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INTERNATIONAL CIVIL AVIATION ORGANIZATION

Safe, Secure, Sustainable

Civil Aviation Makes Historic Strides at ICAO's 37th Triennial Assembly

Also in this issue:
ICAO/McGill Assembly Pre-conference Review • Model Flight Plan Update
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Vol. 65, No. 6

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WATCH FOR NGAP PART II IN JOURNAL ISSUE 01-2011

Please note that Part II of the special article series reporting on the presentations and results of ICAO's 2010 Next Generation Aviation Professionals Symposium will be featured in *ICAO Journal* Vol. 66, No. 1, 2011, which will be distributed in February 2011.

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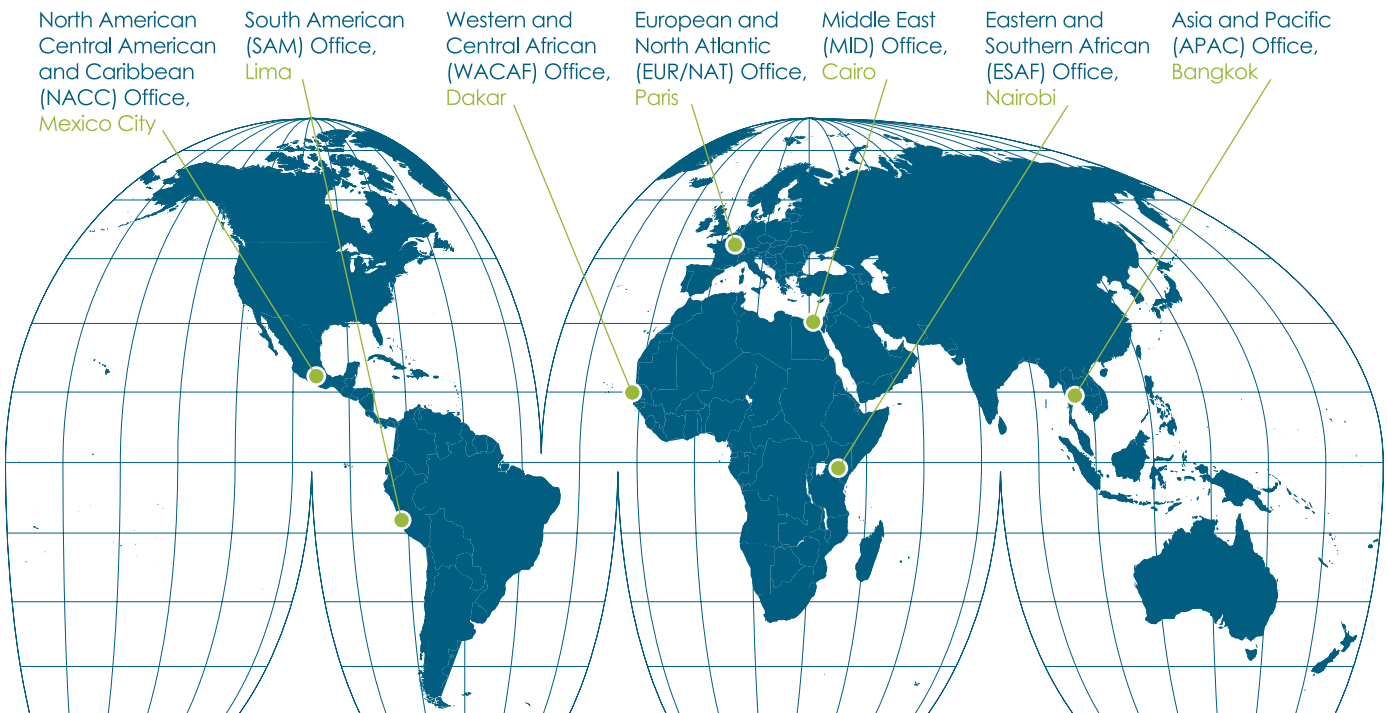
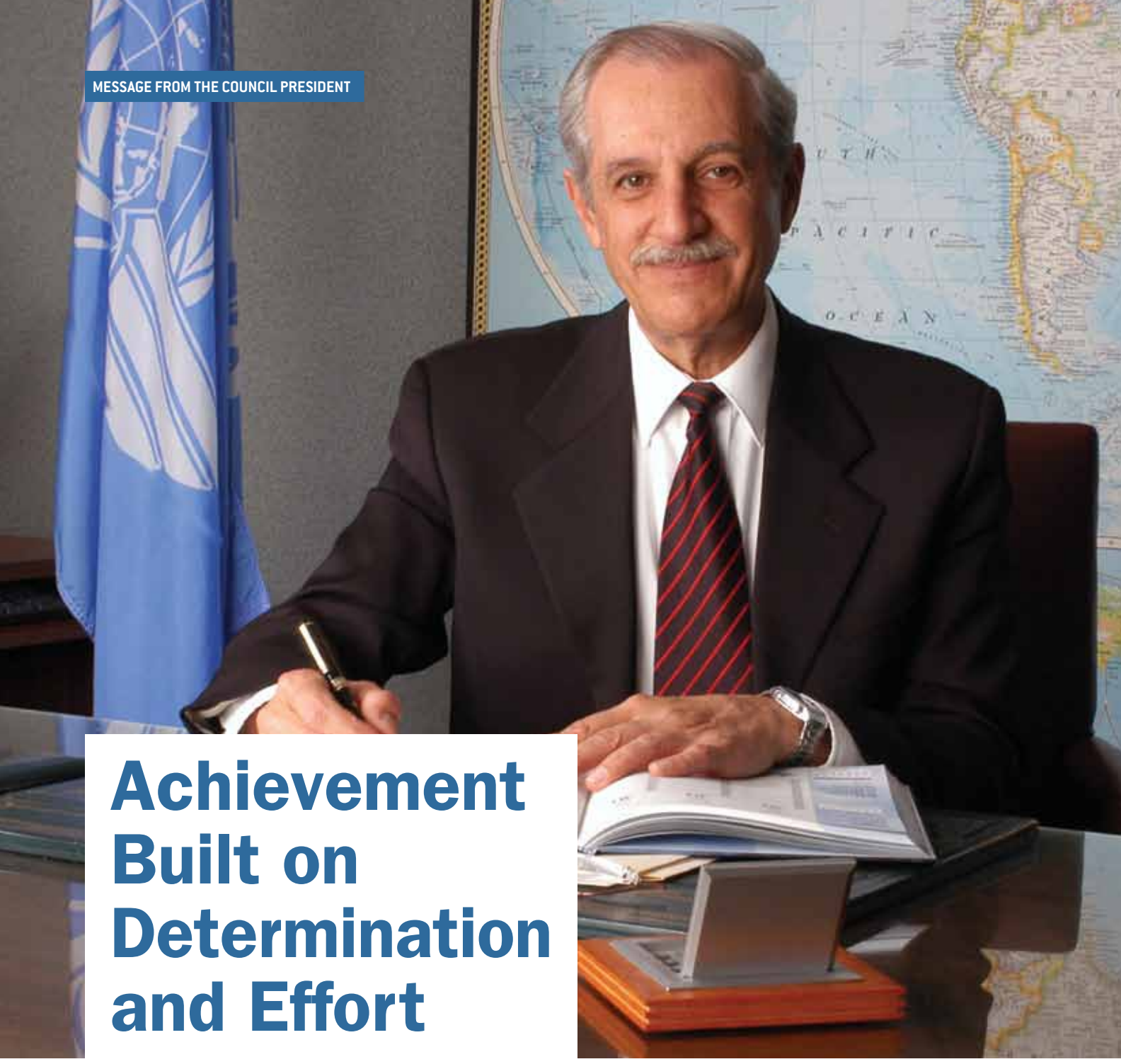
ICAO's Global Presence



Leadership and Vision in Global Civil Aviation



Achievement Built on Determination and Effort

The 37th Session of the ICAO Assembly not only focused attention on the aviation challenges and expectations of the 190 Member States of the Organization and the air transport industry, it unquestionably bolstered our collective resolve to meet them together in a proactive and determined manner.

As good as safety levels are, there is still much room for improvement. Deadly terrorist attacks are still aimed at aviation targets. Our planet faces unprecedented environmental challenges. In that context, and given that evolving technologies and innovations are now allowing States and stakeholders to cooperate to a degree not before possible, the Assembly held out enormous potential for achievement.

Appropriately, we went into the Assembly under the banner of "ICAO: Uniting Aviation on Safety, Security and the Environment". These represent ICAO's—and the sector's—guiding strategic priorities.

The past several years have witnessed a fundamental shift in our approach to safety. One striking example is the more effective and widespread sharing of safety information

among regulators and industry. This helps to better identify existing and emerging risks, making it possible to take action before issues result in accidents.

I want here to publicly commend, once again, the United States Department of Transportation, the European Union and the International Air Transport Association, for having signed with ICAO a ground breaking Memorandum of Understanding (MOU) for the creation of a new Global Safety Information Exchange. This MOU was signed during the Assembly and is highly symbolic of what can be accomplished when we want to make things happen.

Another safety turning point during the Assembly was the endorsement of ICAO's plan to establish a multi-disciplinary approach to address the critical issue of runway safety, currently the number one threat to passengers. Events are being planned to quickly move forward the planning and implementation of new measures in this area.

The adoption of a Declaration on Aviation Security was another key objective going into the Assembly. Adopted unanimously, the Declaration sends a very strong message regarding the broader level of State agreement and commitment in strengthening the security net around the world.

Virtually on the heels of this landmark agreement, news of further targeting of the aviation system by terrorists once again came to light. This and similar events, such as the December 2009 bombing attempt aboard a commercial flight, help to coalesce even more support around reinforced aviation security objectives. We must continually remind ourselves that aviation security is a global problem that requires global solutions.

On the environmental front, we may very well look back at the three-year period since our 2007 Assembly as a water-shed moment in setting the stage for decisions to tackle one of the greatest and long-term challenges ever faced by our global society.

At the Assembly, States agreed on a host of measures, ranging from a medium-term goal of stabilizing CO_2 emissions from 2020, a two percent annual fuel efficiency improvement up to 2050, and a CO_2 standard for aircraft by 2013. These represent solid benchmarks and a first for any international sector.

States and industry have also agreed to develop an international framework for Market-based Measures (MBMs) to address aviation-related Greenhouse Gas (GHG) emissions, and to remain vigilant in their support of developing States to ensure truly global implementation of all associated programmes and Standards. Any of these achievements on their own would have been laudable in the present regulatory climate; taken together they are a truly remarkable testament to what many have called "historic" international consensus and accomplishment.

