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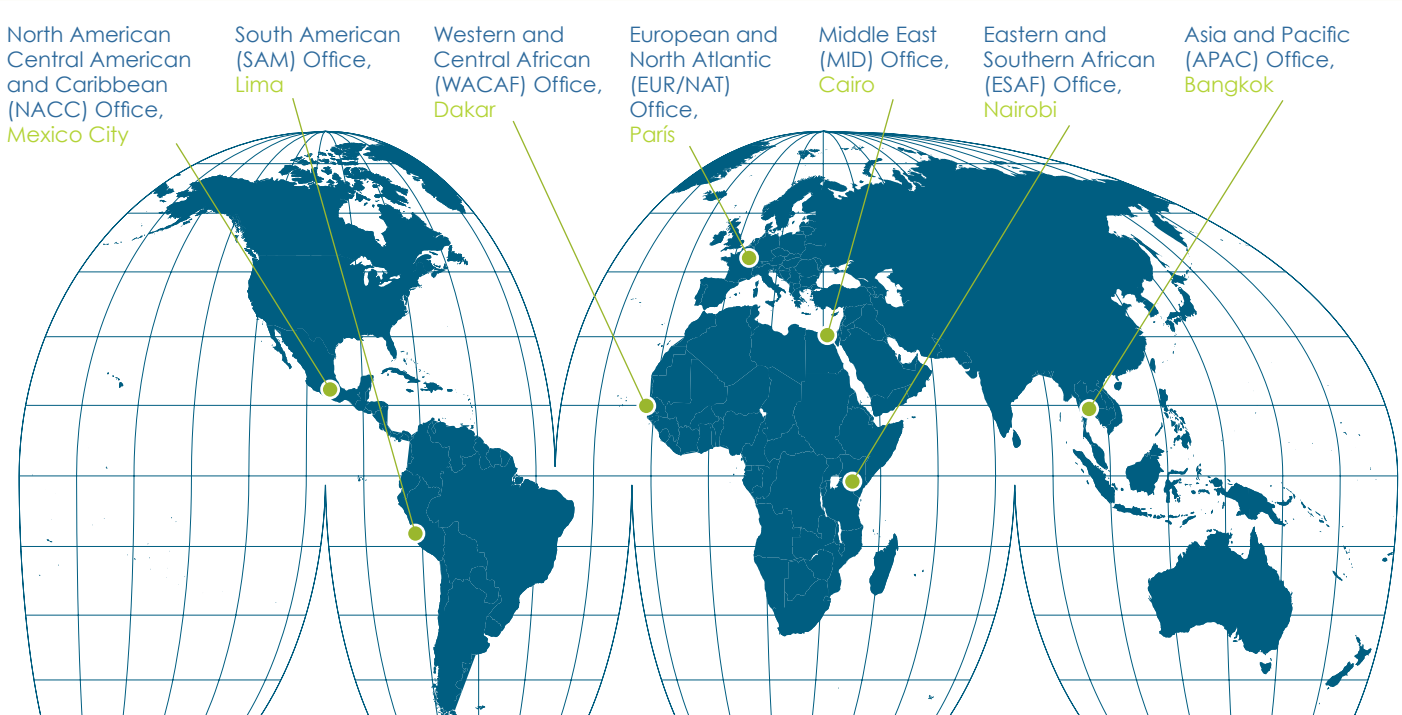

Addressing the Challenge of Improving Airport and Air Cargo Security Measures

This issue of the *ICAO Journal* highlights two key elements of our work in the field of aviation security, specifically airport security and the security of air cargo. Both topics have attracted considerable attention in recent months following high-profile attempts to sabotage aircraft in-flight.

Airport security, and the passenger screening process in particular, has an impact on virtually all of us. Every day, millions of air travellers begin their journey by joining a queue at a security checkpoint. While this routine can be tiresome, most travellers reason that the screening process is necessary in a world where the threat to civil aviation is all too real.

ICAO's first priority is to develop and promote the implementation of airport security measures that are effective at countering the evolving threat and that inspire confidence in the security of the aviation industry as a whole. At the same time, however, the Organization remains conscious of the need to apply practical countermeasures that do not impose excessive burdens on travellers and the air transport industry.

This is why—as described in this issue—we are presently coordinating efforts to define a future screening checkpoint that will more effectively integrate new technologies, intelligence sharing and other advanced techniques. ICAO is focusing its efforts on improving detection of malefactors and prohibited objects while continuing to prioritize an overall passenger experience that remains efficient and comfortable.

Air cargo security has come under increased scrutiny following last year's discovery of a plot to sabotage two freighter aircraft using explosive devices hidden inside parcels. This incident was yet another sign that terrorists will exploit any perceived vulnerability in the air transport system. Fortunately, in this case, disaster was averted by quick action based on the sharing of intelligence.

Air cargo security is now being strengthened. On 1 July 2011, more stringent ICAO standards concerning air cargo became applicable and a group of experts will soon produce recommendations on practical measures that States can adopt to

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"The Secretariat is currently working with experts on the Aviation Security Panel to finalize the first Global Risk Context Statement—in essence a more accurate description of the threat and risk environment that can be updated and disseminated to States on a regular basis."

enhance the security of air cargo carried on both passenger and cargo aircraft.

In light of the real risk of explosives being planted inside cargo during multimodal shipping processes, regulators and the industry alike agree on the need to establish more effective and comprehensive supply chain security. Appropriately, ICAO Annex 17—*Security* has been amended and now requires that each Member State establish a formal supply chain security process. States are also required to apply security controls to cargo, including appropriate methods of screening.

As with security at airports, cargo security measures have to be efficient as well as effective. This is a formidable challenge given the volume of cargo transported every day, not to mention the complexity of the global air cargo system. We have no choice but to meet this challenge, however, because the world's economic vitality significantly depends on air transport's capability to dependably deliver goods securely and on a timely basis.

New ICAO Security Tools and a Risk-based Approach

One way to facilitate air transport while addressing security threats is to implement security measures developed according to advanced risk-based criteria. The sharing of information on threats (including the use of passenger data for identifying high-risk passengers) is obviously very important in this respect. ICAO's Declaration on Aviation Security, adopted by the Assembly in 2010 in light of the continuing threats to civil aviation, called on States to strengthen the aviation security framework through enhanced international cooperation that includes improved information sharing.

ICAO is actively promoting the practice of risk management among States, in part by facilitating information sharing. Among other priorities, the Secretariat is currently working with experts on the Aviation Security Panel to finalize the first Global Risk Context Statement—in essence a more accurate description of the threat and risk environment that can be updated and disseminated to States on a regular basis. This valuable living document will provide States with information they can use in preparing their own national risk assessments, including a thorough analysis of the various threats to civil aviation.

Another tool ICAO has established for sharing critical threat information is the Aviation Security Point of Contact (PoC) Network. To evaluate the effectiveness of this network, a number of system tests were conducted in 2010 and 2011. These proved successful and additional tests across ICAO's regions will continue to be carried out on a periodic basis.

More recently, ICAO also finalized development of a web-based platform named "AVSECPaedia" to encourage the exchange of sensitive information between States, including information on screening technologies and techniques.

In addressing today's threats, technology remains a key component of many proposed security solutions. Through technological advancements, we can attain the capability to detect a wide range of threats as well as promote sustainability.

This is certainly the case as we respond to the problem of liquid explosives that arose in 2006. The short-term solution put in place was necessary but also entailed costly and inconvenient restrictions on the carriage of liquids, aerosols and gels. ICAO has spared no effort to encourage and coordinate the development of less burdensome long-term solutions in this area, employing more innovative technologies. We are encouraged by related progress to date and look forward to the point when current restrictions imposed on carry-on liquids will be removed, vastly improving facilitation.

With respect to sustainability, ICAO Member States and the industry must be prepared to make appropriate investments to realize all of these objectives. Effective aviation security measures and minimal passenger delays cannot be assured without adequate funding for comprehensive research and development, as well as the timely deployment of new equipment and properly trained personnel.

At the same time, ICAO Member States must continue the ongoing and productive dialogue surrounding the cooperative development of mutually acceptable, effective and efficient security measures.

In all we do in this regard, it is vital to communicate clearly with the public about new procedures or technologies made necessary by the evolving threat. For example, health and privacy concerns related to the advanced body scanners now being operated or installed at many airports have to be adequately addressed. The first step is to fully explain the rationale for measures that are viewed by many as too intrusive or potentially unhealthy.

Over the long term, the public's acceptance of security measures is as important to the aviation industry's sustainability as are safe and reliable operations. Passengers should not be taken for granted. ■

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Ahead of the Threat

In recent years, ICAO's efforts to strengthen aviation security have gained momentum, winning a strong level of political commitment from Member States, industry and the wider aviation community. On the 10th Anniversary of 9/11, the *Journal* spoke with Jim Marriott, Chief of the Organization's Aviation Security Branch, for his perspective on what ICAO has achieved in the past decade and how it is focusing its resources more proactively in today's evolving and complex threat environment.

Jim Marriott is the current Chief of the ICAO Aviation Security (AVSEC) Branch. Prior to this posting, Marriott served for 25 years in a variety of junior, intermediate, and senior level positions related to air transport and general transportation security with the Government of Canada. He was also a long-serving member on ICAO's AVSEC Panel during this period.

***ICAO Journal:* It's been 10 years since 9/11. Considering efforts to strengthen aviation security in the decade since, are we truly safer today?**

Jim Marriot: That answer isn't as easy to provide as the question is to ask. It tends to simplify a very complex picture. There's no doubt in my mind, not to mention more widely in the opinions of most aviation security professionals, that we're more secure today in dealing with known threats than we have ever been.

The challenge for aviation security, the reason why it's so complex, is that threats today continue to evolve. Our task is to anticipate those future threats and get out ahead of them. We accomplish this with either completely new security measures or with adjustments to existing measures in order to defeat problems before they manifest themselves. More comprehensive intelligence networks and better information sharing also play a very important role in this regard and I believe that we're getting better at all these things all the time.

Was 9/11 the most important catalyst for these advances?

Absolutely. As much or more than any other aviation security event, 9/11 challenged many of our broad assumptions about what security is and how it's managed. It certainly led to a lot of reflection about the kinds of structures we had in place at the international and State level and, since then, we've seen

many changes made and overall a much more focused and aggressive counter-terrorism posture being established.

What is ICAO doing to keep better pace with these new and emerging threats?

That's a really important question and it addresses a building block of solid aviation security that I think we've made good progress on. One thing I'd like to stress is that security is not a science like so much of aeronautics is. We're able with aeronautics to anticipate the interaction between an aircraft and the air around it and to then predict outcomes based on science. With security, the level and type of anticipation involved is much less scientific because we're dealing with human beings and the effects of human behaviour on aviation. In this sense it can begin to become much more of an art than a science at times.

To help address these non-linear security realities, ICAO has assembled a very diverse group of experts from around the world whose task it is to review all that we know about security threats, based on incidents we've seen and broader developments in the aviation and non-aviation environments, and to then predict what types of new threats may emerge as terrorist behaviour continues to evolve. These experts form a specialized Working Group of ICAO's AVSEC Panel and it's this Group's conclusions about the evolving risk environment that helps drive ICAO's objectives in either defining new security measures or adjusting existing ones.

