**COMISSÃO LATINO-AMERICANA
DE AVIAÇÃO CIVIL**

CLAC

**LATIN AMERICAN CIVIL
AVIATION COMMISSION**

COMISIÓN LATINOAMERICANA DE AVIACIÓN CIVIL

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LXXII REUNIÓN DEL COMITÉ EJECUTIVO DE LA CLAC

(Santa Cruz de la Sierra, Bolivia, 31 de julio al 2 de agosto de 2007)

**Cuestión 9 del
Orden del Día:**   **Otros Asuntos**

- **Participación de la CLAC en el 36° período de Sesiones de la Asamblea
de la OACI (Montreal, Canadá, 18 al 28 de septiembre de 2007)**

(Nota de estudio presentada por la FAA de los Estados Unidos de Norteamérica)

1.   Con fecha 27 de julio de 2007 se recibió en la Secretaría de la CLAC una comunicación de la FAA de los Estados Unidos de Norteamérica, en la que solicitan a la CLAC la copatrocinación de las siguientes Notas de Estudio para el 36° período de sesiones de la Asamblea de la OACI.

- Cuestión 25: ICAO Safety evaluations/audits of international air operators (**Adjunto 1**)
- Cuestión 28: Analyzing precursors of accidents: The need for a common approach (**Adjunto 2**)
- Cuestión 15: Coordination of security assistance provided by States (**Adjunto 3**)
- Cuestión 23: "Benefits of electronically sharing aeronautical information publications (AIP) among ICAO Member States" (**Adjunto 4**)
- Cuestión 31: Transforming today's air transportation system to meet tomorrow's challenges (**Adjunto 5**)
- Cuestión 30: "Addressing Unmanned Aircraft System (UAS) accident investigation and prevention by ICAO Member States" (**Adjunto 6**)
- Cuestión 34: ICAO collaboration on Frequency Spectrum Requirements for Unmanned Aircraft System Operations (**Adjunto 7**)
- Cuestión 13: Vision for the future of USOAP following completion of the current audit cycle (2005-2010) (**Adjunto 8**)

Medidas propuestas al Comité Ejecutivo

2.   Se invita al Comité Ejecutivo a revisar las Notas de Estudio presentadas por la FAA y decidir sobre su copatrocinación.

A36-WP/

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ASSEMBLY – 36TH SESSION

TECHNICAL COMMISSION

Agenda Item 25: **Follow-up of the DGCA/06 Conference on a Global Strategy for Aviation Safety**

**ICAO SAFETY EVALUATIONS/AUDITS
OF INTERNATIONAL AIR OPERATORS**

(Presented by the United States, [TBD])

EXECUTIVE SUMMARY
This working paper addresses the aspect of Recommendation 2/5 to provide direct assistance, using a pool of international inspectors and safety experts, to non-compliant States <u>and</u> their international air operators. The latter role to assist operators would involve safety evaluations/audits of these operators so that, if the results were satisfactory, such operators would not face restrictions by other States, due to the shortcomings of their own States' safety oversight. Such a role is at odds with the international scheme for foreign air operator oversight; moreover, ICAO would dilute its own efforts to assist States, if it assumes a new and inappropriate role that must instead be performed by Contracting States in their roles as States of the Operator. Action by the Assembly is proposed in paragraph 4.

Strategic Objectives:	This working paper relates to Strategic Objective A.
Financial implications:	No additional resources required.
Reference:	

1.   **INTRODUCTION**

The ICAO Directors General of Civil Aviation Conference on a Global
Strategy for Aviation Safety held in Montreal in March 2006 addressed the issue of ICAO's direct assistance to States with inadequate safety oversight capabilities <u>and</u> to air operators of such States. Such assistance would be provided by safety inspectors and experts drawn from a pool managed by ICAO. With regard to air operator assistance, an ICAO-provided team of experts would conduct a safety audit/evaluation of the operator and, if the results were deemed satisfactory, ICAO's view is that such an operator should be allowed to continue its international operations while the inadequacy of the State's safety oversight is being addressed. While this concept was endorsed by the Conference, ICAO, in its working paper for agenda item 25,   is now apparently deferring its endorsement by the Assembly pending further study since this issue is "considered more complex and poses a range of legal questions".