Yes, international cooperation can accomplish wonders. Looking back, it may have been prophetic that we signed strategic Memoranda of Cooperation on the eve of the Assembly with several regional organizations and aviation bodies. These agreements will facilitate the consistent implementation and harmonization of ICAO's internationally-recognized Standards and Recommended Practices (SARPs) across its three strategic objectives.

As you read through this issue about these and many more achievements of the 37th Session of the Assembly, I invite you to consider that they were all built on the countless efforts demonstrated by the aviation community since the previous Assembly in 2007.

Our recent accomplishments have been without exception the culmination of tremendous dedication and commitment; the same ingredients that will be necessary in addressing the challenges that now lie ahead. ■

"Any of these achievements on their own would have been laudable in the present regulatory climate; taken together they are a truly remarkable testament to what many have called "historic" international consensus and accomplishment."

Historic Achievements

The 37th ICAO General Assembly, held from 28 September through 8 October 2010, was a landmark global aviation event consolidating remarkable consensus on air transport's most pressing international challenges and priorities.

Entering into the event under its new banner of *Uniting Aviation on Safety, Security and Environment*, the Organization and Delegates from its 190 Member States produced substantial new agreements and declarations in all three of these areas of strategic importance to air transport stakeholders. The lastest Assembly reaffirmed ICAO's important leadership role and aviation's unique ability to solidify cooperative global consensus and advance economic and social prosperity in all corners of the world.

The 37th triennial session of the ICAO Assembly achieved important and essential advancements in aviation safety and what have been termed "historic" achievements in the areas of climate change and aviation security consensus.

Solidifying its global influence, the Organization also signed numerous international agreements during the meeting, including a number of cooperative arrangements with regional civil aviation organizations and other bodies. These developments will help to assure even greater levels of safety performance in what is already the safest and most secure mode of mass transport in the world.

"Air transport is critical to our global society," reaffirmed Roberto Kobeh González, President of the Council of ICAO. "It represents some eight percent of the world's gross domestic product and is an economic lifeline for many developing countries. Regulators, working in close cooperation with industry, have an important responsibility to ensure that passengers and shippers can depend on receiving the most efficient air transport services available."

Safety

The Assembly endorsed a more proactive safety strategy built around the use of systems that will serve to improve the sharing of critical safety information among governments and industry stakeholders. It was acknowledged and agreed at the meeting that an increased availability of information, in conjunction with a transparent process, improves the ability of respective stakeholders to better analyze and predict safety risks and to consider preventative actions before issues result in accidents. Acting proactively through use of leading safety indicators can help to significantly reduce accident rates in all regions of the world.

Global Safety Information Exchange

In a demonstration of support for this new strategy, ICAO signed a Memorandum of Understanding during the Assembly with the United States Department of Transportation (US DoT), the European Union (EU), and the International Air Transport Association (IATA), prescribing the creation of a Global Safety Information Exchange (GSIE). ICAO will coordinate the collection, analysis and exchange of aviation safety information among Exchange Members as well as its dissemination to the global aviation community.

"The more effective and widespread sharing of safety information by regulators and industry can help to better identify existing and emerging risks in air transport operations, making it possible to take action before safety issues result in accidents," said Raymond Benjamin, ICAO Secretary General, following the signing of a Memorandum of Understanding by the four parties on establishing the GSIE.

While all four bodies currently gather and analyze their own safety information, notably through accident reports and safety audits, this information is not readily accessible to the other parties or to other aviation stakeholders.

The new GSIE framework will identify the information that will be exchanged and establish procedures for sharing the information multilaterally. This will be done in the most efficient and secure manner possible, taking into consideration existing confidentiality legislation and agreements. In addition, criteria will be established to allow additional parties to join the GSIE.

The Assembly also re-affirmed the Safety Framework recently adopted by ICAO. This will allow the Organization to continuously strive to achieve the safest civil air transport system possible, through the following activities:

ICAO Secretary General Raymond Benjamin (second from left) and Council President Roberto Kobeh González (third from left) preside over the signing ceremony for the MOU prescribing the creation of a new Global Safety Information Exchange. Present for the signing were U.S. Transportation Secretary Ray LaHood (far left), European Commission VP and Commissioner for Transport, Siim Kallas (second from right), and IATA DG Giovanni Bisignani (far right).

- Enhancing safety through the development of international Standards.
- Analysis of hazards and related risk factors.
- Monitoring of key safety trends and indicators.
- Implementation of safety programmes to address safety issues.

Standardization

During the Assembly, current and future standardization topics addressing a wide range of safety issues were endorsed.

Runway Safety

Realizing that the majority of accidents and serious incidents occur during the take-off and landing phases of flight, the Assembly endorsed ICAO's plan to establish a multi-disciplinary approach to address the critical issue of runway safety. This effort will bring together representatives from airlines, airports, Air Navigation Service Providers (ANSPs) and regulatory authorities. In May 2011, the Organization will host a Global Runway Safety Symposium in Montreal, followed by a number of regional work-shops to identify and further resolve runway safety issues.

New State Safety Management Annex

The Assembly supported the development of a new Annex dedicated to safety management processes which would include, among other guidance, the safety management responsibilities of States under the State Safety Programme (SSP). The proposed new Annex will facilitate the implementation and integration of numerous complex and inter-related State safety management functions.

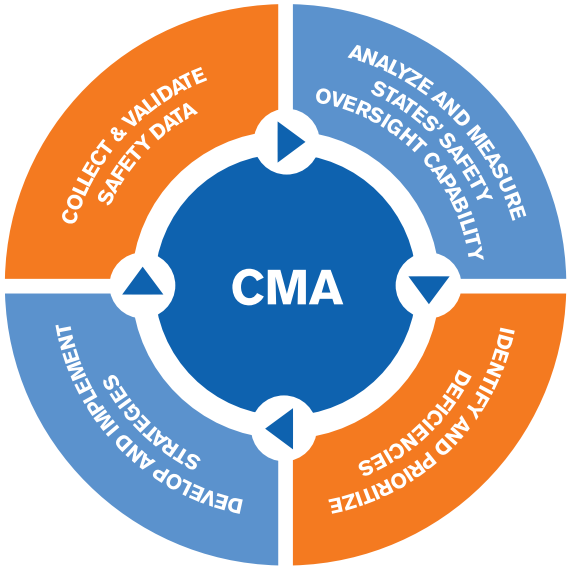
Monitoring

The Assembly supported the successful implementation of the Universal Safety Oversight Audit Programme (USOAP) and directed ICAO to evolve the USOAP to a Continuous Monitoring Approach from 1 January 2011.

Continuous Monitoring Approach (CMA)

The Assembly agreed that CMA will be the basis of future USOAP activities. The CMA will incorporate the analysis of safety risk factors and enable the monitoring of States' safety oversight capabilities on an ongoing basis. A transition period will precede the implementation of this new approach.

A typical CMA data-cycle



Analysis

The Assembly noted that transparency and sharing of safety information are fundamental tenets of a safe air transportation system.

Code of Conduct

The Assembly delegates unanimously supported the development of a Code of Conduct on the sharing of safety information. A task force will be established to address this issue in more detail.

Implementation

The successful implementation of ICAO safety initiatives is dependent upon active collaboration with States, regional organizations, international organizations and learning organizations.

Global Aviation Safety Plan

The Assembly called upon ICAO to implement and keep current the Organization's Global Aviation Safety Plan (GASP) to support relevant strategic safety objectives. The GASP provides for the strategic coordination and prioritization of global safety initiatives based on risk, while establishing meaningful, forward-looking safety targets and milestones to measure improvement and identify areas requiring additional focus.

Regional Aviation Safety Groups

The Assembly instructed ICAO to continue implementing Regional Aviation Safety Groups (RASGs). These bodies have been established in various ICAO Regions to ensure the harmonization and coordination of safety efforts aimed at reducing aviation risks on a regional basis, and to promote the implementation of resulting safety initiatives by all stakeholders.

Voluntary Safety Fund

ICAO has established a Voluntary Safety Fund (SAFE) to support projects not funded through the regular budget. This fund will enable ICAO to act immediately on urgent or unforeseen safety issues.

Security

ICAO's Assembly objectives from the aviation security standpoint included inviting the assembled delegations to: adopt an aviation security Declaration (see sidebar p. 10); approve a new strategy for capacity-building and coordinated assistance; continue their support for ICAO's Universal Security Audit Programme (USAP); endorse the new ICAO Comprehensive Aviation Security Strategy; and update the Resolution on Continuing ICAO Aviation Security Policies.

"Of all these objectives, the Declaration was the most significant," said ICAO Aviation Security Branch Chief, Jim Marriott. "This was due in large part to the strong statement of political will represented by this level of policy statement being achieved, as well as to the extensive work undertaken by ICAO and States in a series of Regional Ministerial Conferences held through 2010 in order to identify the key aviation priorities and consolidate the required consensus in the build-up to the Assembly."

Part of that build-up included an important ICAO diplomatic conference held in Beijing (September 2010), which adopted two international air law instruments for the suppression of unlawful acts relating to civil aviation. These instruments will help to further criminalize both the use of civil aircraft as weapons and the employment of dangerous materials and substances to attack aircraft or other air transport targets on the ground. A more comprehensive review of the Beijing Conference and its results will be highlighted in the first *ICAO Journal* of 2011.

The Assembly built on these Beijing achievements by unanimously adopting the aviation security Declaration.

"The Secretariat was hoping, through all of its aviation security objectives, that States would very strongly re-affirm their commitment to aviation security," Marriott commented. "That consensus came through loud and clear. The unanimous adoption of the Declaration signalled a landmark achievement that will help guide ICAO and Member States' activities to further enhance aviation security. Unanimous adoption sends a very strong message about the level of State agreement and commitment to the aviation security priorities that the Organization has established, the programmes it has put in place, and where ICAO's action needs to be targeted."

Within days of the Declaration's adoption, U.S. President Barack Obama issued a very strong statement commending ICAO for the "historic new

RECORD ATTENDANCE

The 2010 ICAO General Assembly was attended by 1,588 participants from 176 Member States and 40 international organizations involved in civil aviation. This is the most participants since ICAO began holding its triennial Assembly event in 1947.

Member States Resolve to Strengthen Aviation Security

Under ICAO's leadership, aviation security around the world has improved markedly in recent years. Despite this progress, civil aviation is likely to remain a target of terrorism, considering its nature as an essential mode of transport that contributes significantly to worldwide economic and social development.