Some observers say the aviation community has lost sight of common sense by treating virtually every air traveller as a suspected terrorist. Is this a valid characterization of today's security procedures?

I would characterize that statement differently. Rather than saying we treat all passengers as terrorists, aviation security on the contrary treats all passengers equally with respect to their fundamental expectation that they can fly securely. It's also not accurate to say that everyone is treated as equally dangerous because there are secondary levels of screening that the majority of travellers may never experience.

Our efforts in recent years have been to establish an effective baseline of security that allows passengers, baggage and cargo onto aircraft subject to a carefully determined level of investigation—one that is balanced by concerns for passenger comfort and industry efficiency. This baseline is more involved than it once was, but it's also appropriate given today's threat environment.

One point to stress here is that terrorists don't all fit into a single description and that aviation represents a very complex global system that serves individuals of every race, religion and socio-economic status. In this sense every traveller must be assessed and this is why some people mistakenly believe they're being treated 'like terrorists' today. In actual fact, this baseline we've established is significantly augmented with additional examinations of certain individuals, baggage or cargo types that we actually do deem to be of higher risk. These risk determinations are being made out of public view, based on a complex package of intelligence sharing and other factors, so people simply aren't as aware of them as they are of the security measures they do see.

What do you feel to be the most pressing security concerns today in the airport context specifically?

I'd rather not address airport security in terms of specific threats or vulnerabilities, but rather deal with it more holistically as an environment where we're working on several interrelated levels to achieve better overall security outcomes. The most pressing concern at the airport, as with all of aviation, is the continuing evolution of threats. We know that terrorists are constantly seeking new ways to achieve their objectives and we have to work very hard to stay ahead of them.

Our work in airport security also has to recognize our need to allow aviation in general to prosper and succeed. In other words we have to be mindful of the sustainability of security. There simply aren't infinite resources at our disposal to detect and prevent threats so we have to stay focused on achieving a security system that provides an overall level of benefit that we can practically maintain and improve over the long-term.

The issue of passenger facilitation and the flow of people and goods through the airport environment is also a huge concern in everything we do from a security standpoint. At ICAO we've always recognized that security and facilitation are two sides of the same coin and we constantly strive to harmonize both domains. A conscious prioritization of the efficient movement of passengers helps security professionals ensure continued confidence and prosperity in aviation. If planes don't fly and airports aren't open then, very simply, the system is failing.

From our vantage point it's obvious that it's much less inconvenient for a passenger to have to wait in line at an airport than it is to have that airport close down because people are afraid to fly. It's our job in aviation security then to stay focused on the facilitation goals of keeping those lines short and those people moving, all while we simultaneously ensure that the system is secure.

The achievement of today's excellent security results requires a great deal of cooperation at many different levels. How does ICAO collaborate and harmonize its efforts with organizations such as IATA and ACI where airport security standards, planning and programme implementation are concerned?

The Organization is very fortunate that, in the various deliberative Groups and Panels that ICAO convenes, we benefit from the diverse policy and regulatory perspectives of our industry partners. They include IATA and ACI but also many others.

"As of 1 July 2011 new Standards on air cargo security have in fact come into full effect, introducing a requirement that States establish effective supply-chain security systems. This provides for security being applied not just at the airport, but through the entire multi-modal transport system that takes that cargo from the factory to the airport and then on to its end-user. This is a very important step ahead and ICAO plays a very important role in amending the international Standards addressing these needs."

IATA's operators, for instance, have a security priority in mind but also practical economic and operational priorities to respect. The operators are very much 'closer' to the travelling and passenger experience than we are as regulators on a day-to-day basis. In that sense their input is truly helpful.

ICAO is also in an even more advantageous position from the standpoint of cooperation now that ACI has moved its offices to Montreal. We look forward to having the voice of the world's airport community right next door as things proceed as it's obviously a very key partner in virtually everything we do.

There is no harmonized procedure for checking air freight at present, with related regulations still varying considerably from country to country. Does ICAO have a role to play in this regard?

We're already taking a lead role. As of 1 July 2011 new Standards on air cargo security have in fact come into full effect, introducing a requirement that States establish effective supply-chain security systems. This provides for security being applied not just at the airport but through the entire multi-modal transport system that takes that cargo from the factory to the airport and then on to its end-user. This is a very important step ahead and ICAO plays a very important role in amending the international Standards addressing these needs.

The events of last October, when suspicious parcels were found in the U.K. and Dubai bound for the U.S., changed the assumptions on which the framework of cargo security had been built. ICAO immediately began working with its Member States to determine how the bar should be raised and the threat addressed, while recognizing that air cargo is an absolutely essential component of the global economy and needs to keep moving efficiently.

How do these efforts on the regulatory side dovetail with ongoing industry initiatives to address cargo supply chain security?

That's really important—that they do dovetail. We know from the very long history that we've established with industry that excellence in security cannot arrive overnight. We learn through experience, we learn through the application of new technologies and through all sorts of other means to determine the best security solutions available.

We're encouraged that industry sees itself very much in a complementary role to ICAO and that bodies such as IATA have pilot projects under way in this area even now—the knowledge and outcomes from which will help inform the international regulatory process. Our roles are absolutely supportive in this regard.

ICAO has proposed the convening of a global aviation security event in September 2012. Why do you feel this is necessary at this juncture?

There's been a tendency in the history of aviation security to very aggressively convene the international community after horrific events occur. As part of our new focus on sustainability and achieving a more proactive posture, ICAO is striving to create an environment of more constant attention and awareness on behalf of regulators, industry and law enforcement. This new approach requires that we bring together decision-makers at appropriate and more regular intervals.

The September 2012 high-level event will also seek to establish a stronger leadership role for ICAO on aviation security. We'll be convening the Organization's Member States to bring new issues to them and develop a focused discussion on the challenges we're facing and the methods to address them. This will help us maintain the significant aviation security momentum that's been built-up in recent years, keeping the level of political commitment high and keeping the degree of professional and technical engagement very high. ■

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Engaged and Proactive

ICAO's specialized Working Group on Air Cargo Security (WGACS) was formally established at the AVSEC Panel Meeting at ICAO Headquarters in March 2011. Its first objective is to recommend practical measures that States can adopt to enhance the security of air cargo carried on passenger and cargo aircraft. The WGACS will also recommend ways to harmonize ICAO air cargo security measures with respect to the standards, policies and guidance material of other key regulatory entities, including the World Customs Organization (WCO) and Universal Postal Union (UPU), in order to address air cargo security concerns in a comprehensive and inclusive manner.

Alec Doazan, Technical Officer in ICAO's Aviation Security and Facilitation Section, and Ken Dunlap, Security and Travel Facilitation Director for IATA, spoke to the *Journal* recently regarding the challenges remaining for the aviation sector as it seeks to build off ICAO's and IATA's proactive steps in this area and develop more comprehensive and effective measures addressing the entire air cargo supply chain.

Well before the now infamous air cargo incidents of October, 2010, ICAO had proposed new Amendments to Annex 17—*Security,* associated with the strengthening of air cargo supply chain security. These and other measures were in line with a new emphasis on aviation security issues and measures driven by Raymond Benjamin, who was elected as the Organization's new Secretary General in 2009, and Jim Marriott, who became Chief of the Aviation Security Branch in May 2010.

Post October 2010, ICAO set into motion a new Working Group on Air Cargo Security (WGACS) tasked with identifying and assessing key known and anticipated threats to air cargo security. It has since begun to codify best practices and develop associated guidance material in this area, focusing on practical, actionable measures that States can implement to promptly and effectively address air cargo vulnerabilities.

The first meeting of the WGACS took place in Amman, Jordan, in May 2011. The group reconvened for its second meeting at ICAO's Headquarters in September 2011. Over the course of both meetings, its participants laid the groundwork for a new and globally-agreed definition of high-risk cargo, as well as establishing baseline procedures to enable more informed determinations of what should, or should not, be labeled a 'high-risk' consignment. The precise definition and the additional security measures to be applied to high-risk shipments will be determined in more detail as the Group's work progresses.

The WGACS also established two new Sub-Groups tasked respectively with reviewing and amending the guidance material on air cargo found in the ICAO Aviation Security Manual, as well as developing guidance on the handling of trans-shipment cargo. The initial review of the guidance

Defining a Strategy for Aviation Security in the Twenty-first Century

High-level Aviation Security Conference

ICAO H Q, Montréal
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Ten years after the last ICAO High-level Aviation Security Conference, the threat from acts of unlawful interference continues to be high around the world. The aviation security environment has also become more complex and States and industry increasingly seek ICAO's global leadership to develop new strategies to address the challenges that confront policy-makers and operators alike.

In light of these factors, ICAO will convene a High-level Aviation Security Conference in 2012 to consult industry and State aviation security stakeholders on the global threat to aviation and the effectiveness of ICAO's current policies and guidance, including the newly-developed ICAO Comprehensive Aviation Security Strategy (ICASS) and the 37th Assembly Declaration on Aviation Security. The implementation of Annex 17 by States will also be reviewed.

The 2012 Conference will examine the critical challenges affecting global aviation security and recommend initiatives and solutions to address them. It will also promote the alignment of national regulatory regimes with the latest ICAO global aviation security framework.

For more information please visit:

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"ICAO's activity in cargo security has been both visionary and leading. Carriers were very happy to see, long before there was ever an incident in this area, that ICAO had implemented supply chain security principles into its latest Amendments to Annex 17. Essentially what this meant was that, post-October 2010, ICAO initiatives were already a few steps ahead of the terrorist threat."

Ken Dunlap, IATA Director Security and Travel Facilitation

material was presented to the group during the second WGACS meeting, and both sub-groups will complete their tasks by the end of this year.

The WGACS will additionally be examining and making recommendations on proposed ways and means to better harmonize ICAO's air cargo security measures with respect to the standards, policies and guidance materials of relevant international organizations in this area.

"ICAO has been focused on these issues for some time," commented Alec Doazan, Technical Officer in ICAO's Aviation Security and Facilitation Section. "Amendment 12 to Annex 17, which came into force on 1 July this year, clearly indicated the priority the Organization was giving to supply chain security concerns and the measures we felt would be helpful going forward. Since that time, ICAO has been seeking to improve the level of coordination surrounding all the international efforts that are ongoing in this regard, for example the MOU with the WCO, and related efforts to harmonize its actions and initiatives with those of the UPU."

States will have the opportunity to file differences with ICAO on Amendment 12, as required by the Chicago Convention. These differences, if any, will be reviewed at the next ICAO Council session and will give the Organization a clearer indication of the level of compliance and implementation among Member States.

As industry players begin to adjust to the new air cargo security framework laid out in Amendment 12, airlines especially have welcomed ICAO's proactive approach on supply chain issues and are set to coordinate their activities with the Organization to help implement the newer, stronger supply chain framework that is now emerging.