2. **DISCUSSION**

2.1 The issue of oversight of foreign air operators, in the context of mutual recognition, was also addressed at last March's conference. The central fixture of the international scheme in this regard lies in Article 33 of the Chicago Convention (certificates of airworthiness, certificates of competency, and personnel licenses) and Annex 6 (air operator certificates). Before any State recognizes the validity of such documentation relevant to personnel, aircraft, and air operators of other States, it can and should assure itself that the requirements under which such documents were issued or rendered valid by other States "are equal to or above the minimum standards which may be prescribed from time to time" pursuant to the Chicago Convention.

2.2 One of the primary objectives of the ICAO Universal Safety Oversight Audit Programme (USOAP) is to provide other States with sufficient information to make well-informed determinations about the compliance status of an audited State. More specifically, USOAP audit results are intended to assist States in making the judgments about other States that are specified in Article 33 and Annex 6. Such judgments appropriately form a key basis for State decisions on whether to permit new, continued, or expanded air service by foreign air operators. The key issue, in this long-sanctioned scheme, is a State's compliance with its obligations under the Chicago Convention, not the safety posture of its air operators. If the State is not in compliance, other States should take actions to prevent, restrict, and/or curtail operations from this State, regardless of a "successful" air operator audit conducted by an ICAO-managed team of experts, the International Air Transport Association (IATA), or any other reliable auditing organization. This fundamental oversight responsibility cannot be delegated by States of the Operator to any third party, including ICAO. Even if there were an appropriate or legitimate way for other States to "accept" the results of such audits (one-time, "snapshot-in-time" events), they would not be adequately assured that the State of the Operator was subsequently assuring continuing validity and effectively resolving identified safety concerns related to the operations of the audited air operator.

2.3 ICAO is an organization devoted to the interests of the Contracting States that have obligated themselves by ratifying and abiding by the provisions of the Chicago Convention. The focus of ICAO assistance initiatives, therefore, should be on States' compliance with all the specific obligations in the Convention and its annexes. As USOAP results have emphatically demonstrated, the need for ICAO assistance remains great as substantial non-compliance by States remains widespread. ICAO's attention and efforts should not be diluted by taking on the task of auditing or assisting international air operators.

3. **CONCLUSION**

3.1 One intent of the ICAO proposal, to provide a degree of relief to international air operators that are allegedly being "penalized" for the shortcomings of their States, is at odds with the ICAO scheme that focuses on State obligations, including those relevant to oversight of foreign air operators. In addition, this measure, if honored by States, could also have at least two other undesirable consequences. First, it would relieve the powerful pressures often brought to bear on non-compliant States by their operators that are being subjected to restrictions by other States. Secondly, it would provide a potential disincentive for States to affiliate themselves with new or existing regional safety oversight organizations for assistance in providing effective safety oversight.

3.2 For the foreseeable future, ICAO needs to focus on continuously monitoring State compliance through its USOAP program and on actively fostering State compliance through its Unified Strategy Programme (USP). Efforts to actively audit and assist air operators should more appropriately be left to States and industry organizations.

4.   **ACTION BY THE ASSEMBLY**

4.1   This Assembly is invited to:

    a) endorse the concept of direct assistance to States proposed in ICAO working paper XX (WP/XX) and

    b) oppose the implementation of direct assistance to air operators discussed in ICAO working paper XX (WP/XX)

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ASSEMBLY – 36TH SESSION

TECHNICAL COMMISSION

Agenda Topic 28: **Protection of certain accident and incident records and of safety data collection and processing systems in order to improve aviation safety**

ANALYZING PRECURSORS OF ACCIDENTS: THE NEED FOR A COMMON APPROACH

(Presented by the United States of America)

SUMMARY
Comprised of industry and government safety experts, the Commercial Aviation Safety Team (CAST) came together in a unique industry government partnership in 1997 and set a goal to reduce the U.S. commercial aviation fatal accident rate by 80 percent over the next 10 years. Recent history has documented the results. At the close of 2006, the U.S. fatal accident rate has improved substantially and the rate is expected to continue to decrease in 2007 and beyond. CAST is redirecting its efforts to the analysis of incident data to identify emerging safety risks. The use of the ICAO Common Taxonomy by all States will be critical to further advancements in aviation safety. Globally, the absence of a common taxonomy, and the lack of industry data-sharing initiatives, greatly diminishes the ability to recognize emerging risks and increasing threats prior to their manifestation in an accident or serious incident.