The Declaration on Aviation Security was unanimously adopted by the 37th Session of the ICAO Assembly in recognition of the continuing threat to civil aviation. It represents a high-level commitment by States to strengthen aviation security worldwide through enhanced international cooperation.

The Declaration is the product of a consensus-building exercise, reflecting the outcome of a series of Ministerial-level regional conferences on aviation security, held with ICAO's participation, during the first half of 2010. While convened in several locations—specifically Mexico City, Tokyo, Abuja and Abu Dhabi—participants in these conferences expressed common concerns. In brief, they underscored the need to enhance information collection and sharing, including the sharing of sensitive threat information, among Member States and between concerned entities within States. They also stressed the need for effective security technology and strong international Standards, as well as the importance of capacity-building assistance for States that experience difficulty in addressing security shortcomings. The Declaration is more than a statement of political will in the sense that it enumerates the key activities considered necessary to address the evolving threat in a proactive way.

Security threats, and in particular acts of terrorism, transcend national boundaries. An effective global response requires commitment as well as action. The Declaration on Aviation Security serves this purpose by emphasizing the collective responsibility for taking appropriate action to address a worldwide problem.

37th Assembly Declaration on Aviation Security

The Assembly, *recognizing* the need to strengthen aviation security worldwide, in light of the continuing threat to civil aviation, including the attempted sabotage of Northwest Airlines flight 253 on 25 December 2009; and *acknowledging* the value of the joint declarations on civil aviation security emanating from regional conferences held with a view to enhancing international cooperation, hereby *urges* Member States to take the following actions to enhance international cooperation to counter threats to civil aviation:

1. Strengthen and promote the effective application of ICAO Standards and Recommended Practices, with particular focus on Annex 17—*Security,* and develop strategies to address current and emerging threats.

2. Strengthen security screening procedures, enhance human factors and utilize modern technologies to detect prohibited articles and support research and development of technology for the detection of explosives, weapons and prohibited articles in order to prevent acts of unlawful interference.

3. Develop enhanced security measures to protect airport facilities and improve in-flight security, with appropriate enhancements in technology and training.

4. Develop and implement strengthened and harmonized measures and best practices for air cargo security, taking into account the need to protect the entire air cargo supply chain.

5. Promote enhanced travel document security and the validation thereof using the ICAO Public Key Directory (PKD) in conjunction with biometric information, and the commitment to report on a regular basis, lost and stolen passports to the INTERPOL Lost and Stolen Travel Documents Database to prevent the use of such travel documents for acts of unlawful interference against civil aviation.

6. Improve Member States' ability to correct deficiencies identified under the Universal Security Audit Programme (USAP) by ensuring the appropriate availability of audit results among Member States, which would enable better targeting of capacity-building and technical assistance efforts.

7. Provide technical assistance to States in need, including funding, capacity building and technology transfer to effectively address security threats to civil aviation, in cooperation with other States, international organizations and industry partners.

8. Promote the increased use of cooperation mechanisms among Member States and with the civil aviation industry, for information exchange on security measures in order to avoid redundancy, where appropriate, and for early detection and dissemination of information on security threats to civil aviation, including through the collection and transmission of advance passenger information (API) and passenger name record (PNR) data, as an aid to security, whilst ensuring the protection of passengers' privacy and civil liberties.

9. Share best practices and information in a range of key areas, such as: screening and inspection techniques, including assessments of advanced screening technology for the detection of weapons and explosives; document security and fraud detection; behaviour detection and threat-based risk analysis; screening of airport employees; the privacy and dignity of persons; and aircraft security.

THE WHITE HOUSE
WASHINGTON

"I commend the International Civil Aviation Organization for adopting yesterday's Declaration on Aviation Security, which forges a historic new foundation for aviation security that will better protect our world from evolving terrorist threats. Following the attempted December 25th terrorist attack, at my direction, the Department of Homeland Security has worked with ICAO, our international partners, and representatives ranging from airline CEOs to aviation industry trade associations in an unprecedented effort to strengthen international aviation security. The extraordinary global collaboration demonstrated by the nearly 190 ICAO countries during the ICAO General Assembly in Montreal has helped to bring about a truly 21st century international aviation security framework that will make air travel safer and more secure than ever before."

– President Barack Obama

"The unanimous adoption of the Declaration signalled a landmark achievement that will help guide ICAO and Member States' activities to further enhance aviation security. Unanimous adoption sends a very strong message about the level of State agreement and commitment to the aviation security priorities that the Organization has established, the programmes it has put in place, and where ICAO's action needs to be targeted."

foundation for aviation security" represented by the Declaration and the "extraordinary global collaboration" demonstrated by ICAO's 190 Member States. A full copy of the Obama statement can be found on page 11.

Through its aviation security deliberations, the Assembly put its full support behind a new and more comprehensive ICAO aviation security strategy. Highlights of the Organization's priorities moving forward include identifying and preventing new forms of attack before they occur, streamlining security checks so that they remain effective but are not duplicated unnecessarily, and improving the capabilities of all States to implement and oversee effective aviation security measures.

Historic Agreement on Climate Change

Re-affirming its leadership role, the 2010 ICAO Assembly adopted a comprehensive Resolution (A37-19) to limit or reduce the impact of aviation greenhouse gas emissions on the global climate. This new agreement provides a roadmap for action covering the next triennium and beyond for all of the 190 Member States of the Organization.

With the agreement reached at the Assembly, international aviation has become the first transport sector with a shared global commitment to the environmental goals of increasing fuel efficiency and stabilizing its global CO_2 emissions in the medium term. This remarkable accomplishment will be brought to the attention of the 16th Conference of the Parties (COP 16) of the United Nations Framework Convention on Climate Change (UNFCCC) in Mexico (December 2010).

"The Assembly Resolution and related decisions are good examples of how a true spirit of cooperation, something which has characterized global civil aviation since the first aircraft began to bring countries and peoples closer together, can make a substantial contribution to discussions such as those that will shortly be held by the UNFCCC," remarked Kobeh González.

This historic climate agreement builds on a series of achievements since the last ICAO Assembly in 2007, including the High-level Meeting on International Aviation and Climate Change in October 2009 and the Conference on Aviation and Alternative Fuels in November 2009.

"The Assembly Resolution and related decisions are good examples of how a true spirit of cooperation, something which has characterized global civil aviation since the first aircraft began to bring countries and peoples closer together, can make a substantial contribution to discussions such as those that will shortly be held by the UNFCCC."

Key elements of the Resolution on international aviation and climate change include:

1. Further endorsement of the global aspirational goal of two percent annual fuel efficiency improvement up to the year 2050.

2. A medium-term global aspirational goal of stabilizing global CO_2 emissions from international aviation at 2020 levels, and further work to explore the feasibility of a long-term global aspirational goal for international aviation.

3. Development of a global CO_2 Standard for aircraft, aimed for by 2013.

4. Development of a framework for Market-based Measures (MBMs), including further elaboration of the guiding principles adopted by the Assembly and the exploration of a global scheme for international aviation.

5. Development and deployment of sustainable alternative fuels for aviation.

6. Concrete steps to assist States to contribute to aviation's global efforts.

7. *De minimis* provisions to ensure that States with small contributions to global air traffic are not burdened disproportionately.

8. State action plans, covering information on CO_2 emissions reduction activities and assistance needs.

The Assembly also decided that the Council should undertake further work in order to continue to progress on a number of issues contained in Resolution A37-19, where States

NEW COUNCIL ELECTED

Delegates to the ICAO General Assembly elect a new Council each time the triennial event is held. The 36-member Council is the governing body of the Organization and is elected for the full three-year term between each Assembly.

The election process was divided into three parts, with the following States having been elected for the full 2010–2013 term:

PART I

(States of chief importance in air transport)

Australia*	Italy*
Brazil*	Japan*
Canada*	Russian Federation*
China*	United Kingdom*
France*	United States*
Germany*	

PART II

(States which make the largest contribution to the provision of facilities for international civil air navigation)

Argentina*	Mexico*
Belgium	Nigeria*
Colombia	Saudi Arabia*
Denmark	Singapore*
Egypt*	South Africa*
India*	Spain*

PART III

(States ensuring geographic representation)

Burkina Faso	Peru
Cameroon*	Republic of Korea*
Cuba	Slovenia
Guatemala	Swaziland
Malaysia*	Uganda*
Morocco	United Arab Emirates*
Paraguay	

**Indicates re-election*

Dr. Harold O. Demuren, Nigeria's DGCA, served as President of this year's 37th triennial ICAO General Assembly.

expressed concerns, such as the implementation of the medium-term global aspirational goal and MBMs, including the de minimis provision. Some States filed reservations on these aspects.

This Resolution reflects the determination of ICAO's Member States to continue to play a leading role in the global efforts to address climate change. It provides the Organization with an ambitious work programme to identify a global solution toward the sustainable future of international aviation, while taking into account the special needs and circumstances of its individual Member States.

"This agreement demonstrates what can be achieved when parties with divergent and even conflicting views are determined to progress toward results that are in the best interest of an industry as critical to the world economy as global aviation," Mr. Kobeh González commented.

Regional Assistance and Cooperation

On the eve of the Assembly, ICAO concluded Memoranda of Cooperation (MOCs) with two regional organizations—the African Union and the European Union—and four regional civil aviation bodies—the Arab Civil Aviation Commission, the

"In a world increasingly structured around regional or sub-regional economic units, greater collaboration in aviation matters can facilitate access to essential markets which could otherwise not be easily reached. Closer partnerships between ICAO and regional bodies can help make this happen."

2010 EDWARD WARNER AWARD RECIPIENT

The 39th Edward Warner Award, the highest honour in the world of civil aviation, was conferred by the Council of the International Civil Aviation Organization (ICAO) during the 37th Assembly on Dr. Nicolas Mateesco Matte of Romania, in recognition of his eminent contribution to the development, promotion and understanding of air and space law around the world.

The Award was presented by Roberto Kobeh González, President of the ICAO Council, on the opening day of the Organization's triennial Assembly in Montreal. In his remarks, Kobeh González emphasized Dr. Matte's role as a driving force behind the development and prestige of the McGill University Institute of Air and Space Law.

"During his entire professorship, Dr. Matte contributed tirelessly to the growth and financial stability of the McGill Institute, laying the groundwork for what has become a centre of civil law excellence of worldwide reputation," said Kobeh González.

Roberto Kobeh González, President of the ICAO Council, presents the 39th Edward Warner Award to Dr. Nicolas Mateesco Matte of Romania in recognition of his eminent contribution to the development, promotion and understanding of air and space law around the world.

