currently available from respective manufacturers depending on end-user screening needs, be they small packages, large, palletized cargo, or everything in between.

EXPECTED EMIS BENEFITS:

- Fast, real-time analysis
- Automatic detection with no nuisance alarms
- No dedicated operator needed for use
- Completely solid-state construction (no periodic maintenance or calibration required)
- Complete data logging and traceability
- Safe for operators and screened cargo (no ionizing radiation)




Photo courtesy CEIA

A larger-scale EMIS system at work. Related solutions promise to decrease associated shipment-by-shipment hands-on requirements and greatly reduce inspection times.



Extinguishment of fire using ICAO performance level C foam at the FAA test centre at Tyndall Air Force Base, Florida, USA.

PROMISING ADVANCES IN FIREFIGHTING FOAM

 Amendment 11 to the *International Standards and Recommended Practices (SARPs)*, Annex 14, Volume I, *Aerodrome Design and Operations*, which became applicable on 14 November 2013, includes provisions relating to the use of a new type of principal extinguishing agents for aircraft rescue and firefighting (RFF) at aerodromes (i.e. the performance level C foam).

Previous specifications concerning principal extinguishing agents were developed based on the compounds used in the foams. These included protein foam, aqueous film forming foam, fluoroprotein foam, film forming fluoroprotein foam, and synthetic foam, categorized into foams meeting the minimum performance requirements stipulated as performance levels A and B. The advent of newer and larger aircraft, often carrying larger fuel loads and growing passenger numbers, made it necessary for ICAO to look into newer generations of firefighting foams that could be effectively used to contain the risk of larger fires from widebody aircraft.

The ICAO Rescue and Firefighting Working Group (RFFWG) then went to work identifying a new type of foam, developing the appropriate specifications, including test protocols which were established via a very stringent process and had been peer-reviewed by a dedicated subgroup of the RFFWG. The new test protocol for



The new performance level C foam is more efficient, requiring a lower application rate used in the computation of quantities of water for foam production. This ultimately translates into lesser quantities required and ultimately cost savings for end users.

the performance level C foam is considered to be a refinement of the old protocol, which had been in place for many years. Laboratory testing was conducted with a third-party testing agency in one State before finally proceeding to large-scale field testing on a pool fuel fire in early 2010 at the test facility of another State.

The results of the tests were very promising and eventually presented to international conferences and seminars with RFF professionals. In a working paper presented to an ICAO RFFWG meeting, representatives from airports expressed a strong interest in the new type of foam. A large panel of manufacturers and testing organizations had also participated in the overall research and refinement of the test protocol. Eventually the proposal for a new performance level foam was circulated for comments, as part of the due consultation process, to all Contracting States of ICAO, as well as recognized international organizations.

Traditional performance level A and B foams require application rates of 8.2L/min/m² and 5.5L/min/m², while the level C foam requires only 3.75L/min/m² for foam production. The application rates are considered to be the minimum rates at which the control of the fire can be achieved within a very stringent time of one minute. Using the example of an Airbus A380 which belongs to the RFF category 10, a performance level B foam requires 32,300L of water from which effective firefighting foams can be produced. A performance level C foam, on the other hand, requires only 22,800L of water and is therefore seen to be more efficient and ultimately translates into cost savings for end users. ■

NEWS IN BRIEF



TWO ATC CENTRES OPEN IN DOMINICAN REPUBLIC

The Dominican Republic officially opened two state-of-the-art air traffic control centres at the Norge Botello aeronautical complex in Santo Domingo and in Punta Cana in March. The centres feature up to 16 positions for air traffic control, and capacity to receive 12 Mode S RADAR antennae simultaneously, with all its associated systems, such as communications, data link, flight data processor, etc.



At the centre opening, left to right, are Aristides Fernández Zucco, Executive Director of the Airport Department; Dr. Alejandro Herrera Rodríguez, Director General, Dominican Civil Aviation Institute (IDAC); Mrs. Loretta Martin, Regional Director, ICAO NACC Office; and the President of the Dominican Republic, Danilo Medina.

ICAO, EASA ACTION ON LOCATOR BEACONS

ICAO recently adopted new guidance on underwater locator beacons (ULBs) which will come into force in 2018. ICAO's Flight Recorder Panel is continuing to review better ways of locating crash sites, including deployable flight recorders and the triggered transmission of flight data.