Strategic Objective:	This working paper relates to Strategic Objective a:
Financial implications:	No additional resources required.
References:	DGCA/06-WP/16
	AN-WP/7768 29/10/02

1.   **INTRODUCTION**

1.1   The U.S. airline industry accident rate of 0.4 fatal accidents per million departures is already among the lowest in the world. That rate is much lower than the overall worldwide commercial aviation fatal accident rate of 0.73 fatal accidents per million departures. Nevertheless, no State may assume that accident rates will remain low given the projected growth in air travel.

1.2   The Commercial Aviation Safety Team (CAST), a U.S. government-aviation industry partnership, has developed an integrated, data driven strategy to reduce the commercial aviation fatality risk in the United States. To date, CAST has completed 40 of the 65 most promising safety enhancements identified to reduce the leading causes of fatal commercial aviation accidents in the United States. Adoption of these enhancements has been a major factor in an 80-percent reduction in the fatal accident rate over the past 10 years.

1.3   Though CAST has focused primarily on the US aviation system, throughout its history CAST has reached out internationally to help improve aviation safety around the world. A large number of international organizations are members and observers of CAST, including the European Aviation Safety Agency (EASA), Joint Aviation Authorities (JAA), and other ICAO Member States. CAST's impact and leadership extends to regional safety alliances around the world, and its principles have been incorporated into the newly-released ICAO global safety roadmap. Additionally, CAST has inspired the helicopter community to undertake its own safety teams.

1.4   To continue to achieve reductions in the accident rate, it is necessary to expand into analysis of incident and normal operation data to unearth changing and emerging threats in a proactive manner. Access to the data is thus a vital component of this risk analysis.

2.   **BACKGROUND**

2.1   A reduction in the worldwide accident rate is a long-term ICAO goal. To accomplish this, States must adopt enhancements that have proven to be successful. ICAO has already adopted key CAST recommendations such as requiring ground proximity warning systems. ICAO panels should consider how other key accomplishments of CAST could be incorporated into ICAO guidance.

2.2   CAST enhancements were developed based on the study of the most common categories of aviation accidents, e.g., Controlled Flight Into Terrain, Approach and Landing, Loss of Control, Weather (Turbulence), Runway Incursion and Uncontained Engine Failure. In addition, Icing, Maintenance, Mid-air Collisions and Cargo-related accidents have been studied and safety enhancements were finalized in early 2007.

2.3   CAST has supported the development of many tools that can easily be used by both operators and States. For examples of CAST outputs, see the references materials listed below. For example, the Air Line   Pilots   Association   "Online   Runway   Safety   Education   Course" (*http://flash.aopa.org/asf/runway_safety_alpa/*) has developed an internet-based interactive program to increase situational awareness in the airport environment and help reduce chances of a runway incursion. (Other training can be accessed from the Flight Safety Foundation.)

2.4   CAST has proven that data is the key to success. For each focus area, CAST analyzes past accidents and incidents with a disciplined, data-driven, focused approach to identify accident precursors. Specific safety enhancements are developed to address these precursors and contributing factors. The safety enhancements are implemented and their implementation is tracked for effectiveness. The knowledge gained is used to continually improve the aviation system.

2.5   CAST has recently redirected its analytical efforts to the development of diagnostic and prognostic capabilities using incident and other available data to identify emerging safety risk. Support for this initiative will require the establishment of a safety information analysis system that is significantly more extensive and sophisticated than the current basic systems to monitor known safety problems and the implementation and effectiveness metrics of existing enhancements.