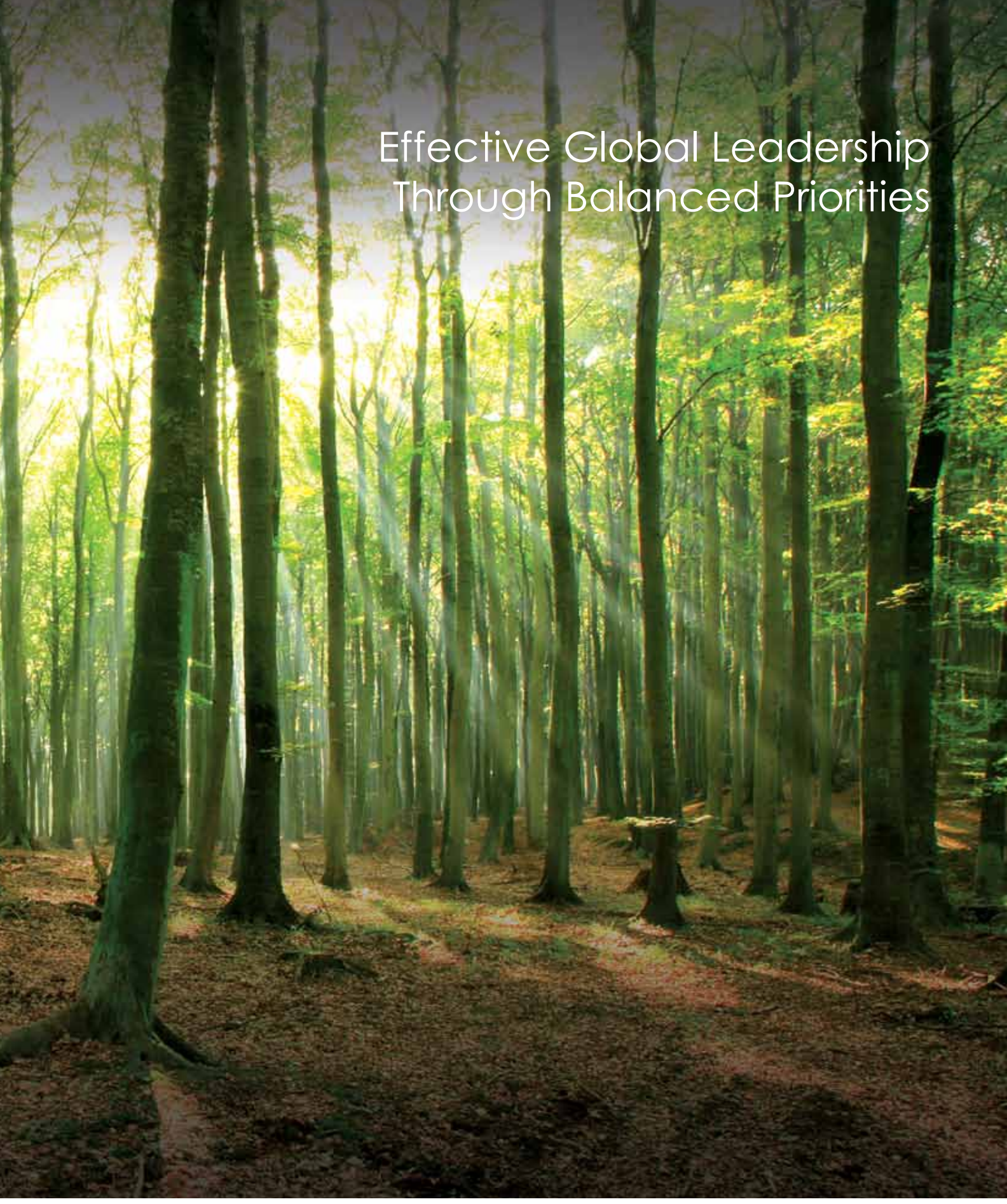
African Civil Aviation Commission, the European Civil Aviation Conference and the Latin American Civil Aviation Commission. The objective is to help reduce aircraft accident rates, improve security in flight and at airports, and promote the overall sustainable development of the air transport industry.

The MOCs create a framework for greater regional cooperation in the technical and policy aspects of international civil aviation. They emphasize the consistent implementation and harmonization of ICAO's internationally-recognized Standards and Recommended Practices (SARPs) related to aviation safety and security, environmental protection, as well as policies for sustainable air transport.

The process includes: improved mechanisms for consultation and cooperation, including electronic information sharing; coordinated programme planning and implementation between ICAO and the regional civil aviation bodies; and joint training and capacity building.

"Greater regional cooperation can improve the efficiency of air transport operations and simultaneously generate economic growth for States and regions alike," noted Kobeh González. "In a world increasingly structured around regional or sub-regional economic units, greater collaboration in aviation matters can facilitate access to essential markets which could otherwise not be easily reached. Closer partnerships between ICAO and regional bodies can help make this happen," he concluded.

In the course of the meeting, 49 States enhanced their relationship with ICAO by working through the Technical Cooperation Bureau for expanding existing agreements, negotiating new agreements and identifying agreements for further development. ■


Effective Global Leadership
Through Balanced Priorities

What Route to $ustainability?

In a special primer for Assembly Delegates and invited guests, ICAO, together with the Institute of Air and Space Law (IASL) of McGill University in Montreal, co-organized a worldwide air transport Conference immediately preceding the 37th Session of the ICAO Assembly this past fall.

Entitled: *What Route to $ustainability?*, the event provided participants with very helpful details and background information that eventually informed some of the more important discussions and proceedings at the Assembly itself. As Narjess Teyssier, ICAO Chief, Economic Analysis and Policy (EAP) Section reports, the special pre-Assembly Panels and Presentations helped to make the 37th triennial Assembly event one of the most successful in the Organization's history.

Narjess Teyssier (far right), ICAO Chief, Economic Analysis and Policy (EAP) Section, leads the Session One panel discussion during the joint ICAO/McGill University Assembly Pre-conference built around the theme of *What Route to $ustainability*. Contributors to the Session One discussions reviewed the significance of the 2008–09 'Great Recession' on the air transport sector. They also established consensus that, while the airline industry creates substantial value, its returns are unevenly distributed within the value chain with most being captured by customers rather than investors.

The joint ICAO/IASL 37th Assembly pre-Conference, built around the theme of: *What Route to $ustainability?*, attracted over 240 participants from around the globe and was sponsored by Bombardier, the International Air Transport Association (IATA), Air Canada, the Civil Air Navigation Services Organisation (CANSO), EUROCONTROL, Embraer, Aéroports de Montréal (ADM) and The World Bank.

Additional event support was provided by Airports Council International (ACI), the Flight Safety Foundation, the International Federation of Airline Pilots' Associations (IFALPA), and the International Coordinating Council of Aerospace Industries Associations (ICCAIA).

The Conference was organized specifically in order to assist Delegates and other 37th Assembly participants in developing more comprehensive viewpoints on some of the complex topics and discussions that were on the table at what eventually became one of the most important triennial Assembly events ever held by ICAO.

A Uniquely Informative Pre-Assembly Event

The ICAO/IASL Conference began with a series of interactive panel discussions examining the recovery strategies used to address the multi-layered challenges airlines are presently confronted with as they seek to solve their lingering cost and revenue crises post the 2008–2009 Great Recession. Subsequent panels dealt with issues primarily reflected in the 37th Assembly lead theme, namely: *ICAO, Uniting Aviation on Safety, Security and Environment*.

In his welcoming remarks, **Prof. Daniel Jutras, Dean, Faculty of Law, McGill University**, described ICAO as serving as the nerve centre of the world air transport industry while McGill/IASL could be seen as its conscience. He depicted the IASL as a catalyst in reflecting the contemporary challenges facing the air transport system today.

One of these challenges consists of sustaining a balance between security and efficiency in the screening of over 2 billion passengers every year. Jutras noted that higher energy costs, as well as related global sustainability aspirations, will require fundamental shifts in air transport operations. He concluded that the extraordinary expansion of air travel has made this world both smaller and more complex.

Raymond Benjamin, Secretary General of ICAO, opened the Conference by concurring with Giovanni Bisignani, Director General of IATA, that the past 18 months have been the most financially difficult in the history of the air transport industry.

Benjamin stressed that ICAO's current strategy to support commercial and other civil aviation activities is based primarily on improving transparency and the effectiveness with which all air transport stakeholders now share the critical data relating to safety and security performance indicators. He noted that there are many sensitivities and concerns surrounding what aspects of this data can be shared, when, and by whom, and that ICAO has proposed a new code of conduct to help ensure that related data is used only for the purpose of improving these two ICAO Strategic Objectives.

Benjamin also stressed the important Environment-related priorities of the Organization. He pointed out that while much has been done to reduce the impact of aviation on the environment, public and media pressure are demanding that much more be done, and at a more rapid rate. He commented on many of the activities, regulatory, technological and operational, which the ICAO and the industry are now employing in a coordinated manner to improve overall System efficiency and provide the win-win benefits relating to safety, security and facilitation, and substantially reduced fuel burn.

These benefits are good for the environment and good for the bottom line, Benjamin noted, not to mention customer service satisfaction. He concluded that another way to formulate the sustainability question could be for the industry to ask itself: *How do we bridge the gap between an extremely demanding present and a highly promising future?*

Main Panel Sessions

The first two panel sessions were devoted to answering the questions regarding how and when the airline industry will recover from the revenue and the cost crises.

The Moderator of Session One, **Narjess Teyssier, ICAO Chief, Economic Analysis and Policy (EAP) Section**, set the scene for further deliberations by reminding participants of the actual and severe extent to which the air transport industry has been impacted by the recent financial and economic crisis. She noted that the 2008–09 oil price and financial crises had cascading cost and revenue implications across all sectors which resulted in a significant reduction in international trade. This, in turn, affected air freight traffic and passenger air travel demand, hurting in particular, premium air transport-related revenues.

Teyssier stressed that, thanks to some disciplined capacity management by airlines, stimulus packages from governments and a limited rebound in the economy, the air transport industry was able to enjoy a recovery in 2010—especially in the cargo and premium markets. She concluded by remarking that challenges will continue for airlines with fuel prices again beginning to rise and that, despite more capacity returning to the market, aircraft utilization still remains low.

Contributors to the following Session One and Two panel discussions agreed that the airline industry creates substantial value, but noted as well that returns are unevenly distributed within the value chain and that most are captured by customers rather than investors.