The European Aviation Safety Agency (EASA) also announced new proposals for flight recorders and underwater locating devices which would improve the chances of recovering an aircraft and its flight recorders in the event of an accident. The new EASA requirements include the extension of the transmission time of underwater locating devices (ULD) fitted on flight recorders from 30 days to 90 days.

EASA also proposes to equip large aeroplanes overflying oceans with a new type of ULD that have longer locating range than the current flight recorders ULDs. Alternatively, aircraft may be equipped with a means to determine the location of an accident within six nautical miles accuracy. In addition, the minimum recording duration of cockpit voice recorders installed on new large aeroplanes should be increased to 20 hours from two hours today.

Patrick Ky, EASA executive director said: "The tragic flight of Malaysia Airlines MH370 demonstrates that safety can never be taken for granted. The proposed changes are expected to increase safety by facilitating the recovery of information by safety investigation authorities."

DGP RECOMMENDS LITHIUM METAL BATTERY BAN

The ICAO Dangerous Goods Panel (DGP) working group has recommended a ban on transporting lithium metal batteries shipped aboard passenger-carrying aircraft, effective January 1, 2015. The decision of the DGP requires approval of the Air Navigation Commission (ANC) and the ICAO Council before going into effect.

The DGP recommendation means that Lithium Metal batteries would need to be shipped by all-cargo aircraft or by ground transport. When installed in or shipped with equipment, Lithium metal batteries will still be permitted on passenger aircraft.

The DGP working group stated, "Continuing to permit their transport on passenger-carrying aircraft... should not be considered an acceptable mitigation strategy. The transport of lithium metal batteries on passenger aircraft poses an unacceptable risk under the existing circumstances, on the basis that the likelihood of an event occurring is remote, but the severity of the consequence of the event would be catastrophic."

Lithium Metal (UN 3090) batteries are considered to be more volatile than Lithium Ion (UN 3480) batteries, exhibiting a burn temperature of about 1450 degrees Celsius. The fire suppressant used aboard aircraft, Halon, has proven ineffective against lithium metal battery fires. Each battery type has different packaging instructions featuring unique requirements which must be complied with.

The background scenario for the ICAO DGP decision was a multidisciplinary meeting hosted by the FAA'S William J. Hughes Technical Centre in February. Using a donated Boeing 727 cargo aircraft and 4,800 lithium metal 123A cell batteries, the FAA started a fire, which demonstrated that:

- The fire in the class C lower cargo hold could not be controlled with Halon 1301,
- The test produced temperatures in the cargo hold which exceeded the certification requirements for cargo liners and caused smoke propagation into the flight deck.

ICAO DGP will meet again in November this year, discussing how to deal with lithium metal batteries aboard all-cargo aircraft.

GULF AVIATION ACADEMY RECEIVES ASTC CERTIFICATION

The Gulf Aviation Academy (GAA) in Bahrain has been awarded the Aviation Security Training Centre (ASTC) certification from ICAO.

Captain Dhaffer Al Abbasi, GAA CEO, stated: "Introducing Gulf Aviation Academy as the 28th ASTC center in the world is further proof of GAA's capabilities in terms of providing accredited training in all facets of the aviation field. With this accreditation, GAA has further cemented its reputation in delivering excellence in terms of training coupled by enhanced international standards to ensure that the aviation industry in the region and more specifically the Kingdom of Bahrain is managed by high-caliber personnel."

The inauguration took place at GAA's Simulator Building in Muharraq. Attending the event was the Secretary General of ICAO, Raymond Benjamin; Major General Tariq Al Hassan, Chief of Public Security, Ministry of Interior; Ahmed Nemat, Acting Undersecretary at the Ministry of Transportation Civil Aviation Affairs; Maher Salman Al Musallam, Deputy CEO Gulf Air; Mohamed Yusuf Al Binfalah, Chief Executive Officer of Bahrain Airport Company; Salman Al Mahmeed, Acting Chief Executive Officer of Bahrain Airport Services; Peter Grohmann, Resident Coordinator of the United Nations; and colleagues from the aviation security departments at the airport.