2.6   ICAO has the opportunity to be a key stimulant to data sharing by creating an integrated, barrier-free architecture for sharing critical aviation safety data. The future success of safety information analysis and sharing of results can only be achieved when data are commonly described, then the de-identified,

aggregated data can be freely shared among all aviation community members and protected from inappropriate use. CAST believes that this future safety vision will require the collaborative support of all ICAO Member States to remove the barriers and obstacles to data sharing and to instill a Safety Management System (SMS), with supporting culture that allows data-driven decision making to reduce the occurrence of accidents and incidents.

3.   **DISCUSSION**

3.1   CAST will continually monitor performance-based data, tracking the occurrence of known accident causal factors while also seeking to identify any emerging causal factors that need to be addressed in the future.

3.2   The future of aviation safety is dependent on safety information analysis and sharing of results both to ensure that the solutions to the repetitive historical causes of accidents and loss of life are effectively implemented and to identify and mitigate future threats prior to accidents occurring.

3.3   The ICAO Accident/Incident Reporting System (ADREP) has been defined as the international standard for reporting occurrences to ICAO. As such, each Member State should provide aviation accident and incident data to ICAO for inclusion into ADREP. This data must be as complete and correct as possible.

3.4   In reporting data, it is important for States to use the CAST/ICAO Taxonomy and definitions, which establish a standard industry phraseology that improves the quality of information and communication. The CAST/ICAO Taxonomy is the result of a joint working group that has developed descriptions of data elements when reporting occurrence categories, phases of flight, aircraft data, etc. This Common Taxonomy can be found at: http://www.intlaviationstandards.org.   The CAST/ICAO Taxonomy defines (1) phases of flight such as takeoff, maneuvering, approach, etc.; (2) occurrence categories such as controlled flight into terrain (CFIT), loss of control – in-flight, system/component failure or malfunction (powerplant) and (non-powerplant), etc; and (3) standard definitions for aircraft and engine make and model; (4) etc. With this common taxonomy, the aviation community's capacity to focus on common safety issues is greatly enhanced. The absence of a common taxonomy, and the lack of industry data-sharing initiatives, seriously diminishes the ability to recognize emerging risks and increasing threats prior to their manifestation in an accident or serious incident.

3.5   One of the critical elements of future safety efforts in the United States will be the establishment of the Aviation Safety Information Analysis and Sharing (ASIAS) system that will provide the infrastructure for the free sharing of de-identified, aggregated safety information. The ASIAS program picks up where the historical accident case study effort leaves off. It will integrate aggregated safety information from many sources, including international events, in a protected environment. ASIAS will use improved analytical techniques to enable early identification of atypicalities or aberrations and emerging threats.

3.6   Improved data and analytical methodologies are key considerations. The information system must provide access to numerous databases, maintain database currency, enable interoperability across differing database formats, provide the ability to identify future threats, conduct a causal analysis of threats, and recommend mitigations. As an aviation community, we need to look at data in new ways that allow flightcrew members, operators, manufacturers, and the regulatory authorities to focus on breaking causal chains and taking action before an identified potential chain of events actually leads to an accident.

3.7   An example of the importance of data sharing in preventing accidents is evident in the case of Helios Airways Flight 522. CAST is currently reviewing data on pressurization after the Helios accident. From 1999 to 2004 there were eight pressurization events, and in only two cases did the Contracting States involved file a report with ICAO. In four cases an ADREP file was opened using unofficial information since the Contracting State filed neither a preliminary report nor a data report with ICAO. Two events had no record in ADREP.

3.8   There are three basic purposes for an information system – evaluating the effectiveness of the current safety interventions, monitoring known problems and risks, and identifying future risks. All of these purposes could be met by a single system that provides access to the necessary databases while maintaining the anonymity of owner-sensitive data.

3.9   The critical ingredient to future safety gains is a world-wide aviation safety information analysis and sharing system. Toward this end, we challenge all the ICAO Member States to support and institutionalize database systems that use the CAST/ICAO Taxonomy definitions and are exchangeable with both the ICAO ADREP and the ASIAS systems.

4.   **ACTION BY THE ASSEMBLY**

The Assembly is invited to:

1. *Urge* the ICAO Council and ICAO Member States to review, implement and monitor as many of the CAST safety enhancements as possible.