"ICAO's activity in cargo security has been both visionary and leading," remarked Ken Dunlap, Director of Security and Travel Facilitation for the International Air Transport Association (IATA). Carriers were very happy to see, long before there was ever an incident in this area, that ICAO had implemented supply chain security principles into its latest Amendments to Annex 17. Essentially what this meant was that, post-October 2010, ICAO initiatives were already a few steps ahead of the terrorist threat."

Dunlap highlighted that ICAO's work immediately after the October incident, especially with regard to standardizing the language and developing a notional set of supply chain security concepts to be considered and debated by industry, has been extremely helpful with near-term objectives. He also noted that there remains an important role for the Organization to play, especially in bringing increased harmonization to today's regulatory environment.

"After October 2010 we're finding increased emphasis on topics such as 100 per cent screening of cargo for both passenger and freighter operations. Right now the jurisdictional requirements over screening responsibilities between the air transport and regulatory stakeholders are still fragmented," Dunlap noted. "IATA is eager to see this resolved and for all players to have a clearer understanding of where operators will need to be focusing their resources."

IATA envisions a future of supply chain security where everyone who touches a parcel has ownership over making sure that consignment is secure. Its approach to solutions has been three-pronged to this point, focusing first on identifying the principles and procedures that need to be established, determining the technologies needed to provide for more effective screening of over-sized pallets and containers, and lastly, assuring that all players in the supply chain framework leverage and share all available cargo data up the supply chain to improve protection of all consignments.

"This is one of the most complex problems that we've ever had to deal with," Dunlap said, "But at the same time a great many have made it very clear that they view October 2010 as the cargo sector's 9/11. The top issue is making sure every cargo stakeholder understands the urgency involved and what their role is." ■

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Reaffirming our Commitment and Accomplishments on National and International Air Transport Priorities

Through Decree PEN 1770/07, a long-standing goal was finally achieved by the Argentine Republic: the establishment of a specific and independent body able to regulate and manage the State's civil aviation-related issues.

Argentina's National Civil Aviation Administration (ANAC) came into being under the guidance of Mr. Alejandro A. Granados, when the duties of the former Commercial Air Transport Secretariat were transferred to the State's National Air Transport Agency. Since then the agency has been responsible for all commercial air activities and the establishment of Argentina's national air policy guidelines.

Under the leadership of Mr. Jorge A. Máquez, Argentina's National Air Transport Agency has been undertaking ambitious project public administration objectives relating to commercial aviation issues. This project has already yielded positive outcomes, namely: simplifying Argentina's aviation-related legal framework; speeding up authorizations for commercial air operations; and ensuring adequate and balanced protection to the interests of the sector's diverse stakeholders.

These achievements have resulted in a significant strengthening of the legal and regulatory environment that Argentina can guarantee to commercial air operators. These results have largely been due to the efforts of Argentina's National Administrator, who has made these organizational improvements a top priority.

Complimenting these achievements has been the work of the State's Agency for Commercial Air Services[1], which has established a set of innovative new regulations (ANAC Resolution 764/10) that standardize and simplify procedures for carriers and other stakeholders to obtain their operating permits. Argentina's Agency of Aeronautical Offenses[2] has similarly been influential in changes to the aviation legal framework, significantly reorganizing it (ANAC resolution 1036/10) and enforcing a training programme that has helped all sections in ANAC become more familiar with the new sanctions process.

These initiatives, carried out by the two above mentioned agencies, have led to dramatically improved organization, efficiency, safety and operator confidence in Argentina's air transport sector and were singled out for public praise by the U.S. *Federal Aviation Administration* Authorities in the recent audit that took place in Argentina within the framework of IASA Program.

Alongside these accomplishments, the State's Agency of Market Studies and Statistics[3] has been carrying out a new strategic planning programme to expedite and increase internal efficiency in ANAC, including the centralization of its statistical databases, which has allowed the necessary information to be made much more readily available at both the national level as well as to ICAO.

The Agency of Aeronautical Regulations and International Agreements[4], meanwhile has been overseeing its role with respect to:

a) Assessing—from the technical/legal standpoint—the legitimacy of every commercially-oriented request submitted to the Administration. This very broad-based responsibility ranges from approvals of special flight permits to the analysis of pertinent mergers and acquisitions
b) Assessing and reporting on the development of bilateral agreements and other proposals and actively intervening in the resulting negotiations. This constitutes a fundamental role in Argentina's international relations with respect to commercial aviation.

In short, based on the clear guidelines established by the National Administrator and the implementation support provided by the National Air Transport Agency, the Agency of Aeronautical Regulations and International

Agreements is fulfilling its mission to respond to all commercial air related issues—at both the national and international level. This has been achieved by outlining a clear set of policies that have been geared to the promotion of efficiency and carried out by skilled professionals.

International Actions

In the international context, it is noteworthy that ANAC's relationships with ICAO and the Latin American Civil Aviation Commission (CLAC) have become stronger and more productive in recent years. This has been the result of a direct policy initiative promoting increased participation in these and other bodies, and which has stressed: increased presence in international fora; more active participation; the appointment of representatives with technical knowledge who are highly-qualified in pertinent areas of interest.

As a result of these objectives and policies, the Argentine Republic has regained its central role in the international arena, not to mention the recognition and approval of other ICAO Member States and the Organization itself at an institutional level.

Some of the activities Argentina can highlight in this regard include:

1. In the 34th Session of ICAO's Legal Committee (September 2009), Argentina's representation was headed by the National Director of Air Transport. Not only did it take part in the most active working groups (including the Drafting Committee), but also made original doctrinal contributions that enabled ICAO to overcome some existing difficulties that had previously prevented parties from reaching consensus on the delicate issues under debate.
2. Participation in ICAO's Diplomatic Conference on Aviation Security (Beijing, August 2010), where the new conventional texts of the above mentioned proposals submitted by the Argentine Republic were permanently incorporated.
3. Ongoing presence in the Latin American Civil Aviation Commission (CLAC), with special active participation by experts appointed by the National Air Transport Agency in the successive meetings of the Group of Experts in Political, Economic and Legal Affairs (GEPEJTA).
4. Recognition for outstanding participation by ICAO's Legal Committee, which has since asked Argentina to join a select group of States that work in close collaboration with the Committee on varying subjects and ad hoc groups. Argentina takes great pride in this acknowledgement of our work in the international legal sphere. ANAC has consequently appointed an expert from its National Air Transport Agency to serve as permanent representative to ICAO's Legal Committee.

In every sense, ANAC has also made a strong commitment concerning the issue of climate change. Together with Argentina's Foreign Office, it has taken a leadership role to encourage initiatives in this regard and also to serve as the voice for the common interests of many ICAO Member States. This was particularly relevant in the High Level Meeting on Aviation and Climate Change (October 2009), the 37th Session of the ICAO Assembly (September/ October 2010), and the 26th Meeting of the Group of Experts in Political, Economic and Legal Affairs (GEPEJTA, March 2010).

All of these events are a testimony to the significant importance that Argentina has placed on climate change issues, in line with ongoing concerns and related mitigation efforts worldwide. ■

Footnotes:

[1] NT: Dirección de Explotación de Servicios Aerocomerciales
[2] NT: Dirección de Infracciones Aeronáuticas
[3] NT: Dirección de Estudios de Mercados y Estadísticas
[4] NT: Dirección de Normas Aeronáuticas y Acuerdos Internacionales

Argentine AMHS System Maintenance

Skysoft Servicios S.A. is an Argentine company that specializes in the installation, operation and maintenance of USA-based Radiocom, Inc. systems. Skysoft provides the Administración Nacional de Aviación Civil (ANAC) a service based on a maintenance contract that ensures the continued operation of equipment, system components and central server software of the AMHS Extended Service System that is installed countrywide. This system works day after day guarding the safety and integrity of the communications for National Aviation.

Argentina was the first country in America to have an AMHS system and is currently the only State that has 3 Message Transfer Agents (MTA) connected between each other, covering the needs of the entire nation.

The maintenance investments carried out by ANAC ensure that their AMHS system is kept operational 24 hours a day 365 days a year. Since factory warranty expiration, ANAC maintains a preventive and corrective maintenance contract, ensuring high availability of the system.

In addition to the principal system, ANAC also has an AMHS system in its Training Improvements and Experimental Center (CIPE) located in the Ezeiza international airport facility. This system is also covered by the maintenance contract as it is not only used as a training system, but it is also interconnected as a back-up to the main system.

The benefits associated with the investment in a maintenance contract are related to the safety, reliability, efficiency and functional continuity of the systems. It is particularly important for those systems that require “high availability” within a maximum reliability environment.

Skysoft Servicios has maintained the AMHS systems installed in Argentina since 2005, as well as Paraguay, Guayaquil, and Ethiopia and Venezuela since 2010.

Skysoft Servicios thanks ANAC for their confidence and successive maintenance contracts and for their commitment to carrying out the necessary tasks to achieve the correct functionality of the AMHS systems for the safekeeping of the Aeronautical Activity in the Region. ■

For more information contact Skysoft Servicios at skysoftservicios@radiocominc.com

Aerolíneas Argentinas 60 Years of Dedicated Service

Aerolíneas Argentinas was founded in 1950 by then President Juan Domingo Peron as the national airline of Argentina.

Over the ensuing decades, Argentina's new State carrier forged a reputation for customer service both domestically and internationally, while pioneering the adoption of new technologies. In 1959 it was the first airline to operate a jet aircraft (the Comet IV) in the South Atlantic, and in 1961 a Comet completed the first round-the-world voyage. In 1966, a Boeing 707 completed the first non-stop flight between Madrid and Buenos Aires in 11 hours and 30 minutes—a new world record.

These pioneering developments continued during the '70s as Aerolineas Argentinas expanded its business. Cargo operations were initiated, electronic reservations services were introduced, the first transpolar flight by a commercial aircraft was completed and AR continued to be a source of pride and a symbol of accomplishment for Argentina.

The next twenty years presented AR with extremely demanding challenges due to political and economic turmoil both domestically and internationally. It battled through more than one ownership change and privatization, until the government re-acquired the airline in 2009.

As AR re-structured for its future, orders were placed for a fleet of 20 new Embraer aircraft and two new Boeing 737-700NGs. Additionally a new connection was implemented directly linking four of Argentina's provinces in 2010. In 2011 the airline joined the SkyTeam Alliance and was reinstated in the IATA Clearing House.

Aerolíneas Argentinas then and now. Since the 1950s the carrier has been a source of pride and accomplishment for Argentina. It added a million new passengers over 2009-10 and is once again expanding its routes and business units to better serve its State and the world.

Today, AR is a model carrier featuring passenger-driven and flexible schedules that boosted its traffic by 1,000,000 passengers between 2009 and 2010. It has re-opened service to formerly served destinations, such as Mexico, and is undergoing a significant operational and financial revitalization.

With this continued commitment to service and leadership guiding its recovery, Aerolíneas Argentinas has once again reclaimed its status as the flagship State carrier, connecting people domestically and around the world and reviving the spirit of modernization and pioneering success that was its hallmark at its 1950 inauguration. ■

Highlighting Argentina's SMS and SSP Progress

In December 2010, the National Civil Aviation Authority of the Argentine Republic (ANAC) began to implement a State Safety Management System (SMS) for Civil Aviation in the Argentine Republic as part of the State's broader State Safety Programme (SSP) initiatives.