They also highlighted that the main source of industry financing is debt rather than capital, and that whether or not capital would once again be accessible in the future remained an open question. It was remarked that the air transport industry today is characterized by an increased level of liberalization in world air travel markets, resulting in the proliferation of Low-cost Carriers (LCCs) since the most successful airlines are those which can operate based on low unit costs.

Another point which was strongly stressed during the first two panels was that fuel has recently become the highest cost component in an airline's total cost, ahead of labour. It was

additionally remarked that the costs to maintain infrastructure are also becoming significant for carriers, despite the fact that these may not presently rank high in lists of total airline costs.

Airlines, it was commented, have also been seen to be benefitting from various degrees of alliance strategy in order to improve revenues and costs while further minimizing risk. Generally, while typical corporate mergers can generate higher risks and revenues, code sharing arrangements between airlines involve lowered risks. The challenge, it was highlighted, is for airlines is to find a workable business model where costs are reduced without sacrificing safety, security or environmental challenges.

Consolidations of this nature have been limited globally, however, due to liberalization issues—especially restrictions on foreign ownership and control. Further liberalization of air transport, especially through the development of multilateral frameworks, improved security and facilitation regimes and an adapted environmental approach, is necessary for more sustainable air transport development.

Kenneth Quinn, General Counsel, Flight Safety Foundation and Moderator of Session Two, concluded by reminding participants that the main challenge for regulators is to seek to avoid increasing airline costs while pursuing air transport safety, security and environmental improvements.

In the Sessions Three and Four, dedicated to the protection of the environment, the speakers reviewed current technological and the operational solutions, as well as legal and policy-side remedies. They notably highlighted the life-cycle benefits of alternative fuels, while reminding participants of the air transport industry-wide goal of carbon neutral growth from 2020 onwards and a 50 percent reduction in carbon emissions by 2050.

It was also pointed out that new technologies have been and are continuously being incorporated into aircraft, resulting in significant improvement in their environmental performance over past decades—much more so than any other transport sector.

In addition to these technology improvements, optimization of air traffic operations also holds out great promise in the reduction of aviation-related CO_2 emissions. From a high-level perspective, however, there is a need to keep in mind the relatively small environmental footprint of aviation compared to other transport sectors, such as road transport. In the absence of sufficient reductions of emissions from aviation, duties/taxes/levies would have to be introduced, which could be a simple mechanism with low transaction costs. Such schemes could be introduced quickly if legal barriers could be overcome.

Going forward, the two Session Moderators, **Dr. Charles Schlumberger, Principal Air Transport Specialist, The World Bank,** and **Alejandro Piera, Advisor, United Arab Emirates Delegation on the ICAO Council**, insisted that the challenges for the 37th Assembly would be to set more ambitious goals, agree on a Market-based Measures (MBM) framework, and elaborate on measures to assist developing States with their action plans *(for more on the Assembly ENV results, please see page 12)*.

Among the many high-level figures who contributed to the ICAO/McGill Assembly information sessions, two Keynote Speakers, Gary Scott, President of Commercial Aircraft for Bombardier (pictured above) and Calin Rovinescu, President & CEO, Air Canada, additionally shared their views on the route to sustainability under the present market conditions in the context of ICAO's latest growth projections.

Sessions Five and Six were devoted to security-related issues such as screening and facilitation. The speakers agreed that a systematic monitoring of AVSEC processes should include elements of facilitation. It was noted that AVSEC improvements, if properly integrated (such as has been the case with ICAO's Machine Readable Travel Document (MRTD) programme), can enhance the overall effectiveness of both security and facilitation.

Participants to the Security Panels also discussed how the deployment of body scanners in some airports has resulted in different rules being established across different States. In order to end the current and fragmented situation, it was suggested that the use of scanners must be based on common standards and feature imposed safeguards in order that they might better comply with fundamental privacy rights and health provisions.

The Session Five and Six Moderators, **Yaw Nyampong, Editor, Annals of Air & Space Law, McGill University** and **Jim Marriott, Chief, ICAO Aviation Security (AVSEC) Branch,** stressed recent improvements to air cargo security programmes and how these will help to mitigate risks to passengers while strengthening and harmonizing the international

HIGHLIGHTS

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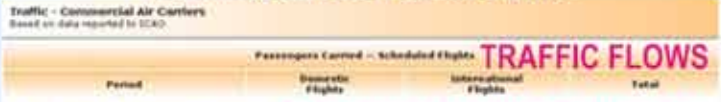

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"The nature of air transport is such that the emphasis can and should be placed on making win-win progress on all fronts simultaneously, whereby improved efficiency of aircraft and air traffic would help lower costs AND reduce aviation's environmental footprint."

air cargo security regime. It was explained that these initiatives will both help the world's economy and promote global efforts against terrorism.

The Moderator of the Session Seven Panel, **Peter Harbison, Chairman, Centre for Asia Pacific Aviation (CAPA)**, gathered all the Moderators of the previous Sessions in order to summarize the most optimal strategies—both for immediate survival and longer-term prosperity.

There was a consensus toward the need to better address the communications and public relations challenges faced by the industry in light of the high profile nature of aviation. This often leads to disproportionately negative perceptions of air transport performance. It was agreed that aviation as a sector should address this communications gap and more effectively highlight its value-proposition (i.e. the strong social and economic benefits directly related to air transport activity).

The closing Panel Session, moderated by **Prof. Paul Stephen Dempsey, Tomlinson Professor of Law and Director of the Institute of Air & Space Law, McGill University**, explored the paths forward. It was established here that, in a liberalized environment, only airlines that could succeed in cutting costs and exploiting the market opportunities would be able to survive, and that the key to sustainable success for airlines was threefold: control costs; explore market opportunities; and control capacity.

Despite lower profit margins of late, it was reaffirmed that airlines have created substantial values which have accrued to general economy, benefitting especially passengers rather than investors. It was suggested that airlines should receive a fairer share of the total value generated by the industry, while access to capital markets was noted as a continuing crucial issue.

It was also noted during the concluding Session that there need not be a contradiction between social welfare—including environmental improvement—and liberalization. The nature of air transport is such that the emphasis can and should be placed on making win-win progress on all fronts simultaneously, whereby improved efficiency of aircraft and air traffic would help lower costs AND reduce aviation's environmental footprint.

All the speakers agreed with **Folasade Odutola, Director, ICAO Air Transport Bureau**, that there could be no disagreement among States, whether developed or developing, on the need for economic growth and environmental protection.

Keynote Speakers

Interspersed between the various Panel Sessions, two Keynote speakers, **Gary Scott, President, Commercial Aircraft, Bombardier** and **Calin Rovinescu, President & CEO, Air Canada**, shared their personal views on the route to sustainability.

Scott reminded participants that aviation is meeting the needs of new businesses and a growing middle class population in the developing world—one whose purchasing power is increasing and thereby fueling further demand for air travel. He also provided some examples of Bombardier products designed to address the sustainability challenge by targeting efficiencies, such as the C-Series with its 20 percent lower fuel burn (compared to in-production aircraft), allowing for substantial reductions in both emissions and noise.

The Air Canada chief remarked on the significant contribution made by aviation to the Canadian economy in particular. Among the main drivers he identified on the road to sustainability were fair and balanced aviation trade agreements and consolidation in air transport industry (whether through mergers and acquisitions or through revenue- or profit-sharing joint ventures).

Rovinescu stressed that airlines have the potential to be one of the leading drivers of the global economy as it emerges from recession and that it could produce multiple benefits in terms of economic returns, passenger safety, national security and a healthier environment.

He concluded that the key is to let airlines flourish without resorting to excessive re-regulation, and to allow them to chart their own route to sustainability—as is the case in many other industries and sectors. ■

Celebrating the Fundamental Importance of Statistics in Aviation

ICAO joined its Member States and other UN Agencies in celebrating the first-ever World Statistics Day on 20 October 2010. The Organization arranged a special aviation statistics Forum celebrating the occasion, which was attended and enjoyed by both air transport statistics users and providers.

As part of its WSD event, ICAO provided Forum attendees with the opportunity to test their statistical knowledge through an on-line quiz devoted to aviation data. The winner received two air tickets to Abu Dhabi, generously offered by Etihad Airways and kindly presented by Captain Aysha Al Hamili at the end of the day's ceremonies.

ICAO held a special aviation statistics Forum to mark the occasion of UN World Statistics Day (WSD) this past October, with special guest presenters providing attendees with unique and practical perspectives via livestream[1] presentations on the importance of verifiable data to all air transport analysis and planning activities.

Thanks to the collective effort of Member States, various air transport industry stakeholders and specialized organizations, ICAO has been a leader in the gathering, processing and disseminating of aviation statistics and data for more than 60 years across all States and regions of the world. The Organization's statistical products provide airlines, airports, Air Navigation Services Providers, regulators and other users with the information required to maintain high-level standards with respect to safety and security, and allows for the monitoring and benchmarking of sustainability indicators.

In his written opening statement to the Organization's WSD Forum, **ICAO Secretary General Raymond Benjamin** invited the audience to: *"Let this World Statistics Day become an annual reminder of the power of numbers to enhance our ability for improving the quality and efficiency of air travel around the world."*

Forum Presenters **Jean Ruiz from IATA** and **Georgina Graham from ACI** confirmed in their respective presentations how, in civil aviation as in most industries, statistics are fundamental to allowing us to learn from the past, manage the present and plan the future. They highlighted the importance of objective and dependable data as air transport defines its path to a more sustainable future.

Aircraft manufacturers meanwhile provided an objective and empirical framework for analyzing trends and forces that

[1] Interested readers can access the WSD livestream presentations via: http://www.icao.int/wsd2010/Docs.htm

impact the development of air transport, noting that these supply critical information for the decision-making process in both government and private sector entities. **Steven Davis-Mendelow of Bombardier** pointed out that aviation statistics, such as those provided by ICAO, provide the basic foundation that allows for the development of any fleet forecast. **Wendy Sowers from Boeing** also reminded Forum attendees that, more generally speaking, data is used at every step of the building process of her company's Current Market Outlook (CMO).

Cheryl Bertoia from COSPAS/SARSAT, a programme which provides timely, accurate and reliable data to help Search and Rescue (SAR) authorities, reiterated the importance of statistics in monitoring and enhancing the quality of SAR services, and in assisting users to ensure full and proper use of the system.

Georgina Graham of ACI provides assembled Forum participants with her organization's view of the importance of sound and verifiable data to aid effective planning and management processes. Both ACI and IATA confirmed, in their respective presentations, how civil aviation statistics are fundamental to allowing us to learn from the past, manage the present and plan for the future.