2. *Urge* the ICAO Council and ICAO Member States to remove legal barriers to the sharing of de-identified incident data and other safety information.

3. *Urge* the ICAO Council to expand the existing ICAO accident/incident safety information analysis and sharing system (ADREP) to include as much incident data as possible (in addition to data currently required on each accident) and provide resources in ICAO to ensure that a high level of data quality is maintained in the database.

4. *Urge* ICAO Member States to use the CAST/ICAO Common Taxonomy and provide the infrastructure for automated tools to monitor known safety problems and help identify emerging threats by providing this electronic data to the ICAO ADREP system.

REFERENCE MATERIALS FROM CAST

Joint CAST/ICAO Web site:

Official Site for Aviation Common Taxonomies: http://www.intlaviationstandards.org

FAA Publications:
Standard Operating Procedures for Flight Deck Crew Members (AC 120-71).

Crew Resource Management Training (AC 120-51).

Operator's *Aviation Safety Handbook*, SAE-G18 committee document, and the FAA Audit Tool. *Handbook Bulletin Air Transportation – 14 CFR Part 121 and 135 air carrier safety departments, programs, and safety directors* (HBAT 99-19).

Handbook Bulletin Air Transportation – Policy Company Operating Manuals and Company Training Program Revisions for Compliance with Current Airplane or Rotorcraft Flight Manual Revisions (HBAT 99-07)

Handbook Bulletin for Air Transportation – Airplane Flight Manual Revisions and Aircraft Manufactures Operations Bulletins (HBAT 99-16)

Flight Standards Information Bulletin for Airworthiness – Cold Weather Servicing of Aircraft Nose Landing Gear Struts (FSAW 97-10)

Handbook Bulletin for Airworthiness – Air Carrier Operations Specifications to Make Arrangements with Other Organizations to Perform Substantial Maintenance and Aircraft and Maintenance Provider Contracts (HBAW 96-05C and 98-01

Joint Handbook Bulletins for Air Transportation and Airworthiness (HBAT 98-18 and HBAW 98-09)

Part 91 Pilot and Flight Crew Procedures during Taxi Operations and Part 135 Single-Pilot Operations (AC 91-73)

FAA CD (*FAA Taxi 101*). Guidance for mechanics and others who tow or move aircraft within airport movement areas

FAA CD *Commercial Aviation Safety Team (CAST).* Includes Risk Assessment Tool, reference materials, team reports and listing of safety enhancements.

Training:
Flight Safety Foundation (http://www.flightsafety.org/technical_initiatives.html) has conducted research and training in the following areas, as contained in the ALAR Tool Kit CD:
- Controlled Flight Into Terrain
- Continuing Airworthiness Risk Evaluation
- Flight Operations Risk Assessment System
- Flight Operational Quality Assurance
- Ground Accident Prevention
- Operators Guide to Human Factors in Aviation

ASSEMBLY – 36th SESSION

Agenda Item 15: Aviation Security

COORDINATION OF SECURITY ASSISTANCE PROVIDED BY STATES

(Presented by the United States of America)

SUMMARY
This paper supports the International Civil Aviation Organization's (ICAO) Coordinated Assistance and Development (CAD) program and recommends actions aimed at increasing Member State participation in fostering partnerships with other Member States having aviation security expertise. The United States currently provides security assistance and training to ICAO Member States through various bilateral or multilateral interactions focused on ensuring that international security standards are met and sustained. In an effort to broaden such work, the United States encourages other Donor States to share information with each other and with ICAO in order to reduce duplication in security assistance activities and to assist ICAO in ensuring that security deficiencies identified through the Universal Security Audit Programme (USAP) are addressed in a manner that leads to sustained compliance with Annex 17. Action by the Assembly is in paragraph 4.