The National Civil Aviation Administrator, Alejandro A. Granados, convened a group of experts to draw up an SSP Implementation Plan that strictly follows the processes suggested in the ICAO Safety Management Manual (Doc 9859) and the ICAO SSP implementation course.

Varying national authorities sent representatives to this meeting as the implementation of an effective Argentine Republic SSP would require its diverse civil aviation agencies to cooperate more comprehensively.

Stage I of these consultations produced a SSP Implementation Plan encompassing the following activities:

- Establishment of a Working Group.
- System description.
- Gap analysis.
- Appointment of an SSP Manager.
- Project Communication.
- Internal Training Programme.
- Formulation of an Implementation Plan.

In March 2011, Argentina's National Civil Aviation Administrator passed the SSP Implementation Plan, thus completing Stage I of the SSP requirements.

The proposal for the development of SSP Stages II and III in Argentina includes an activity schedule which would enable completion of its new SMS as per both ICAO's and other international safety audit requirements. As reported in the SSP Implementation Plan currently being proposed by the Argentine Government, these stages are estimated to be completed as of 31 July 2013.

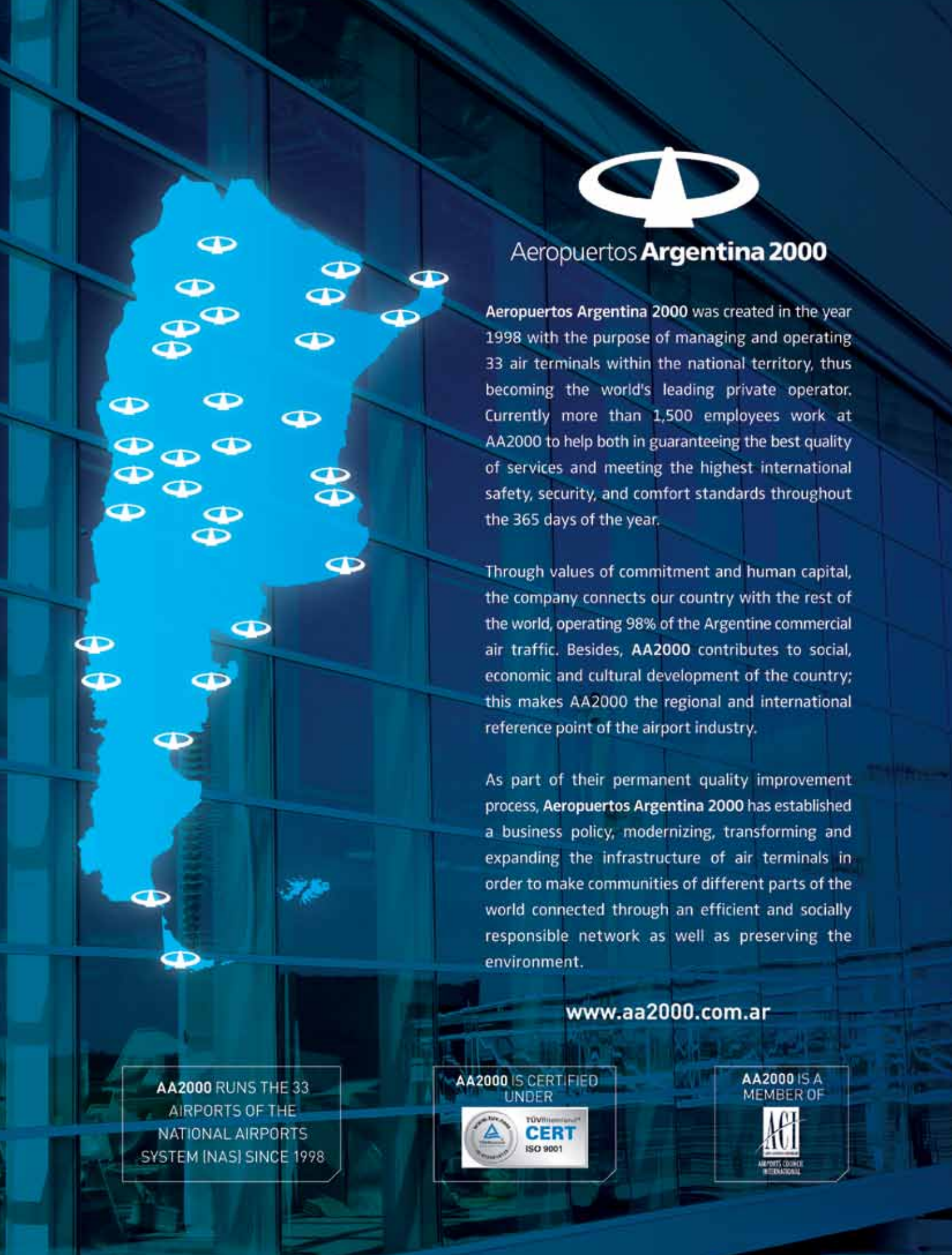
As part of its SSP-related initiatives, ANAC is also offering an internal training programme on Operational Safety Management (OSM) for its inspectors in order to provide the necessary support to industry in the implementation of the SMS. Additionally, every aeronautical service provider will be requested to review and approve the related safety provisions.

The first of these courses took place from 30 May to 3 June 2011, on the premises of Centro de Instrucción (CIPE). It marked the beginning of an ambitious training plan during that year that included 12 separate courses made available in different ANAC headquarters. Once the necessary resources are available, ANAC intends to undertake a similar external training programme to support the industry.

Within the OSM Training Programme, an e-learning course for beginners is being developed for Argentine Civil Aviation personnel, in order that they can become familiarized with the policies, goals and basis of the OSM. The e-learning course also provides a description of operational safety responsibilities, including procedures entailed in operational safety reports.

ANAC also sponsored and took part in the 12° JORNADAS INTERNACIONALES DE GESTIÓN DE LA SEGURIDAD OPERACIONAL[1] in June 2011. The event it hosted, entitled "Implementation of the State Safety Programme Management System (SSP) and Safety Management Systems (SMS): Applicability, Experiences and Opportunities", constitutes another step forward by Argentina's aviation authority as it continues to fulfil its commitment to meet or exceed all internationally-agreed levels of operational safety management. ■

[1] TN: 12th International Workshop on Operational Safety Management.



Aeropuertos **Argentina 2000**

Aeropuertos Argentina 2000 was created in the year 1998 with the purpose of managing and operating 33 air terminals within the national territory, thus becoming the world's leading private operator. Currently more than 1,500 employees work at AA2000 to help both in guaranteeing the best quality of services and meeting the highest international safety, security, and comfort standards throughout the 365 days of the year.

Through values of commitment and human capital, the company connects our country with the rest of the world, operating 98% of the Argentine commercial air traffic. Besides, **AA2000** contributes to social, economic and cultural development of the country; this makes AA2000 the regional and international reference point of the airport industry.

As part of their permanent quality improvement process, **Aeropuertos Argentina 2000** has established a business policy, modernizing, transforming and expanding the infrastructure of air terminals in order to make communities of different parts of the world connected through an efficient and socially responsible network as well as preserving the environment.

www.aa2000.com.ar

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Coordinated Progress

ANAC's Five-year Plan for ATM Development

As of 1 July 2009, Argentina's Administración Nacional de Aviación Civil (ANAC) assumed control of the country's civil aviation functions. This process followed the established guidelines for Collaborative Decision Making (CDM), a joint government/industry process aimed at improving Air Traffic Management (ATM) through increased information exchange among aviation stakeholders.

ANAC ATS CHALLENGES ADDRESSED SINCE 2009

The Argentine civil aviation administrator has pursued an aggressive and proactive policy of modernization for the State's air traffic infrastructure since 2009, as itemized here.

Late 2009 - Consultations with ATC Stakeholders

ANAC conducted a comprehensive meeting in order to address interrelated ATC issues such as amenities, services and staff development, as well as updates to pertinent administrative policies, procedures and operational reference resources. This meeting yielded a detailed view of urgent ATC requirements and established a five year Development Plan that continues today to address ATC planning and operational needs in Argentina.

Early 2010 – Approval of the ATC Development Plan

The five year plan was presented to the National Administrator for approval and amendment in early 2010. After due consideration and incorporation of related suggestions, work was commenced on a wide range of projects, including but not limited to:

- Installation of 23 secondary radar sensors developed and built by the INVAP Argentina Company in various geographical areas of strategic importance to address the need for coverage across all of Argentina's airspace. Thus far seven of these secondary radar sensors have been installed while the remaining sensors are projected to be operational by late 2012.
- Implementing ADS-C for the Oceanic Sector Ezeiza and Comodoro Rivadavia.
- Implementation of SIDs and STAR procedures for varying regions, employing GNSS Terminals.
- Service Approach Radar development at Ezeiza and Jorge Newbery Airport.
- Development and implementation of Air Traffic Flow Management (ATFM) in Argentine airspace. The required AFTM development stages have already been established and the purchase of necessary software has been undertaken.
- Flexible Use of Airspace (FUA). Coordination has been initiated to establish a specialized civil/military committee which will determine how to reduce restricted airspace areas on a gradual and programmatic basis.
- Implementation of meteorological information utilizing the INDRA system at EZE ACC, APP and APP EAR EZE.
- ACC Resistance Upgrade. Two INDRA workstation were installed with Frequentis automatic voice processing (VCCS) for both the ACC and to the control tower.
- Providing ACC Resistencia with radar sensor information from the radar sensors already installed (PARANA, CORDOBA) and the ones to be installed in the near future.
- New ACC project in Comodoro Rivadavia with INDRA technology to integrate all the radar sensors to be installed in Argentina's Southern territory (includes new buildings and equipment for both the ACC and for remote VHF stations EAVAS).
- Service radar implementation in the FIR Mendoza, Cordoba FIR South and North Ezeiza FIR upper airspace.
- A larger study is being conducted to restructure the Argentine route network based on traffic flows.
- Implementation of the TRACON concept at Air Terminal Buenos Aires.
- Implementation of dual frequency in the FIR EAVAS EZE for the purpose of mitigating interference with existing channels.
- Installation of VHF command consoles at ACC and TWR Ezeiza in order to provide alternate means of communication in case of failure of existing VCCS system.
- Installing new VCCS at ACC Mendoza.
- AMHS MTA's interconnection with Peru, Brazil, Chile, Spain and Paraguay.

As part of the CDM process, ANAC has conducted regular meetings since October 2009 between Air Traffic Services (ATS) heads, service providers, commercial airlines, military authorities, etc. These consultations have led to planning and modifications that include:

- New services (extension of radar coverage to provide radar services throughout the Argentine airspace, ADS-C in the oceanic airspace).
- The restructuring of airspace (implementation RNAV 5).
- A reduction in the amount of restricted airspace used for military training.
- Implementation of augmentations for terminal area procedures (incorporation of PBN procedures; amendments to Doc 4444 “new flight plan 2012”).

Many of these developments are detailed in the sidebar on the following page.