ICAO has always promoted the systematic collection and usage of reliable, complete and up-to-date statistical data and information as a valuable management tool for civil aviation administrations and industry stakeholders. The framework for ICAO's involvement in these activities was established early on by the Chicago Convention. Since 1948, the ICAO Statistical Division has guided the ICAO Statistics Programme in setting the standards and charting the path for the creation and maintenance of a quality and accessible global air transport statistical system.

On this first ever World Statistics Day Forum, the four ICAO speakers stressed the fact that statistics have proven indispensible for the development of indicators to monitor progress in the realizations of the Organization's three strategic objectives: Safety, Security and Environment.

For example, air travel safety data is analyzed and reported on the ICAO integrated and web-based Safety Trend Analysis and Reporting System, or iSTAR. iSTAR contains detailed accident and incident data, results from ICAO's Universal Safety Oversight Audit Programme (USOAP) and traffic information. Combinations of these safety datasets are displayed on interactive maps via iSTAR and can be shared for the benefit of all stakeholders in order to help identify trends and to allow for more integrated analysis and correlation studies.

In the area of security, ICAO has, since 1970, maintained a database on acts of unlawful interference in civil aviation. This makes it possible to disseminate information on acts of unlawful interference in a more efficient and effective manner and allows the Organization to monitor the overall level of industry security. It also allows ICAO to provide Member States with a more effective understanding of the threats faced by civil aviation.

The need for reliable, timely and substantive data is especially important when dealing with the adverse effects of aviation on the environment, particularly climate change. Air transport Environment stakeholders need this kind of information to establish goals and measure their progress in achieving effective solutions. One case in point in this regard is the comprehensive Resolution recently adopted by the 37th Session of the ICAO Assembly, which established a goal of two percent annual improvement in fuel efficiency up to 2050.

There is no doubt of the critical importance of statistics and data to the performance of the global air transport system and to its constituent parts. For States, strengthening national statistical capacity must remain a top priority. In those situations where developing countries may find themselves at a disadvantage in this respect, lacking the required funds to adequately train staff for collecting and processing data effectively, ICAO remains committed to assisting them appropriately. ■

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A Call for Harmonization

Coming Changes to the ICAO Flight Plan Form

Amendment 1 to the PANS-ATM (Doc 4444), 15th Edition, includes provisions for a new ICAO model Flight Plan (FPL) with associated instructions. The amendment becomes applicable on 15 November 2012.

Although the changes to the flight plan do not represent any major modifications to the present ICAO model FPL form itself, they do introduce several new field entries to provide for the operational use of advanced technologies and capabilities of airborne and ground-based systems in the provision of Air Traffic Management (ATM).

The benefits to be derived from employing these new capabilities onboard aircraft will be remarkable in terms of improving the safety, efficiency and environmental performance levels of the ATM system. It must also be recognized, however, that the consequences of an uncoordinated or an incomplete implementation of the new provisions could increase burdens on users—especially airlines.

Underlying the compatibility aspects of the new ICAO model Flight Plan (FPL) format is the risk that some Air Navigation Service Provider (ANSP) systems could generate FPL REJECT messages in circumstances where the ANSP system is still based on older incompatible formats. As this ANSP acknowledgement or rejection of an FPL is often delivered shortly before departure, the response times are critical and could result in flight delays.

Civil Aviation Authorities (CAAs) of the ICAO Member States are following the guidance provided by ICAO in order to prepare implementation plans sufficiently in advance of the new FPL applicability date. In order to identify and resolve any unforeseen operational issues, readiness for the 15 November 2012 deadline is critical for both ANSP's and operators alike.

ICAO has also developed a Flight Plan Implementation Tracking System (FITS) to aid with associated implementation harmonization. FITS is an intuitively-designed Web site whereby the implementation status of the new provisions in all Flight Information Regions (FIRs) can be easily viewed and tracked. It was deployed by ICAO HQ and the Regional Offices as a single platform in order to ensure globally-coordinated functionality and results.

In the case of the respective ANSPs, changes of varying degrees to their Flight Data Processing System (FDPS) will be required. These changes could be hardware- or software-based (or both), which in turn requires earmarking the necessary resources to effect these changes in a timely manner.

In order to facilitate a smooth transition and validation process, ICAO is encouraging States to complete their implementations earlier than the 15 November 2012 applicability date, with a caveat that they be compatible with present provisions during the transition period. Likewise, the only format that should be supported past the 15 November 2012 applicability date would be the 'NEW' format.

Operator Perspective

For users/operators, similar changes in FPL software will be required involving third-party vendors. One of the major user groups—the airlines represented by IATA—is presently suggesting that a 'big-bang' or one-time approach to this global switch-over be organized for the applicability date itself. The reasoning provided is that there are no provisions under any of the current airline software specifications to support both the 'new' and the 'present' formats simultaneously, and the effort and costs to do so would be considerable.

Additionally, the sheer logistics of monitoring each State implementation on a global basis, especially for international airline operations, would be very challenging and resource-consuming. Many airlines today operate flight dispatch or planning offices that are remote from the airport of departure, further increasing the complexity of the monitoring effort.

In an effort to ensure a smooth and harmonized implementation of the new provisions, Task Forces have been established accordingly in all of the ICAO Regions. Within these forums, select groups of experts are presently analyzing the best way to implement these new provisions, considering regional and national needs/capabilities of current system functionality—especially automation issues.

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A Clear Path for States and ANSPs

In light of the magnitude of the impact of these FPL changes and the benefits that they promise for the aviation community as a whole, a harmonized approach to implementation by States, industry and ANSPs on (or before) the applicability date will be critical. This will allow for the updating of the FPL form and improving ATM service levels to be compatible with safety and efficiency priorities.

To this end, ICAO strongly encourages all States and ANSP's to use this opportunity to deliver many of the outstanding elements of the current Global Air Navigation Plan. Global Plan Initiative Five (GPI-5), for example, will leverage the benefits of Performance-based Navigation (PBN) in all phases of flight to result in tangible safety benefits and reductions in emissions. Likewise, GPI-17 will recognize satellite-based data link capabilities both ground and airborne to improve the overall safety and continuity of direct routine air/ground communications.

This is a challenge but also an opportunity for States, industry and ANSPs to collaborate in order to ensure a successful implementation by (or before) the applicability date. The implementation of the new provisions in a harmonized way is a high priority objective for the ICAO Air Navigation Bureau (ANB), delivering ATM enhancements through the use of new and existing capabilities with associated benefits for the entire aviation community. ■

Liberia Civil Aviation Authority

Vacancy Announcement

Job Title: Managing Director
Duty Station: Roberts International Airport, Margibi County, RL
Application Deadline: 17 January 2011

The Government of Liberia, through the Liberia Civil Aviation Authority, urgently requires for immediate employment a qualified and experienced applicant, preferably a member of the "Association of Retired Airport Managers", whose services are needed to professionally run the Roberts International Airport in Liberia.

Criteria:

- Capable of administering all commercial properties and maximize the effective use of tenant resources to RIA.
- Be able to operate in an autonomous atmosphere; develop and maintain strong relationships with RIA's internal and external business partners.
- Be able to effectively manage to increase productivity, enhance and maintain ICAO SARPs.
- Be up-to-date on applicable ICAO Annexes (specifically Annexes 14 and 17) and Standards and Recommended Practices and be familiar with TSA standards.
- Be able to maximize profits and deliver results.
- Must have had at least 20 years of experience in the running of a recognized international airport.
- Be capable of attracting investment potential for the modernization of the airport.
- Capable of Planning airport business strategies, master airlines leases and revenue development.
- Be an ICAO or FAA-certified management professional.
- Must pass CHBC progressively in the last 10 years.

Critical Skills:

Strong team building and staff development skills. Action and results oriented. Effective working relationships with senior management and employees at all levels, tenants and the general public. Solution-based thinking and an equal-opportunity employer. Manage technical staff on security and safety issues.

Minimum Qualifications:

Bachelor's degree with major management in business of Finance.
5 successive years of responsible experience in airport management.

Compensation:

Salary will be commensurate with applicant's work experience.

How to Apply:

A cover letter with CV and supporting documents must be delivered or emailed to the below address:

Director General
Liberia Civil Aviation Authority
P.O. Box 68, Margibi County
Liberia
Email: rwilliams.dirgen@liberiacaa.com
eFax: + 1(404) 581-5076

Kobeh González Re-elected to Second Three-year Term

Roberto Kobeh González was re-elected by acclamation on 15 November 2010, for a second three-year term, as President of the ICAO Council.

"Our priority for the coming triennium is the implementation of the comprehensive and groundbreaking initiatives adopted recently by the 37th Session of the ICAO Assembly, all designed to further improve the safety, the security and the environmental sustainability of international civil aviation," said Mr. Kobeh González in his acceptance remarks.

"We will do so as the central institution for global governance in civil aviation, by continuing to exercise our leadership in a spirit of cooperation with all stakeholders, so that safe and secure air transport can continue to play a determining role in the sustainable development of our global society. This is what is expected of us and this is what we will deliver." he added.

Mr. Kobeh González first assumed office as President of the Council on 1 August 2006, after having been elected to complete the mandate of Dr. Assad Kotaite, who retired on 31 July of that year. He was elected for a full term following the 36th Session of the ICAO Assembly held in late September 2007.

Mr. Kobeh González served as Representative of Mexico on the Council of ICAO from January 1998 until his election as President in 2006.

Roberto Kobeh González meets the press during the 37th Session of the ICAO Assembly. He was re-elected by acclamation on 15 November, 2010, for a second three-year term as President of the ICAO Council.

Traffic Rebound Forecast for 2010

Scheduled traffic of airlines of ICAO Member States should grow by 6.4 percent this year in terms of passenger-kilometers performed (PKPs) compared to a decline of 2 percent in 2009, according to consolidated figures collected by the Organization.

The substantial projected increase reflects positive economic prospects worldwide, based on a 4.5 percent growth in the world Gross Domestic Product (GDP) as forecast by Global Insight, a major economic forecasting organization.

Traffic for Asia/Pacific airlines should grow considerably faster than the global average, due to better economic prospects in States such as China and India, where aviation activity is expected to expand more rapidly.

The Middle East, Africa and Latin America regions will also enjoy higher traffic growth as economic conditions improve. North American airlines will grow slower than the world average because of lingering economic weaknesses.

With expectations of more than 4 percent annual growth of the world economy for the next three years, world traffic should grow at 4.7 percent and 4.9 percent for 2011 and 2012, respectively.