Strategic Objectives:	This working paper relates to Strategic Objective B8:	
Financial Implications:	No additional resources required:	
References:	Doc 9848, Assembly Resolutions in Force (as of 8 October 2007) (A35-9)	

1. **INTRODUCTION**

1.1   ICAO's coordinated assistance and development strategy was established to address specific needs and resolve identified deficiencies by enabling Donor States and organizations to direct assistance where it is most needed. By making available a broad set of international resources and tools -- tailored to the needs of States -- ICAO would be better able to assist other nations in meeting international aviation security standards and to provide training that would lead to sustainable improvements. Ultimately, the United States believes that Donor States should work *collectively* to provide technical and training assistance to recipient countries, thereby strengthening the international aviation security network over the long term.

1.2   To address this issue, an exploratory meeting of Donor States recommended that ICAO establish and maintain a database to track assistance provided to and received by States. A survey was distributed in December 2006 to collect initial information. After submitting timely and detailed

responses to the ICAO survey, States would then be able to access the world's best available resources through a central database, thereby avoiding redundancy and duplication of effort.[1]

1.3 In a recent address, Secretary General Dr. Taïeb Chérif referred to the goal of strengthening implementation of corrective measures through coordinated assistance and a cohesive, harmonized approach to technical cooperation projects.

> A major component of the *ICAO Plan of Action for Strengthening Aviation Security* is a Universal programme of regular, mandatory, systematic and harmonized audits to evaluate aviation security in all 190 Member States of ICAO and to help identify and correct deficiencies in the implementation of ICAO security-related standards… Fundamental to the success of the Plan of Action is the synergy between the USAP, the ICAO Aviation Security Mechanism, the Coordinated Assistance and Development Programme and technical cooperation projects, to assist States in achieving compliance with Annex 17 standards through technical assessments, training and direct assistance to States. Under the provisions of assistance, ICAO further provides for the development of aviation security training packages, the utilization of the worldwide network of sixteen aviation security training centres and immediate assistance to rectify urgent deficiencies. More long-term assistance through technical cooperation projects is available to States audited by the USAP when implementing their national AVSEC Plan of Action, especially those who lack the required human or financial resources. *Ensuring coordination between the USAP, the Coordinated Assistance and Development and technical cooperation projects implies a cohesive, logical and harmonized approach, strengthening each element of the process, from auditing to the implementation of corrective measures and institutional development.* (Emphasis added.)[2]

2. **DISCUSSION**

2.1 The United States has begun separate discussions with other nations and funding organizations in order to assist ICAO in its effort to achieve a cohesive approach by cataloging international technical and training assistance resources. As a means for delivering assistance in security infrastructure development, States may consider hosting trainees, dispatching specialists, or providing equipment as requested by recipient countries.

2.2 The following are broad areas for potential capacity-building assistance:

a) *Training and Technical Assistance* – focusing on terrorism, risk and threat analysis; national civil aviation security inspectors; enforcement and compliance training; national quality control regimes; train-the-trainer; cargo inspection; and crisis management, among others.
b) *Legislation* –developing legislation and implementing regulations, conventions, protocols, statutes, procurement policies, administrative and operational procedures and dispute resolution;
c) *Police and Law Enforcement* – developing procedures for law enforcement, establishing clear lines of authority and transparency, and providing technical and training assistance to airport security forces;

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[1] This effort entails only the collection and sharing of data from Member States to better leverage national and international training and technical assistance resources. "Donor" is defined as a Member State with already existing capacity-building programs.
[2] Address by the Secretary General of ICAO to the Second International Arab Civil Aviation Security Conference, Jeddah, 26-28 March 2007.

d) *Domestic Security Measures* – developing and implementing effective crisis and consequence management techniques, aviation and transportation security measures and protection of critical infrastructure.

2.3 The United States has identified international aviation security assistance in the development of security infrastructures as a top priority in the coming year. A common theme of recent meetings with partner States and regional authorities is the need to leverage shared resources and increase cooperation with States attempting to meet international aviation security standards and recommended practices. In an effort to expand such work, the United States is now exploring ways and means to assist various geographic regions in addressing security deficiencies identified through the ICAO Universal Security Audit Programme (USAP) by making available a broad range of U.S. technical and training assistance that can be tailored to the needs of individual States and regions.