With respect to its need for skilled personnel and more specifically for providers of ATS, ANAC has been conducting a detailed staff review process. This priority has emerged primarily due to the fact that many of the professionals who provided ATS services (ARO-AIS; COM; ATCOs; technicians) were almost exclusively military personnel who now must choose whether to continue their military careers or move into public positions.

Due to its staffing priorities, ANAC is therefore pursuing an aggressive hiring and training programme during 2011, with more than 100 Air Traffic Controllers (ATCs) receiving ongoing training since the beginning of the year. A coordinated personnel search was also initiated in mid-2011 to address the projected 250 ATS positions that will need to be filled in the short-term. ■

Providing Leadership and Commitment on State and Regional Training Objectives

Human resources are the foundation of any effective organization. The presence and influence of skilled personnel ensures the focused evolution of organizational capacites and planning.

This reality underlies the high importance for organizations of providing ongoing and carefully considered training to maintain and enhance their personnel skill levels. Since its creation in 1960, under the General Plan for the Technical Co-operation Programme carried out with the United States Administration (Decree Law 11,201/57), Argentina's primary aviation training facilty, the Centro de Instrucción, Perfeccionamiento y Experimentación (CIPE), has striven to become a leader in the training of skilled safety and security personnel.

The CIPE received ICAO recognition as an official Regional Civil Aviation Training Centre in 1975. It became a full member of the ICAO TRAINAIR Programme in 1994 and was further recognized in 2004 as a qualified Regional Centre for Government Safety Inspector Training—*Airworthiness* tobase don the results of the comprehensive ICAO Universal Safety Oversight Audit Programme (USOAP).

A student trains on a simulator in Argentina's primary aviation training facilty, the Centro de Instrucción, Perfeccionamiento y Experimentación (CIPE). In 2010 the CIPE trained more than 1,000 national as well as international students, most of them coming from Latin America and Africa.

ICAO also designated CIPE as a Sub-regional Aviation Security Training Centre for South America (ASTC) in 2004 and as a qualified Regional Centre for Training in Latin America Aviation Regulations (LAR) for the Member States of the Safety Oversight Regional System in 2007. CIPE is therefore qualified to issue certifications with international validity on the basis of this exclusive membership status.

In 2009, the CIPE became the oficial training centre of Argentina's National Civil Aviation Administration (ANAC) of the Ministry of Federal Planning, Public Investment and Services. This status has provided the CIPE with the recognition and resources it requires in order to maintain its commitment to deliver Argentina's and the South American region's civil aviation sector with high-level training offerings and a very skilled workforce.

The CIPE Today

The CIPE currently offers a wide range of training and specialization options in the areas of security and safety, with more than 60 courses (operational, technical, management, TRAINAIR, AVSEC, Aviation English) available to its students.

The Centre's specialized training instructors, together with its state-of-the-art facilities, ensures the quality and the excellence of the training services it provides. These resources include an air traffic procedure simulator, a 3-D aerodrome simulator, as well as a radar simulator. In addition to its simulators, CIPE also maintains a functioning dangerous goods lab and a public library with specialized documents relating to a wide range of aeronautical activities and other topics of concern and interest to its trainees and instructors.

In 2010 the CIPE trained more than 1,000 national as well as international students, most of them coming from Latin America (Bolivia, Brazil, Chile, Colombia, Ecuador, Nicaragua, Panama, Paraguay, Peru, Dominican Republic, Uruguay, Venezuela) and Africa (Angola).

In addition, it provided consulting services and specialized assistance in technical and operational matters related to safety and security on the basis of requests from different ANAC sub-bodies and other extra-institutional organizations related to civil aviation.

The CIPE is also responsible for certifying instructors in varying aeronautical domains and is currently developing more competency-based training and certifications for ANAC personnel in order to adapt itself to the latest in training theory and practice to ensure that it remains a global and regional leader in all areas of aviation training provision.

With respect to the ongoing fulfillment of the CIPE's purpose and mission, it has pursued increased nationalization and expansion of its training offerings to ensure the highest posible geographic distribution and availability of its services. To this end the CIPE has established three sub-regional centres in Argentina which provide aerodrome staff nation-wide with the opportunity to receive instruction tailored to their specific needs at a standardized quality level.

SSP Implementation and other Accomplishments

The CIPE has been charged with developing and implementing Argentina's State Safety Programme (SSP) training course, as well as an aviation English training course for pilots, ATC and security staff to achieve Operational Level-4 according to ICAO's latest Language Profeciency Requirements. As regards some of the challenges more commonly encountered when providing

training and certified ratings in aeronautical English, the CIPE held the first-ever Latin American ICAEA (International Civil Aviation English Association) Seminar on 29–30 September 2011 in order to better standardize associated criteria surrounding both processes.

A separate publishing and library-services arm of the CIPE, its new Instruction Centre, was also set up this year with the intention of better promoting and recording the centre's significant scientific production and its contributions to research in many areas of aeronautical development. This production and cataloguing of published material is absolutely relevant to the recovery, preservation and dissemination of its knowledge and research.

The CIPE Instruction Centre has also developed, in collaboration with the Provincial University of Ezeiza (UPE), a Postgraduate Aviation Security Seminar. This seminar focuses on providing assistance to train Specialists in the Prevention of Unlawful Interference by means of preventative security measures, as well as methods of response against organized crime and terrorism. It also concentrates on creating an academic and professional network for more effective sharing of research and developments in this domain.

The CIPE maintains close lines of communication and strong relationships with the entire State and regional aviation community, including other training organizations, industry stakeholders, airport facilities managers and even average citizens who show an interest in general aeronautical domains—particularly security.

Ongoing Projects

Due to the very high demand today for more effective management personnel in the aviation sector, the CIPE is working on a new university course offering (a five-year degree in Airport Management) with diverse specializations that include air traffic and airport management, among others. This new course seeks to improve the skill levels and availabilty of aviation professionals on an academic basis in order that they may improve State performance in a wide range of aeronautical duties and functions.

In order to stay abreast of latest developments and implement new strategies in terms of teaching improvement and updating, the CIPE is developing a new e-learning platform that will provide new and more convenient and cost-effective learning opportunities at both the national and international level. ■

For more information on the developments noted in this profile, or any other queries concerning the CIPE's taining offerings and infrastructure, please contact it via: **infocipe@anac.gov.ar**

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Ministerio de Planificación Federal, Inversión Pública y Servicios
Presidencia de la Nación

Secretaría de Transporte
Presidencia de la Nación

Defining the Airport of Tomorrow

Twenty-first century airports will be more congested, as facilities become faced with accommodating significantly larger numbers of passengers through their existing terminals. Airports Council International (ACI) currently projects associated passenger totals to double in the next twenty years. In addition to congestion issues, airports and their customers are also faced with the challenges presented by emerging risk-based security frameworks, employing the more comprehensive and efficient sharing of Advance Passenger Information (API).

Craig Bradbrook, Director of Security and Facilitation for ACI World, and David Stewart, Head of Airports and Ground Handling Operations for IATA, spoke to the Journal about the technologies and procedures now being implemented to address the complimentary needs for both improved security and passenger convenience in the airport setting.

Airports are in the business of managing flows: flows of aircraft, vehicles, cargo, baggage, information and, of course, passengers. Security checkpoints typically create bottlenecks in passenger flows and sector partners are therefore working today on a variety of measures to help improve processing rates.

Managing the real-time security operation at airports is challenging and there are many factors which can impact on the quality of related security outcomes. This represents a huge challenge in the coming years, especially given the serious implications to aggregate air transport convenience if more onerous screening requirements are introduced in airports to counter the constantly evolving terrorist threat.

It's against this backdrop that a new, risk-based approach to passenger screening is now emerging. Air transport partners need to discern more advanced methods to effectively differentiate between the vast majority of passengers who present very little risk, and the small minority that represent a higher risk and warrant more stringent screening measures.

"Today's international terrorists have demonstrated a deftness for adapting their methods of attack to exploit perceived vulnerabilities," began Craig Bradrook, Director of Security and Facilitation for ACI World. "There is a growing recognition among regulators and operators, including airports, that a risk management approach is needed as we simply don't have the resources to treat all risks equally."

Bradbrook highlighted that a recent ICAO Universal Security Audit Programme (USAP) report indicated that there was a deficiency in the quality assurance oversight of aviation security in some States. He remarked on the importance of airport managers understanding these factors and employing a systematic approach to managing and quality assuring airport security.

"There is potentially an opportunity for ICAO and ACI to work together to address the security quality assurance deficiency, noted Bradbrook. "Improved cooperation with ICAO and local regulators in this area could help airport management identify the higher risks and focus our resources accordingly. In tandem, we might also be able to identify and discontinue measures which, based on newer risk-assessments, are no longer warranted."

The passenger screening process in many cases is implemented by the airports, either directly or through a security contractor. Airport managers are therefore very interested in looking at new approaches to passenger screening and in helping to determine the 'sweet spot' they require with respect to integrating intelligence, regulation, technology, process and human factors.

"Aviation needs to bring all these stakeholders together to find that sweet spot and ACI is very pleased

"Improved cooperation with ICAO and local regulators in this area could help airport management identify the higher risks and focus our resources accordingly. In tandem, we might also be able to identify and discontinue measures which, based on newer risk-assessments, are no longer warranted."

Craig Bradbrook, Director of Security and Facilitation for ACI World

that ICAO is forming a Technical Advisory Group, to coordinate this work," Bradbrook stressed.

Given that improved data access and sharing will feature so prominently in any risk-based security solutions, ACI recently launched a new initiative called ACRIS to facilitate data communications between major air transport stakeholders. The objective of the ACRIS project is the consistent adoption of Service Oriented Architecture (SOA) principles across the airport community, in a coordinated effort.

"IT systems and applications tend to be proprietary today, with interfaces invariably requiring expensive and time-consuming local customization," Bradbrook stated. "This makes for an unacceptable business case. ACRIS, by establishing a standard interface based on SOA principles and established Web Consortium protocols, is providing a more standardized 'plug and socket' for end users. This opens up a whole range of possibilities for operators on the airport platform to exchange information that enhances existing operations and facilitates new services."

In April of this year, ACI's World Governing Board approved a new ACI Recommended Practice for ACRIS and an ACI Working Group has been tasked with the develop-ment of technical specifications and proving trials.

These and other priorities associated with maintaining safety in the face of projected growth, real-time operations management and reduced 'operational buffers' caused by much busier airport environments in general, as well as the ongoing environmental and commercial responsibilities airports have to the communities and shareholders they serve, will be guiding ACI's activities for the foreseeable future.

IATA's Airport-related Concerns

IATA's Fast Travel initiative is the airline association's main strategy for near-term airport modernization and improvement. It consists of five priority projects designed to offer a range of self-service options that give passengers more control over their journey. Fast Travel implementations also help IATA's carriers to reduce their operating costs while improving service to passengers.