A breakdown of growth projections by ICAO Region is provided below.

Projected Regional Growth in Passenger-Kilometres Performed

Region	2009 (%)	2010 (%)	2011 (%)	2012 (%)
Africa	-3.3	9.8	8.5	7.7
Asia/Pacific	-0.2	10.8	7.5	7.5
Europe	-3.9	3.5	2.5	2.7
Middle East	9.1	15.5	12.0	11.5
North America	-3.9	2.8	2.2	2.5
Latin America/ Caribbean	0.9	9.8	5.5	5.6
World	-2.0	6.4	4.7	4.9

Volga-Dnepr:
Experts in Airlift Mobility

Volga-Dnepr Airlines celebrated the 20th anniversary of its first commercial flight in August 2010, as well as ten years of providing reliable worldwide operational support to the U.S. Department of Defense. With its formation, the airline is credited with creating a new international market niche for unique, oversize and heavy cargo transportation by air.

Established in 1990, Volga-Dnepr Airlines is an international organization headquartered in Ulyanovsk, Russia, with sales and operations offices in the U.K., U.S.A., U.A.E., Germany and China. Volga-Dnepr has an international team of approximately 2,800 personnel. Today, it is the largest airline in the world for the transportation of heavyweight and outsize air cargo.

With a fleet of ten AN-124 aircraft, Volga-Dnepr is the biggest operator of the unique Antonov AN-124-100 'Ruslan' freighter, a commercial aircraft similar to the U.S. Air Force's C-5 Galaxy but with larger payload and volume capacity. It provides logistics solutions to both the commercial and government/military markets, providing the capability to deliver up to 264,500 lbs (124 tonnes) of outsize and heavy air cargo on a single AN-124 flight, utilizing the aircraft's 991 cubic meters of maindeck cargo cabin. The AN-124-100 is the mainstay of Volga-Dnepr's fleet and has secured the airline's leadership in the international oversize cargo market since the 1990s, when it became the primary civil operator of the AN-124-100. Its ten AN-124-100s comprise 43 percent of the world's commercial AN-124 fleet.

Volga-Dnepr additionally led the development and construction of a new generation version of the highly popular IL-76 freighter, similar in size to that of the U.S. Air Force's former C-141 Starlifter. Compared to the old IL76, the new

IL-76TD-90VD is ICAO Stage IV certified for worldwide operations, has a higher payload of 50 tonnes, offers a more efficient fuel burn, requires less crew, and has a longer range.

Volga-Dnepr's cargo transportation expertise has seen the airline pioneer special, patented loading equipment to make it possible to load extremely large or complex shipments, such as heavy engines, generators, oil and gas pumping stations, reactors, satellites, aircraft components and helicopters. Since its first flight in 1990, Volga-Dnepr has successfully flown more than 10,000 shipments of unique heavyweight and outsized cargo to more than 480 airports in 188 countries. Today, its client list includes the governments of many nations and major international corporations, such as The Boeing Company, Exxon Mobil, Lockheed Martin, Space Systems Loral, NASA, British Petroleum, General Electric as well as many other Fortune 500 companies.

Over the years, Volga-Dnepr has provided airlift support for USTRANSCOM and AMC to COCOMs throughout the world, providing commercially contracted airlift moving Navy, Marine, Army, and Air Force cargo. Volga-Dnepr's aircraft have transported cargo in support of numerous civil and military operations, such as deploying equipment to suppress the oil well fires in Kuwait following Desert Storm in the 1990s, moving relief supplies for victims of the devastating earthquake that hit Pakistan in 2005, and currently providing airlift transporting MATVs and MRAPs into Afghanistan. This latter project is helping to fulfill the U.S. Secretary of Defense mandate of transporting 500 vehicles a month to support troops fighting throughout the region. As of 30 August 2010, Volga-Dnepr Airlines had transported 94 tonnes of urgently-needed relief supplies to Islamabad on behalf of the German Ministry of Defense to help victims of the devastating floods in Pakistan.

Volga-Dnepr Airlines has created a global business by providing air cargo solutions to seemingly impossible logistical challenges by utilizing a unique fleet of aircraft and specialized loading and handling equipment, as well as through the proven expertise of its people. In February 2003, the airline was honored with a prestigious Aviation Week & Space Technology award in the category of 'Commercial Air Service.' In February 2010, it was further recognized by another leading aviation magazine, Air Cargo World (USA), for the 'Development of Cargo Services.' ■

Aircraft for a Sustainable Future

In late 2008, NASA awarded research contracts worth a total of $12.4 million to six specially-selected industry teams. Four of these allotments were to move forward studies on advanced concepts for subsonic and supersonic commercial transport aircraft.

The goal of the NASA programme was to have the teams deliver concepts that were realizable based on projected near-term technology and fuel developments, and that could ideally enter commercial service within a 25-to-30 year timeframe. The vehicles that resulted from this research were recently presented to the public, and represent a research and development generation known as 'N+3'—denoting three generations beyond the current commercial air transport fleet.

An 18-month NASA research effort to visualize the passenger airplanes of the future has produced some ideas that, at first glance, may appear to be surprisingly old fashioned. Instead of exotic new designs seemingly borrowed from science fiction, familiar shapes dominate the pages of the advanced concept studies which four industry teams completed for in NASA's Fundamental Aeronautics Program during 2010.

Look more closely at these concepts for airplanes that may enter service 20 to 25 years from now, however, and you'll see things that are quite different from the aircraft of today.

Just beneath the skin of these concepts lie breakthrough airframe and propulsion technologies designed to help the commercial aircraft of tomorrow fly significantly quieter, cleaner, and more fuel-efficiently, with more passenger comfort and to more types of airports. These breakthroughs include ultramodern shape memory alloys, ceramic or fiber composites, carbon nanotube or fiber optic cabling, self-healing skin, hybrid electric engines, folding wings, double fuselages and virtual reality windows.

In a separate NASA project related to this article's focus, Lockheed Martin, GE, Purdue University and Wyle Laboratories researched environmentally friendly supersonic airframe and propulsion concepts (such as the one shown here) and related technology maturation plans.

"Standing next to the airplane, you may not be able to tell the difference, but the improvements will be revolutionary," said Richard Wahls, project scientist for the Fundamental Aeronautics Program's Subsonic Fixed Wing Project at NASA's Langley Research Center in Hampton, Virginia. "Technological beauty is more than skin deep."

In late 2008, NASA awarded research contracts worth a total of $12.4 million to six specially-selected industry teams (see sidebar page 33). Four of these allotments were to move forward studies on advanced concepts for subsonic and supersonic commercial transport aircraft. The focus of the teams' studies was on developing aircraft that could overcome today's significant performance and environmental challenges for the benefit of the general public.

"The future of air transportation is all about protecting the environment and responding to increasing energy costs in a balanced way," said Juan Alonso, director of NASA's Fundamental Aeronautics Program at NASA's Headquarters in Washington, DC. "We will need airplanes that are quieter and more fuel efficient, as well as cleaner-burning fuels to power them. The N+3 initiative challenged industry to introduce these new technologies without impairing the convenience, safety and security of commercial air transportation."

NASA's goals for the 2030-era aircraft to be designed by each team, compared with an aircraft entering service today, were:

- A 71-decibel reduction below current Federal Aviation Administration noise standards, which aim to contain objectionable noise within airport boundaries.
- A greater than 75 percent reduction on the International Civil Aviation Organization's Committee on Aviation Environmental Protection Sixth Meeting, or CAEP/6, standard for nitrogen oxide emissions, which aims to improve air quality around airports.
- A greater than 70 percent reduction in fuel burn performance, which could reduce greenhouse gas emissions and the cost of air travel.
- The ability to exploit metroplex concepts that enable optimal use of runways at multiple airports within metropolitan areas, as a means of reducing air traffic congestion and delays.

Highlights from the NASA-selected Teams' Final Reports

GE

The GE Aviation team conceptualized a 20-passenger aircraft that could reduce congestion at major metropolitan hubs by using community airports for point-to-point travel. The aircraft has an oval-shaped fuselage that seats four across in full-sized seats. Other features include an aircraft shape that smoothes the flow of air over all surfaces and electricity-generating fuel cells to power advanced electrical systems.

The aircraft's advanced turboprop engines sport low-noise propellers and further mitigate noise by providing thrust sufficient for short takeoffs and quick climbs.

N+3 PROGRAMME PHASE 1 RESEARCH PROJECTS

Project: Development of Subsonic Ultra Green Aircraft Research
Team: The Boeing Company, Georgia Institute of Technology, GE Global Research and GE Aviation
Amount: $1.9 million

Project: Small Commercial Efficient and Quiet Air Transportation for 2030–2035
Team: GE Aviation, GE Global Research, Georgia Institute of Technology and Cessna Aircraft Company
Amount: $1.97 million

Project: Aircraft and Technology Concepts for N+3 Subsonic Transport
Team: Massachusetts Institute of Technology, Aurora Flight Sciences, Aerodyne Research Inc., Pratt and Whitney and Boeing Phantom Works
Amount: $2.13 million

Project: Advanced Concept Studies for Subsonic Commercial Transport Aircraft Entering Service in 2030–2035
Team: Northrop Grumman Systems Corporation, Tufts University, Sensis Corporation, Spirit Aerosystems Corp. and Rolls-Royce North America Inc.
Amount: $1.97 million

Project: Advanced Concepts Studies for Supersonic Commercial Transport Aircraft Entering Service in 2030–2035
Team: The Boeing Company, Boeing Phantom Works, GE Global Research, Georgia Institute of Technology, M4 Engineering Inc., Pratt and Whitney, Rolls Royce and Wyle Laboratories
Amount: $2.28 million

Project: NASA N+3 Supersonic, Three Generations Forward in Aviation Technology
Team: Lockheed Martin Corporation, GE Global Research, Purdue University and Wyle Laboratories
Amount: $1.96 million

MIT

With its 180-passenger D8 'double bubble' configuration, the MIT team strayed farthest from the familiar—fusing two aircraft bodies together lengthwise and mounting three turbofan jet engines on the tail. Important components of the MIT concept were the use of composite materials for lower weight and turbofan engines with an ultra-high bypass ratio[1] for more efficient thrust.

In a reversal of current design trends, the MIT concept increases the bypass ratio by minimizing expansion of the overall diameter of the engine and shrinking the diameter of the jet exhaust instead. The team said it designed the D8 to do the same work as a Boeing 737-800 while the aircraft's unusual shape gives it a roomier coach cabin than the 737.