2.4 The ultimate goal is to have an ICAO-sponsored international database of assistance programs, course offerings and attendee lists that can be accessed by Donor States in order to avoid duplication of effort. The Coordinated Assistance and Development (CAD) program has focused on enabling States to correct deficiencies revealed under the USAP through, *inter alia*, closer cooperation and coordination with States having advanced aviation security resources. CAD also works with regional and international bodies and multinational funding institutions to generate innovative assistance and funding programs. The United States supports this program and is committed to working closely with CAD to achieve these goals.

3. **CONCLUSION**

3.1 Ultimately, the United States believes that States should work *collectively* to provide assistance, thereby strengthening the entire international aviation security network over the long term. ICAO has identified the importance of collective action through Strategic Objective B8 and has built upon existing operational partnerships to strengthen aviation security capabilities. In addition, the Assembly at its 35th Session (Montreal, 28 September to 8 October 2004) updated and adopted Resolution A35-9: *Consolidated statement of continuing ICAO policies related to the safeguarding of international civil aviation against acts of unlawful interference.* This Resolution acknowledges that implementation of technical measures for the prevention of acts of unlawful interference requires financial investment and training of personnel. To continue the work of the 35th Assembly, the United States is exploring ways to assist ICAO in addressing security vulnerabilities identified through the USAP.

4. **RECOMMENDATIONS**

4.1 That the Assembly:

a) Convene an ad hoc meeting of Donor States currently providing significant assistance to recipient countries to solicit input and interest from States; and
b) Create innovative incentives to encourage active participation in the CAD database of capacity-building resources that tracks information on assistance programs being delivered by and to Member States, and indicates States' assistance needs.

A36-WP/

ASSEMBLY – 36th SESSION

EXECUTIVE COMMISSION

Agenda Item 23:   **Increasing the Effectiveness of ICAO**

**"BENEFITS OF ELECTRONICALLY SHARING AERONAUTICAL
INFORMATION PUBLICATIONS (AIP) AMONG ICAO MEMBER STATES"**

(Presented by the United States)

<table>
<tr><td colspan="2" align="center"><u>**SUMMARY**</u></td></tr>
<tr><td colspan="2">This paper proposes expanding the existing "ICAO-NET" secure website to contain the most current AIP documents of contracting States for easy accessibility and reference.</td></tr>
<tr><td>Strategic Objectives:</td><td>This working paper relates to Strategic Objective D:</td></tr>
<tr><td>Financial implications:</td><td>No additional resources required:</td></tr>
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</table>

1.   INTRODUCTION

1.1   During the past triennium, ICAO has made greater use of electronic means of communication with contracting States. Assembly Resolution A33-24 instructed the Secretary General to accord high priority to, inter alia, the enhancement of ICAO websites. The sharing of Aeronautical Information Publications (AIP) among contracting States through the secure ICAO website will improve the timeliness of communication, enhance aviation safety, and save natural resources.

2.   BACKGROUND

2.1   ICAO contracting States spend a great amount of money each year on air cargo costs, shipping paper copies of documents around the world. Most of these shipping costs, as well as the printing and reproduction costs, could be reduced by making these AIP documents available electronically through a secure ICAO website. This secure website would be available to ICAO contracting States for the purpose of sharing time-sensitive, critical information for flight safety.

2.2   From an environmental point of view, shipping paper copies of documents is wasteful of natural resources, not only in the thousands of pounds of paper expended, but also in the resources required to transport them.   ICAO has taken the lead in promoting environmentally responsible policies in international aviation with electronic communications, online publications and paperless meetings.

2.3   Benefits to this electronic AIP library include instant access at any time to the most current document information available from participating States around the world through a secure internet connection.

2.4   This electronic exchange of AIP documents will benefit everyone. A complete library of AIP documents from around the world would eventually be available through a secure internet connection. Proposed changes to an airport diagram or landing procedure could be immediately transmitted and available on the website.

3.   DISCUSSION

3.1   According to A35-WP/32, 168 of 188 contracting States already had access to the ICAO-NET. Today, ICAO reports that only a few of the contracting States do not have access to the ICAO-NET. The Assembly should urge States without access to the ICAO-NET to take the necessary steps to enable them to transmit and receive AIP documents electronically.