"IATA's main goal is to reduce airline costs and enhance the passenger experience by offering a range of self-service options," commented David Stewart, Head of Airports and Ground Handling Operations for the International Air Transport Association (IATA). "You have to keep in mind that airports are very complex structures that have a per-square-foot construction cost in the area of $5,000 USD—the equivalent of a hospital in that respect. Many of the Fast Travel initiatives IATA has moved forward have been designed not only to eliminate hassle and empower travelers with more self-service options, but also to reduce the space that needs to be devoted to these functions in the airport."

Stewart highlighted that IATA is proceeding with its Fast Travel programme based on a philosophy of 'constructive engagement' with its airport partners. Whereas some facilities are less-inclined to partner on these types of advances, depending on the jurisdiction involved and the specific operational guidelines being adhered to, most are very eager to facilitate the technology implementations and day-to-day trials that are helping to make the passenger experience faster and more enjoyable today.

"Many facilities and authorities are primarily interested in ensuring that any proposed implementations align well with the strategies and operations of other stakeholders in the airport," Stewart noted. "A good example that comes to mind is Heathrow and Air Canada. The carrier in that instance had been doing a lot of self-tagging domestically and was looking to see how it could work internationally. In this particular instance the British Airports Authority (BAA) saw the merit and appropriateness of the Air Canada initiative and facilitated a cooperative environment where real progress could be seen."

When asked if IATA has any concerns about the amount of passenger data now being leveraged by latest technologies for improved security and facilitation processes, Stewart was very clear that his association's primary concern is to ensure compliance with all applicable regulations.

"Technology is a great enabler for reducing costs, enhancing security, and makingthe passenger experience better. But we do not want to lose the human element in the process," concluded Stewart. "IATA's projects purposefully deploy technology where it is most appropriate and keep people in the loop, while working to ensure that data remains secure and that local privacy laws are respected." ■

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Addressing Threats while Respecting Passengers

Strengthening and streamlining the passenger and cabin baggage screening process is a significant priority for airline and airport stakeholders such as the International Air Transport Association (IATA) and Airports Council International (ACI). ICAO remains fully engaged with these and other sector partners in the development of future checkpoint recommendations and associated screening processes.

An ICAO Workshop on the Next Generation Passenger and Cabin Baggage Screening Process and Checkpoint, hosted by IATA and ACI in Geneva in late 2010, identified ten key work-streams for stakeholder action and attention in this area and created a new Technical Advisory Group (TAG) to review related technologies and procedures.

The Journal spoke recently with James Pope, Chairman of the new TAG and Director of Aviation Security Regulatory Affairs at Transport Canada, Craig Bradbrook, Director of Security and Facilitation for ACI World, Ken Dunlap, Security and Travel Facilitation Director for IATA, in addition to Steven Berti and Anda Djojonegoro of the ICAO Secretariat, about the work and priorities ahead as air transport seeks a more harmonized checkpoint approach that is fully effective in addressing evolving threats to civil aviation while respecting passenger privacy and convenience.

During the ICAO 37th Assembly, the 'Checkpoint of the Future' initiative (as it has more commonly become known) was endorsed by ICAO Member States, underlining the global will to achieve consensus on this essential component of the twenty-first century travel experience.

Improved passenger and baggage screening were part of a larger set of aviation security measures endorsed in Assembly Resolution A37-17, which supported the ICAO Comprehensive Aviation Security Strategy (ICASS), including Strategic Focus Area number two: "to promote innovative, effective and efficient security approaches".

A follow-up ICAO aviation security workshop took place in late 2010 in Geneva and resulted in a clearer scope of activity and research and the creation of a new Technical Advisory Group (TAG) to oversee related efforts.

Before and since the Assembly's endorsement of these priorities, ICAO's Aviation Security Branch has been leading this process and seeking to ensure that all concerned organizations and States work together to improve deterrence, detection and prevention of potential terrorist attacks. These priorities are being pursued in the context of recent statistics indicating that commercial airlines and airports will have served 2.5 billion passengers during 2011—a 5 percent increase over 2010 with similar annual growth rates expected for the foreseeable future.

Defining a Checkpoint of the Future

These figures hit very close to home for the International Air Transport Association (IATA), an organization which has taken an especially pro-active posture with respect to defining the suite of data- and tech-based resources that could be brought to bear to provide the win/win solution for security stakeholders and passengers that the sector is today working toward.

"The Checkpoint of the Future concept is not envisioned as a rigid, one-size-fits-all solution, but rather as a menu of components and processes that can be deployed in part, in combination or in full, commensurate with the threat environment, needs and resources available to states and their stakeholders."

Ken Dunlap, Director, Security and Travel Facilitation, IATA

In June of this year it unveiled its version of aviation's possible Checkpoint of the Future at its 67th Annual General Meeting (AGM).

"Our priority in advancing the Checkpoint of the Future concept is to enhance security, but at the same time we want to respect fundamental human rights and ensure that passengers are treated in a way that respects their privacy, their property and their data," stressed Ken Dunlap, Security and Travel Facilitation Director for IATA. "That being said, our call for global standards must not be confused with the need for flexibility. The Checkpoint of the Future concept is not envisioned as a rigid, one-size-fits-all solution, but rather as a menu of components and processes that can be deployed in part, in combination or in full, commensurate with the threat environment, needs and resources available to states and their stakeholders."

The IATA Checkpoint of the Future concept foresees an end to the 'one-size-fits-all' basis for security. Passengers approaching the new checkpoint would be directed to one of three lanes: 'Known Traveler'; 'Normal'; and 'Enhanced Security'.

Determining which passenger gets sent where would be based on a biometric identifier in their passport or travel document that triggers the results of a risk assessment, before the passenger even arrives at the airport.

WORK-STREAMS IN SUPPORT OF PASSENGER AND BAGGAGE SCREENING ADVANCES

As decided at the ICAO Workshop on the Next Generation Passenger and Cabin Baggage Screening Process and Checkpoint, Geneva, Switzerland, 30 Nov–01 Dec 2010:

- Regulation.
- Differentiated screening.
- Threat identification.
- Risk tolerance and screening definition.
- Human factors, including those related to staff screening and passengers.
- Checkpoint optimization.
- Sharing best practices.
- Technology stakeholder management.
- Longer term vision.
- Definition of governance.
- Stakeholder forum.

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ICAO MRTDs, Biometrics and Security Standards

12 to 15 September 2011

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The three security lanes would feature embedded screening technologies defined by the level of risk associated with each. Known Travelers who have registered and completed background checks will have expedited access. Normal travelers would be the majority of passengers. Those travelers for whom less information is available, who are randomly selected, or who are deemed to be an elevated risk based on available information and intelligence, would be subject to an increased level of screening.

IATA's concept relies heavily on technology now being developed that would allow passengers to walk through the checkpoint corridors without having to stop to remove clothes or unpack their belongings. Moreover, it is envisioned that the security process could be combined with outbound customs and immigration procedures, further streamlining the passenger experience.

From IATA's standpoint, one of the most important concerns for industry and regulators alike is that the current checkpoint process is struggling to cope with even today's system capacity. IATA has reinforced that appropriate authorities, airlines, airports, technology providers and other bodies must dedicate significant resources and establish appropriate prioritization if solutions are to be delivered in time.

IATA'S CHECKPOINT OF THE FUTURE CONCEPT

Passengers approaching the new IATA checkpoint concept would be directed to one of three lanes: 'Known Traveler'; 'Normal'; and 'Enhanced Security'. Determining which passenger gets sent where would be based on a biometric identifier in their passport or travel document that triggers the results of a risk assessment conducted by government, before the passenger even arrives at the airport. With its new proposal IATA foresees an end to the 'one-size-fits-all' basis for security, improved overall security outcomes, and dramatically improved passenger privacy and convenience.

"Any new approaches will need to find the 'sweet spot' in integrating intelligence, regulation, technology, process and human factors. Our most important goal today is to bring all these stakeholders together to find that sweet spot and ACI is therefore very pleased that ICAO has formed the new TAG to coordinate this work."

Craig Bradbrook, Director of Security and Facilitation, ACI World

"The IATA plan takes us from where we are today, to an intermediate checkpoint that leverages today's technology, to a tomorrow with tunnels of technology for passenger screening," Dunlap stressed.

One of ICAO's key roles in the checkpoint process is to coordinate IATA's research and proposals with similar checkpoint improvement initiatives now underway or being considered. Although the case for change is clear and compelling, a lack of coordination with these initiatives risks engendering an inconsistency of requirements, standards and processes.

"The TAG's key role in the short-term will be to explore the new concepts being proposed, such as specialized lines, passenger data analysis and automated verification," commented James Pope, TAG Chairman and Director of Aviation Security Regulatory Affairs at Transport Canada. "It's important to stress, however, that all of these concepts and processes acknowledge and rely heavily on the importance of moving to a risk-based approach in security screening. This is without a doubt the key basis for any significantly improved passenger security screening experience."

On the airport front, Airports Council International's (ACI's) World Governing Board recently directed that the passenger's interest be a key focus of the airport body's future work. It has so far mapped the end-to-end passenger journey in the airport,

"It's important to stress that all of these concepts and processes acknowledge and rely heavily on the importance of moving to a risk-based approach in security screening. This is without a doubt the key basis for any significantly improved passenger security screening experience."

James Pope, TAG Chairman and Director of Aviation Security Regulatory Affairs, Transport Canada

clearly defining associated passenger needs and expectations for each stage along the way.

"The mapping process is improving our ability to identify the gaps and issues which are most impacting on the passenger journey," noted Craig Bradbrook, Director of Security and Facilitation for ACI World. "This will help us to prioritize our advocacy or education efforts, not to mention the development of new best practice guidance or technical solutions."

ACI's viewpoint is that there are two main questions to consider as screening research and solutions proceed. Firstly, how can the sector better coordinate its efforts to develop a new, risk-based approach to passenger screening for the future, and secondly, how can it work together to address the problems with the screening processes in the near term.

"The passenger screening process takes place within our terminals and in many cases is implemented by the airports, either directly or through a security contractor," remarked Bradbrook. "Any new approaches will need to find the 'sweet spot' in integrating intelligence, regulation, technology, process and human factors. Our most important goal today is to bring all these stakeholders together to find that sweet spot and ACI is therefore very pleased that ICAO has formed the new TAG to coordinate this work."

Short-term Screening Concerns: LAG Phase-out

With respect to harmonizing the security processes in the short term, Bradbrook feels that the biggest challenge facing industry is the coordinated lifting of restrictions on Liquids, Aerosols and Gels (LAGs) internationally.

"From the airport perspective, bottle-necks are invariably arising in the passenger flow," he highlighted. "In the past five years, the screening process has become more onerous due to the restrictions on the carriage of LAGs and the more generally enhanced passenger searches that have been required in response to the threat from terrorists more artfully concealing home-made explosives on their person."

The restrictions on the carriage of LAGs were always intended to be an interim measure. One which would be phased out when liquid explosive detection technology was available that would allow for the more routine screening of LAGs. Five years on and the present screening environment is still complicating the process for airport and State security staff while reducing the passenger throughput rate.

The European Commission has set a timetable for the lifting of the LAG restrictions in the EU as of 29 April 2013. This has injected a sense of urgency into the development of operational solutions for airports. Technology readiness is one major concern facing airports now facing this deadline, as is adapting the screening process to integrate the new technology while maintaining adequate throughput. Funding for facility changes, procuring new equipment and meeting the additional operating costs are additional challenges.