Also representing the academy were Captain Ishaq Al Kooheji, GAA's Chairman, and other board members.

With the certification, GAA will be able to conduct ICAO-approved programmes for airport security personnel and other airport stakeholders. GAA's vision is to be the region's centre of comprehensive aviation training. The academy has already commenced several training courses in coordination with Bahrain Civil Aviation Affairs; other local clients will be the Ministry of Interior, Bahrain Airport Company, and Bahrain Customs.

GAA is also seeking accreditation as an ICAO Air Traffic Control Training Centre. The Academy commenced operations in early 2010. GAA's Simulator Centre has seven simulator bays with the capacity to train thousands of pilots annually.





ICAO TECH ASSISTANCE FOR ETHIOPIA AIRPORTS

ICAO will provide technical assistance to airport development projects in Ethiopia, Secretary General Raymond Benjamin assured Dr. Mulatu Teshome, president of the African nation, in a two-day visit to Addis Ababa in May. The assistance will relate to the US\$250 million passenger terminal expansion of the Addis Ababa Bole International Airport and the "mega hub" international airport which the Ethiopian Airports Enterprise is planning to build outside of the capital. Three locations have been identified for the mega hub project – Modjo, Dukem and Teji towns.

Benjamin promised to send a technical team to Ethiopia soon, and said, "Based on the recommendations of the technical team we will sign a technical cooperation agreement."

Accompanied by Meshesha Belayneh, regional director of ICAO East and South Africa, and Tefera Belayneh, Ethiopia's representative in ICAO, Benjamin visited the Ethiopian Civil Aviation Authority (ECAA,) the Ethiopian Airports Enterprise (EAE), and Ethiopian Airlines. Benjamin visited ECAA's training centre, a candidate for ICAO's "Trainer Plus."

Director General of ECAA, Colonel Wossenyeleh Hunegnaw, said that ECAA was closely working with ICAO. "We are working hard to ensure safe and reliable air transport in Ethiopia. We are training our professionals and procuring and installing radar and ADS-B equipment. And we are getting the support of ICAO."



TALLEST ATC TOWER CERTIFIED IN KUALA LUMPUR



ICAO has verified that the new Kuala Lumpur International Airport in Sepang, Malaysia, known as KLIA2, is structurally in compliance with its requirements and safety standards. A Certificate of Completion and Compliance (CCC), which certifies the airport as fit for public use, was presented to the airport operator, Malaysia Airports Holdings Bhd (MAHB), on April 18.

The new terminal opened its doors to the public in May.

The Air Traffic Control Tower (ATCT) for KLIA2, called Tower West, is recognized by the Guinness World Record as the tallest in the world, standing at 141.9 metres.

SG RAYMOND BENJAMIN TOURS TANZANIA



ICAO Secretary General, Raymond Benjamin, toured Tanzania in May, viewing aviation infrastructure developments, and told government officials there that the UN organization is determined to ensure that safety and security of air transport is enhanced in the African nation. Benjamin was welcomed by Transport Minister, Dr Harrison

Mwakyembe, Tanzania Civil Aviation Authority (TCAA) Acting Director Charles Chacha, and others.

The visit was part of follow-up efforts with contracting States in meeting their obligations under the Chicago Convention for the safe operations of international civil aviation.

The ICAO leader held discussions with senior government officials from the Ministry of Transport, Ministry of Foreign Affairs and International Cooperation, and the Ministry of Infrastructure and Communication of Zanzibar and aviation stakeholders. He also met with President Jakaya Kikwete.



Resolving the challenges of aviation growth through technical cooperation and assistance.

Focused around the theme of *Building Cooperation for the Future of Civil Aviation: Innovation, Growth, and Technical Co-operation*, ICAO's first-ever **Global Aviation Cooperation Symposium** will provide a central platform for discussions of key issues, the exchange of information and views on latest trends and innovations, and the sharing of best practices supporting a safe and efficient future for global air transport.

This event will provide governments, airport operators, air navigation service providers and other industry stakeholders with a unique opportunity to obtain in-depth knowledge of ICAO guidance, as well as the role and resources of its Technical Co-operation Programme.

For more information, please contact GACS@icao.int or visit: www.icao.int/GACS



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