ICAO'S GLOBAL EFFORTS ON THE ENVIRONMENT

At the global level, ICAO has initiated efforts to establish medium- and long-term goals for technologies related to the reduction of aircraft noise, fuel burn and emissions of NOx, as well as to generate increased environmental benefit from operational initiatives. These goal-setting exercises are being led by panels of independent experts.

The purpose of establishing these objectives is to provide stretch targets for industry R&D to aim at in cooperation with ICAO Member States. The goals are being set based on their environmental benefit, technological feasibility, economic viability and their potential for adversely impacting other environmental targets or initiatives.

For more details on ICAO's global environmental goals and priorities for civil aviation, please visit **www.icao.int/icao/en/Env2010/TechnologyStandards.htm**

[1] An ultra-high bypass ratio is designed so that air flow through the core of the engine is reduced, while air flow through the duct surrounding the core is substantially larger than in a conventional engine.

The Subsonic Ultra Green Aircraft Research, or SUGAR, Volt future aircraft design comes from the research team led by The Boeing Company. The Volt is a twin-engine concept with a hybrid propulsion system that combines gas turbine and battery technology, a tube-shaped body and a truss-braced wing mounted to the top of the aircraft. The plane is designed to fly at Mach 0.79 carrying 154 passengers 3,500 nautical miles.

Northrop Grumman

The Northrop Grumman team, meanwhile, foresaw the greatest need for a smaller, 120-passenger aircraft that would be tailored for shorter runways in order to help expand existing capacity and reduce delays. The team describes its Silent Efficient Low Emissions Commercial Transport (SELECT) concept as "revolutionary in its performance, if not in its appearance." Ceramic composites, nanotechnology and shape memory alloys figure prominently in the airframe and ultra high bypass ratio propulsion system construction.

The Northrop Grumman aircraft delivers on environmental and operational goals in large part by using smaller airports, with runways as short as 5,000 feet, for a wider geographic distribution of air traffic.

Boeing

The Boeing Company's Subsonic Ultra Green Aircraft Research, or 'SUGAR' team, examined five separate concepts. The team's preferred concept, the SUGAR Volt, is a twin-engine aircraft with hybrid propulsion technology, a tube-shaped body and a truss-braced wing mounted to the top. Compared to the typical wing used today, the SUGAR Volt wing is longer from tip to tip, shorter from leading edge to trailing edge and has less sweep. It also could include hinges to fold the wings while parked close together at airport gates. Projected advances in battery technology enable a unique, hybrid turbo-electric propulsion system. The aircraft's engines could use both fuel to burn in the power plant's core, and electricity to turn the turbofan when the core is powered down.

NASA did not specify its future commercial air transportation needs as domestic or global. All four teams focused on aircraft sized for travel within a single continent because their business cases showed that small- and medium-sized planes will continue to account for the largest percentage of the overall fleet in the future. One team, however, did present a large hybrid wing concept for intercontinental transport.

All of the teams provided "clear paths" for future technology research and development, noted Ruben Del Rosario, principal investigator for the Subsonic Fixed Wing Project at NASA's Glenn Research Center in Cleveland, Ohio.

"The teams' reports will definitely make a difference in how we plan our research portfolio," Del Rosario commented. "We can identify the common themes in these studies and use them to build a more effective strategy for the future."

Common Themes from the Four Reports

- Slower cruising—at about Mach 0.7, or seven-tenths the speed of sound, which is 5 percent to 10 percent slower than

The Silent Efficient Low Emissions Commercial Transport, or SELECT, future aircraft design comes from the research team led by Northrop Grumman Systems Corporation. Deceptively conventional-looking, the concept features advanced lightweight ceramic composite materials and nanotechnology and shape memory alloys. In addition to being energy efficient and environmentally friendly, the SELECT improves the capacity of the future air transportation system because it can be used at smaller airports and make them more effective. It is designed to fly at Mach 0.75 carrying 120 passengers 1,600 nautical miles.

The "double bubble" D8 Series future aircraft design concept comes from the research team led by the Massachusetts Institute of Technology. Based on a modified tube and wing with a very wide fuselage to provide extra lift, its low sweep wing reduces drag and weight; the embedded engines sit aft of the wings. The D8 series aircraft would be used for domestic flights and is designed to fly at Mach 0.74 carrying 180 passengers 3,000 nautical miles in a coach cabin roomier than that of a Boeing 737-800.

Much lighter and more aerodynamic than current aircraft with the same capacity, the 20-passenger GE aircraft would reduce fuel consumption and noise and enable business jet-like travel between more than 1,300 airports. It features ultra-quiet turboprop engines, virtual reality windows, and is designed to fly at Mach 0.55 for 800 nautical miles.

today's aircraft—and at higher altitudes, to save fuel.

- Engines that require less power on takeoff, for quieter flight.
- Shorter runways—about 5,000 feet long, on average—to increase operating capacity and efficiency.
- Smaller aircraft—in the medium-size class of a Boeing 737, with cabin accommodations for no more than 180 passengers—flying shorter and more direct routes, for cost-efficiency.
- Reliance on promised advancements in air traffic management, such as the use of automated decision-making tools for merging and spacing enroute as well as departure climbs and arrival descents.

The teams recommended a variety of improvements in lightweight composite structures, heat- and stress-tolerant engine materials and aerodynamic modeling that can help bring their ideas to reality. NASA is weighing the recommendations against its objective of developing aeronautics technologies that can be applied to a broad range of aircraft and operating scenarios for the greatest public benefit.

"This input from our customers has provided us with well thought-out scenarios for our vision of the future, and it will help us place our research investment decisions squarely in the mainstream," noted Jaiwon Shin, associate administrator for aeronautics research at NASA Headquarters in Washington, DC. "Identifying those necessary technologies will help us establish a research roadmap to follow in bringing these innovations to life during the coming years."

The next step in NASA's effort to design the aircraft of 2030 is a second phase of studies to begin developing the new technologies that will be necessary to meet the national goals related to an improved air transportation system with increased energy efficiency and reduced environmental impact. The agency received proposals from the four teams in late April and expects to award one or two research contracts for work starting in 2011.

NASA managers also will reassess the goals for 2030 aircraft to determine whether some of the crucial technologies will need additional time to move from laboratory and field testing into operational use. The four teams only managed to meet either the fuel burn or the noise goal with their N+3 concepts thus far, not both.

A companion research effort looked at concepts for a new generation of supersonic transport aircraft capable of meeting NASA's noise, emissions and fuel efficiency goals for 2030. NASA envisions a broader market for supersonic travel, with aircraft carrying more passengers to improve economic viability while meeting increasingly stringent environmental requirements.

Teams led by The Boeing Company and Lockheed Martin evaluated market conditions, design goals and constraints, conventional and unconventional configurations, and enabling technologies to create proposed roadmaps for research and development activities. Both teams produced concepts for aircraft that can carry more than 100 passengers at cruise speeds of more than Mach 1.6 and have a range of up to 5,000 miles. ■

2010 ICAO CALENDAR OF EVENTS*

Meetings	Site	Duration
Airport Economics Panel/Air Navigation Services Economics Panel (AEP-ANSEP/4)	ICAO Headquarters, Montreal	7–11 February 2011
Aviation Security Panel (AVSECP/22)	ICAO Headquarters, Montreal	21–25 March 2011
Global Runway Safety Symposium	ICAO Headquarters, Montreal	24–26 May 2011
Workshop on ICAO Programme of Action on International Aviation and Climate Change	ICAO Headquarters, Montreal	30 May–3 June 2011
Fatigue Risk Management Systems Symposium and Forum	ICAO Headquarters, Montreal	30 August–2 September 2011
Technical Advisory Group on Machine Readable Travel Documents (TAG-MRTD)	ICAO Headquarters, Montreal	7–9 September 2011
Seventh Symposium on ICAO MRTDs, Biometrics and Security Standards	ICAO Headquarters, Montreal	12–15 September 2011
Committee on Aviation Environmental Protection Steering Group	ICAO Headquarters, Montreal	12–16 September 2011
Global Air Navigation Industry Symposium	ICAO Headquarters, Montreal	21–23 September 2011
Dangerous Goods Panel (DGP/23)	ICAO Headquarters, Montreal	11–21 October 2011
Regional Safety Oversight Groups	ICAO Headquarters, Montreal	24–28 October 2011
Air Traffic Management Requirements and Performance Panel (AMTRPP/1)	ICAO Headquarters, Montreal	21–25 November 2011
Workshop on Aviation and Alternative Fuels	ICAO Headquarters, Montreal	28 November–2 December 2011

* Subject to change. Please check the ICAO Web site on a regular basis for the most up-to-date listings.

Get your Dangerous Goods Information and Training Straight from the Source

ICAO Dangerous Goods Training Programme

ICAO has launched an exclusive new Dangerous Goods (DG) Training Programme based on the recently revised *Dangerous Goods Training Manual* (Doc 9375). The Programme consists of this new manual and several courses which will assist States in complying with the broad principles governing the international transport of dangerous goods by air as outlined in Annex 18—*The Safe Transport of Dangerous Goods by Air* and detailed in the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284).

Main benefits of the ICAO DG Training Programme include:

- **Courses and materials are delivered by ICAO directly—no third parties.**
- **Programme is developed specifically for State Inspectors, but will benefit all personnel dealing with DGs.**
- **Participants receive an official ICAO certificate upon successful completion of a test.**
- **Courses are based on the ICAO *Technical Instructions*—the only legal source of regulations for the safe transport of dangerous goods by air.**
- **Courses are delivered by senior level DG personnel with extensive experience.**
- **On-site training is offered to maximize availability and minimize costs.**

The first course—*Using the Technical Instructions*—is a prerequisite/refresher course that reviews the *Technical Instructions* section by section employing real-life examples and scenarios. Potential students should be well-versed in aviation terminology. Familiarization with the transportation of dangerous goods by air is useful, but not mandatory. Montréal course dates for Using the Technical Instructions are now established but spaces are limited.

Applicable 2011 course dates*:

14-18 February	**25-29 July**
7-11 March	**12-16 September**
11-15 April	**24-28 October**
16-20 May	**21-25 November**

** With the exception of the February course in Brisbane, Australia, all courses will be held in Montréal, Canada. All dates and availability are subject to change.*

Register today!

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For additional details visit:
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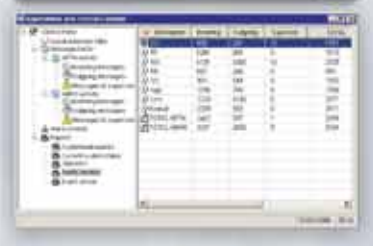

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