"ACI Europe and its members are actively working with the EC to address these issues ahead of the deadline," reinforced Bradbrook. "What happens in Europe has implications elsewhere, as passengers travel from Europe to and through airports in other regions and vice versa. If we have a situation where different rules on LAGs apply in different regions, or even between States in the same region, passengers will likely face problems at transfer screening points. We saw this before in 2006 and 2007, when large quantities of travel retail LAGs purchased by passengers during the journey ended up being seized or forfeited."

Given the importance to States and industry partners alike of avoiding a repetition of the 2006-07 scenario when LAG restrictions begin to be lifted in 2013, international coordination is essential. ICAO is therefore reconvening its Secretariat Study Group on LAGs specifically for this purpose on 12-13 December of this year in Paris.

"Our role in this process is to ensure that any European solution is properly

INDUSTRY WEIGHS-IN

One of the most important components of the next generation passenger and cabin baggage screening process and checkpoint is technology. In this regard, the December 2010 AVSEC Workshop in Geneva considered the characteristics and capabilities of various technologies, as presented by the following suppliers:

Smiths Detection stressed the importance of adopting a multi-layered approach to security, combining deployment of multiple and advanced screening technologies with intelligence. The company called for the adoption of an integrated, one-stop screening process using a range of advanced technologies such as high speed detection systems, and identified tactics such as randomness and unpredictability, as well as deterrence at a reasonable cost, as key considerations to be addressed. Smiths also cited the need for greater international coordination in developing interoperable and consistent system architectures.

Rapiscan Systems highlighted different ways to achieve checkpoint optimization, citing among other possibilities the integration of screening components as well as better technology interfaces to improve the process for both passengers and equipment operators. The company reviewed lessons learned from improvement efforts to date, stressing that low-tech aspects of checkpoint optimization are also important, and proposed future steps that could include the development of design guidelines for checkpoint optimization.

Gilardoni gave a presentation on a multilevel approach to screening that could improve the operational flow at checkpoints. The company described how screening technologies might be improved using passive terahertz imaging and spectroscopy, and also focused on the potential of new technology spectrometric detectors. The company stressed that it was not realistic to seek an 'all in one' technology for security applications, and recommended incremental technological improvements in parallel with checkpoint reorganization.

SITA reviewed border management issues and solutions and described the role of advance risk assessment using a variety of input, including advance passenger information, eVisa and biometric data, and its integration with passenger processing. Among solutions highlighted were the deployment of self-serve biometrics-enabled check-in stations and advance transfer of X-ray images of baggage and cargo to the destination. SITA advocated adoption of community-based approaches and solutions, including shared infrastructure.

L3 Security and Detection Systems reviewed the current screening challenges from the perspective of the airport or regulator as well as the passenger. The company underscored the need to evolve to a more comprehensive checkpoint designed to stop terrorists as well as prevent hijackings, and noted the advantages of utilizing automated X-ray systems for screening cabin baggage. L3 stressed that screening technology has to be viewed as one tool and not as the 'panacea' that will guarantee aviation security.

harmonized with other international efforts," noted Steven Berti, ICAO Chief, Aviation Security & Facilitation Policy. "The December Study Group will be looking into LAG issues and will be held in conjunction with a screening and checkpoint meeting to capitalize on the expertise and commonalities involved.

The Study Group will also be looking at ways to assist States to prepare for the implementation of security controls for LAGs in 2013. In this context, guidance material is important and should be developed as soon as possible. Such guidelines would assist States in the procurement of equipment and would ensure harmonization of the implementation of appropriate security controls.

"It is important to stress that, despite an ICAO recommendation, the LAG provisions are not implemented universally," remarked Anda Djojonegoro, Technical Officer. "Both the LAG Study Group and the AVSEC Panel are working now on defining a more globally-harmonized solution to improve passenger experience while providing effective security across all States and respecting the needs of industry."

Djojonegoro highlighted that ICAO is seeking specifically to avoid the 2006 circumstances whereby unilateral solutions to LAGs did become the practical reality for passengers, leading to confusion and inconvenience for passengers flying in and out of Europe and North America.

"Many of these issues mesh with the objectives and research now going on in the broader Checkpoint of the Future initiatives," concluded Berti. "The solutions we arrive at in the LAGs area will absolutely feed into the Checkpoint process. It's everyone's hope at this point that the complementary nature of these problems will help States and industry arrive at the required solutions in the short timeframe that industry growth projections are imposing on us." ■

Essential Support: ISD–Security

The primary objective of ICAO's Implementation Support and Development (ISD) Programme – Security (ISD – Security) is to support the corrective initiatives of ICAO Member States that have aviation security deficiencies as identified through the ICAO Aviation Security Audit Programme (USAP). It also promotes partnerships and collaborative agreements amongst States, industry, international financial institutions and various stakeholders to coordinate security assistance.

Key to the ISD's Security mandate is its suite of training programmes and a coordinated network of training centres. David Tiedge, Chief of the ICAO ISD – Security Section, and Cornelia Ludorf, ISD – Regional Coordinator EURNAT/MID and Technical Officer for Training, spoke to the *Journal* about the importance of the ISD contribution to ICAO's ongoing efforts to implement a more robust and proactive aviation security framework on a truly global basis.

The mandate for the Security Programme of the ISD was determined at the 36th Session of the ICAO Assembly through Resolution A36-3: *Implementation Support and Development (ISD) Programme – Security.* The ISD's operational mandate since this time has consisted of four main priorities:

- Providing States with urgent or short-term security-related assistance.
- Providing regional assistance to the States.
- Promoting global cooperation.
- Providing States with support in the development and delivery of training programmes.

"In a general sense, ISD – Security contributes to implementation support and development activities aimed at strengthening the capacity-building efforts of States," began ISD – Security Section Chief, David Tiedge. "Since 9/11 we've focused much more strongly on ICAO audit responsibilities and on enhancing State capabilities to implement international Standards and Recommended Practices (SARPs) through the development, organization and coordination of relevant training and assistance projects."

More specifically with respect to aviation security training, ISD – Security provides essential assistance to regional and national security training efforts by developing and delivering tailored training packages which support States in implementing the provisions of ICAO Annex 17 (Security). A global network of ICAO-endorsed Aviation Security Training Centres (ASTCs) are the backbone to this programme and assist in the development and delivery of training (see sidebar on next page).

GLOBAL NETWORK OF TRAINING CENTRES

ICAO's global network of endorsed Aviation Security Training Centres (ASTCs) includes 22 facilities worldwide. Besides the delivery of the ICAO-sponsored training activities, ASTCs are also required to develop and deliver a yearly programme of Regional Aviation Security Courses adapted to the Regional needs.

ICAO ASTC Network

Main Course Offerings and Workshops

ISD – Security provides seven traditional Aviation Security Training Packages (ASTPs—guided training material which can be purchased by States to support their own training efforts) and five specialized workshops.

The seven ASTP offerings range from the **Basic** course, which is designed to train entry-level airport security personnel in security measures and communications/cooperation roles with other airport agencies, to more focused and specialized training on **Crisis Management** and emergency **Exercise** planning, **Cargo** handling, **Management** fundamentals, **National Inspector** duties, and aviation security training **Instructor** preparation.

ISD – Security's workshops, meanwhile, provide focused learning in a more hands-on and interactive environment and are specifically meant to support States/airports in the development of the different security programmes required by ICAO Annex 17. There are presently five workshops offered on the following topics: Airport Security Programme; National Civil Aviation Security Programme; National Civil Aviation Quality Control Programme; National Civil Aviation Security Training Programme and Screener Certification Programme development.

Workshop material will always be taught by ICAO certified instructors and under the auspices of ICAO, either in an ASTC or as part of an assistance plan.

"Besides the basic curricula that characterize this training on a more global basis, ISD also tailors related assistance based on identified needs for a specific State or region, where applicable," highlighted ISD Technical Officer for Training, Conny Ludorf. "The course materials and the tailored assistance that complements its delivery therefore serve as the two pillars of our core approach, each supporting ICAO's goal of providing practical, coordinated security-related assistance to its Member States."

Aviation Security Professional Management Course

In addition to ISD – Security's ASTPs and workshops, the higher-level Aviation Security PMC serves as a middle and senior management-focused training programme that has been recognized as the most advanced currently available. It also carries a formal designation *(AVSEC PM),* making it the first of its kind in this regard.

The PMC programme's aim is to provide aviation security managers with updated skills and a greater understanding of the application of the SARPs contained in Annex 17, while maintaining a creative and pedagogic philosophy. Emphasis is also placed on the use of the *ICAO Security Manual for Safeguarding Civil Aviation against Acts of Unlawful Interference* (Doc 8973, restricted).

"The unique skills and understanding offered in the PMC have become mandatory in today's aviation environment," stressed Tiedge. "Aviation security managers are being called upon more and more today to perform complex and diverse tasks, and to display greater communica-tions and management capabilities to better meet the new and existing threats to civil aviation.

The PMC training methodology blends classroom and distance instruction via a web management system. This holistic approach not only significantly distinguishes it from any other training in this area, but also provides a flexible and stimulating learning environment which anticipates the unforeseens inherent in the hectic working environment of aviation security management personnel.

As a special incentive and tool for graduates, PMC students successfully completing the programme also gain permanent access to an exclusive e-Network community of aviation security experts, made up of PMC alumni.

"This community facilitates the sharing of information and optimizes the diffusion of knowledge relevant to international aviation security requirements, best practices and training strategies," added Ludorf. "This is a very practical and day-to-day benefit, but in a more long-term sense it also promotes improved intra-regional and international cooperation amongst its graduate members. This is important to the global aviation security framework that ICAO is constantly seeking to strengthen." ■

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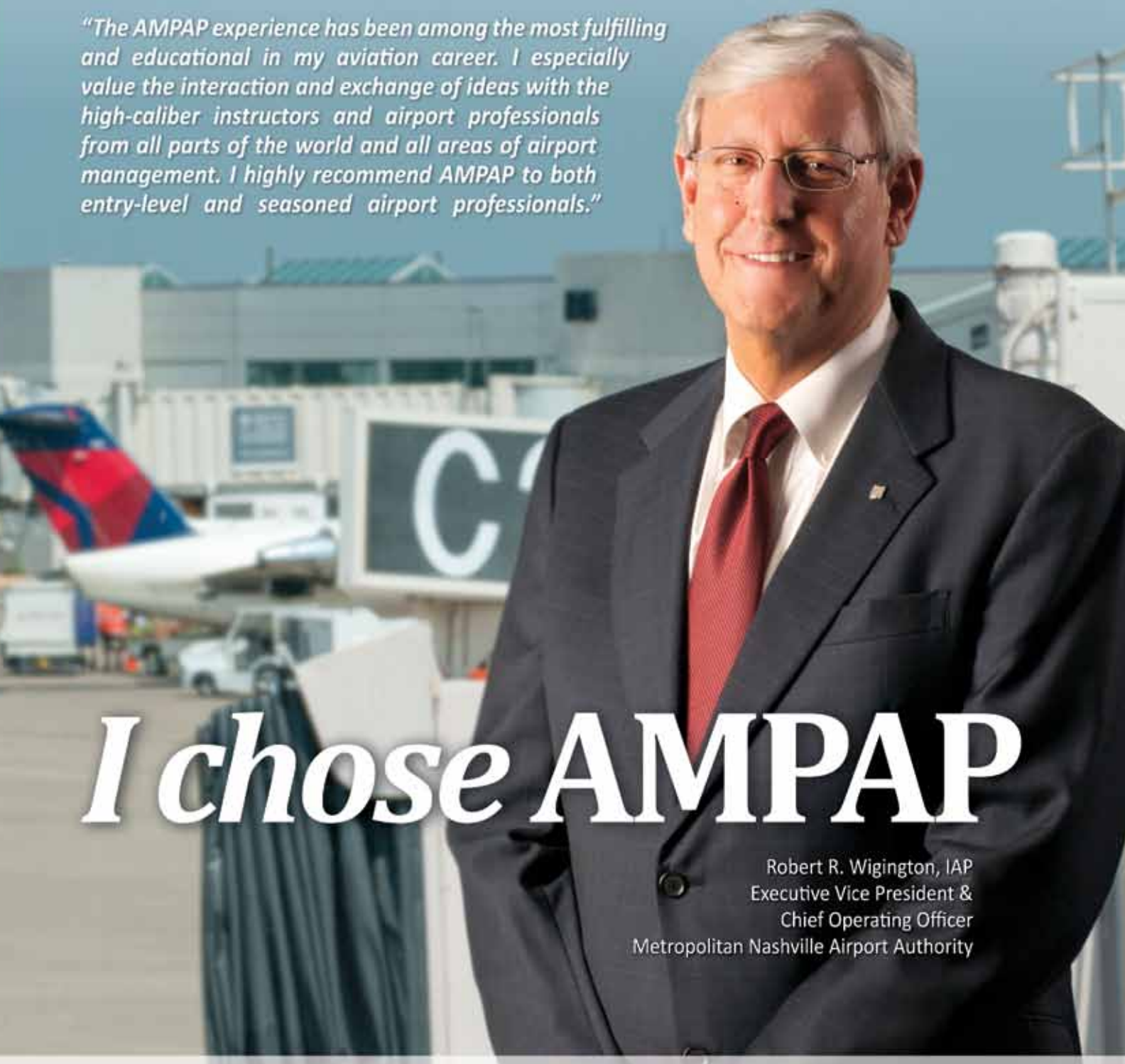

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AMHS in the Americas: The Early Days

In 2004 AMHS was still in its early stages, with little worldwide acceptance and even less implementation. However it was back then that the Argentine Air Force, in charge of the Civil Aviation Administration, decided a change was necessary.

The change involved the transition of Argentina's data communications systems from the legacy Aeronautical Fixed Telecommunication Networks (AFTN) to new technology in the shape of the ATS Message Handling System (AMHS) also known as the Aeronautical Message Handling Service. The International Civil Aviation Organization (ICAO) was strongly recommending and fully supported this transition to the new AMHS.

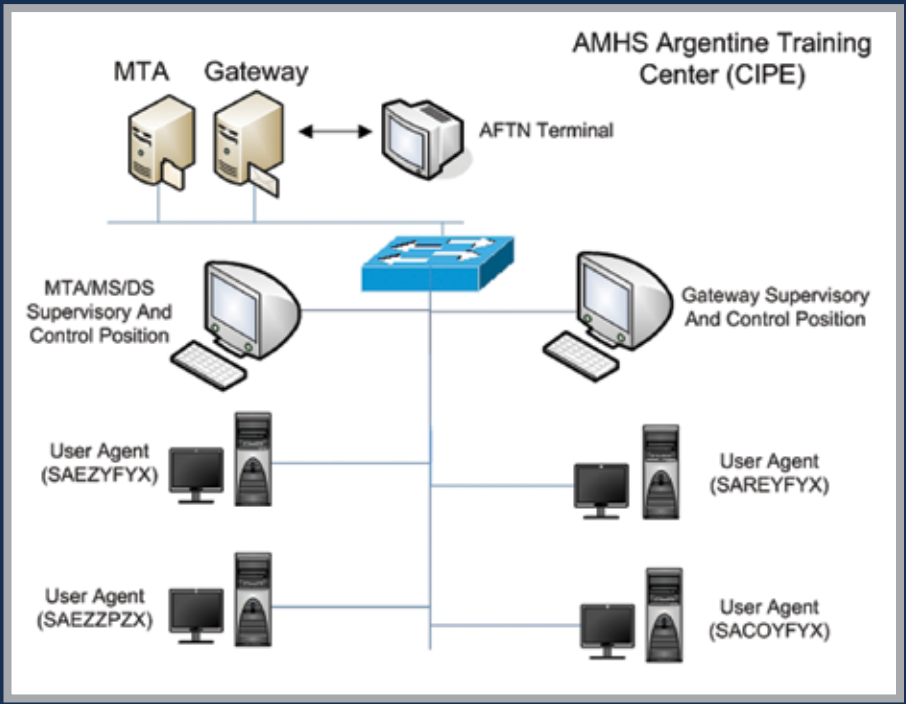
The Argentine Air Force contracted ICAO to prepare the technical specification of what was required and issued an international tender for the purchase of the system. This being the first system in the Americas, with no other clear reference of successful installations close by, the Argentine State wanted to be thorough and as such requested ICAO include operational trials to be carried out by all those offering a solution prior to them making a final decision. This meant that the systems had to be set up and shown in operation in Argentina, with all competing companies having to present their system in order for the local evaluation to take place.

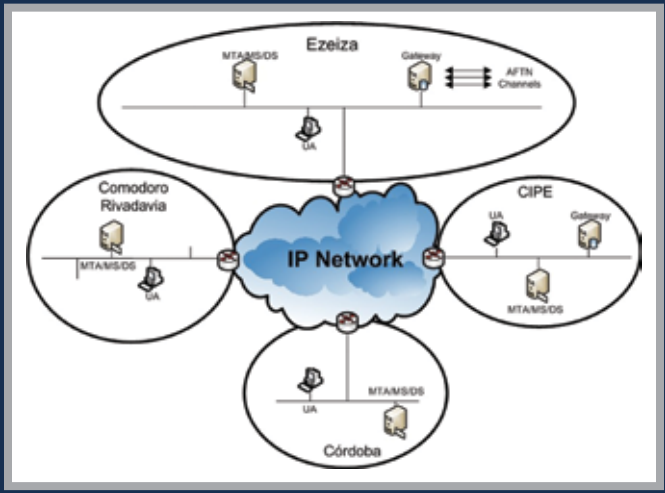
This test/trial was crucial to the final decision and, as such, it was important that each supplier confirmed that their working system had been integrated into the operational AFTN environment on a national as well as an international level. These trials were carried out over a one week period, where each manufacturer was assigned a day in which to set up their equipment and show the system in operation. The trials were carried out in the live working environment that is Ezeiza, with the system connected to the AFTN network and its operations under the control of the Argentine Air Force.

The trial requirement was to successfully send and receive messages.

Three companies presented themselves as bidders to this tender, including Radiocom. All three companies passed the tests, however due to its more complete fulfillment, compliance with ICAO SARPs and relevant documentation (at the time ICAO Doc9705), and its substantially lower price, in December 2004 ICAO awarded the Argentine AMHS contract to Radiocom, Inc.

The Argentine contract was all the more significant due to the fact that it also





included the provision and implementation of most of the ATN network required. This was previously non-existent for the operation of the AMHS system. The magnitude of the system was also significant; there were 87 airports across the country requiring installations with at least 188 terminals.

The concept was to begin implementations in parallel to the existing AFTN, carried out on a city by city basis. This process was greatly accelerated when only a short time after the signature of the Final System Acceptance Test (FSAT), the old AFTN system collapsed irreparably and the whole messaging network operation had to be loaded onto the newly installed Extended AMHS under emergency circumstances. This proved not only extremely successful but enabled the transition to be carried without having to, or in fact even being able to look to the older technology as a backup. Man and machine responded under the pressure of the situation and a potential aeronautical crisis was averted by the correct operation of both.

This reliability has been expected of AMHS systems worldwide and is key to its successful deployment. After all, this is a mayor change to a tried-and-tested method of working based on technology from another century, namely the AFTN networks still widely in use in many regions of the world.

And this is not just a financial issue; the reasons for resisting change are far more deeply rooted and based on method of operation in what is already a demanding environment. Operators are used to a way of working and are reluctant to give it up, even if the incoming technology is better and more suited to the development being experienced by the aviation world in general.

In 2007, the Argentine government decided to upgrade the system at the same time as installing a fully operational Extended AMHS Training Facility. The installation of an Equipment Systems and Services Data Bank, to monitor and record the operation of all Aeronautical Equipment on a country-wide basis, enabled a record to be kept of all relevant data referring to the equipment, right down to unit level, making it possible to carry out an efficient maintenance plan.

The Extended AMHS Training Facility was installed in the Training Improvement and Experimentation Center (CIPE) in Ezeiza. Additionally and more importantly, the AMHS in CIPE is a fully operational backup to the main system installed a short distance away in the airport, giving solid support should anything impair the main system from efficient operation.

This installation in Ezeiza nevertheless proved to be extremely reliable; however the end user was looking for more regional autonomy and a way in which to minimize hazard potential by eliminating any perceived or likely ‘Single Points of Failure’. In order to increase the required regional autonomy while reducing potential hazard occurrence, the Argentine State decided to invest in system expansion. This was achieved by incorporating two additional Message Transfer Agents (MTAs) in two key areas of the country that coincided with the Cordoba and Comodoro Rivadavia Flight Information Regions (FIRs).

The contracts were awarded by ICAO to Radiocom, who with installation support offered by Skysoft Servicios S. A., Radiocom’s agent for worldwide system installation and maintenance, proceeded to fulfill contract requirements. Work on both centers was carried out during 2008 and marked the first P1 connection between MTA’s in the Americas, making this a very significant event.

Additionally, in accordance with ICAO recommendations, the Argentine State has plans to update the flight plan form as stated in the Amendment 1 to the PANS-ATM Fifteenth Edition (PANS-ATM, Doc 4444), in line with the required time schedule that has set a full completion and implementation date of 15 November 2012.

On the whole, the transition plan for the ICAO CAR/SAM region from AFTN to AMHS has been very well executed. A large percentage of countries have already transitioned and what is left now is to continue the linking of individual MTA’s in order to have a fully operational AMHS network. This is being worked on and fully supported by the ICAO SAM Regional Office.

It is fair to say that we are still a ways off from a complete worldwide AMHS network, however with pioneers such as the Argentine State taking the lead in this transition and showing successful results, it is only a matter of time before the idea of the whole world communicating via AMHS becomes a reality.

Radiocom and Skysoft Servicios wish to thank the Argentine State for its confidence in Radiocom AMHS products and maintenance services given by Skysoft Servicios. ■

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