3.2   The electronic scanning of AIP documents and uploading to the website will be the responsibility of each State, unless prior arrangements have been made with ICAO. Dynamic individual passwords and central points of contact including current, valid electronic mail addresses would need to be identified and maintained within ICAO for each contracting State.

4.   CONCLUSION

4.1   ICAO contracting States spend a great amount of money each year on shipping paper copies of documents around the world. These costs, as well as the printing and reproduction costs, could be reduced by making AIP documents available electronically through a secure ICAO website.

4.2   From an environmental point of view, shipping paper copies of documents is wasteful of natural resources.

4.3   A complete library of electronic AIP documents from around the world could be available through a secure internet connection, utilizing the already existing ICAO website.

4.4   Benefits to the electronic AIP library include instant access at any time to the most current information available from around the world through a secure internet connection.

4.5   Each contracting State could supply one electronic AIP copy to ICAO in exchange for "free" and "up-to-date" access to 189 other AIP documents.

5. **ACTION BY THE ASSEMBLY**

5.1   The Assembly is invited to:

      a)   *Task* the Secretary General with adding an electronic AIP library to their already existing secure ICAO website.

      b)   *Task* contracting States with supplying current electronic AIP files to ICAO by 3Q08.

      c)   *Task* contracting States with supplying replacement electronic AIP files to ICAO when updates are required.

ASSEMBLY – 36th SESSION

TECHNICAL COMMISSION

Agenda Item 31: **Continued evolution of a performance-based global air traffic management (ATM) system**

TRANSFORMING TODAY'S AIR TRANSPORTATION SYSTEM TO MEET TOMORROW'S CHALLENGES

(Presented by the United States of America)

SUMMARY
This working paper provides an overview of the U.S. Next Generation Air Transportation System (NextGen) and its impact on the global aviation system. The goal of NextGen is to significantly increase safety, security, capacity, efficiency, and environmental compatibility of future air traffic operations. These benefits can be achieved through a combination of new procedures and advances in technology deployed to manage passenger, air cargo and air traffic operations. International harmonization is a key principle of NextGen, and the United States is working with other States to ensure interoperability with their modernization programs. We recommend that ICAO assess NextGen and other future systems to advance harmonization efforts and to recognize the potential need for technical standards development work that may be derived from these programs.

Strategic Objectives:	This working paper relates to Strategic Objectives A, B, C, D and E.
Financial implications:	No additional resources required.
References:	

1. **INTRODUCTION**

1.1   Today's U.S. air transportation system[1] is under stress. The demands on air transportation are outpacing our ability to increase system capacity. Operating and maintenance costs of the air traffic system are outpacing revenues and the air carrier industry is going through a period of dramatic change. The security requirements established in the wake of the September 11 attacks have had a significant

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[1] The current air transportation system is a complex array of systems and services used by an ever broadening collection of stakeholders. The term "the air transportation system" means all activities and components related to the safe passage of people and goods by air. This includes related federal lines of business, as well as private industry, state, and local activities.

impact on costs and the ability to efficiently move people and cargo. In addition, growth in air transportation is provoking community concerns over aircraft noise, pollution, and congestion. Adapting our current air transportation paradigm will not be sufficient to meet these challenges. Instead, transformation of today's system is required to ensure a healthy, environmentally friendly, globally interoperable air transportation system for 2025.

1.2   In 2002, the U.S. Congress established the Joint Planning and Development Office (JPDO) to define a national strategy for developing NextGen. The JPDO is a public-private partnership directed by the U.S. Congress to transform the U.S. national air transportation system to meet our projected needs for the year 2025 while simultaneously providing near-term benefits. The NextGen vision for 2025 enables the safe, efficient and reliable movement of large numbers of people and goods throughout the air transportation system in a way that is consistent with national security objectives. The NextGen vision is founded upon an underlying set of principles and enabled by a series of key capabilities that will free the United States of many current system constraints, support a wider range of operations, and deliver an overall system capacity up to three (3) times the current operating levels.

1.3   The United States is not the only State undertaking this type of long-term planning initiative. The European Union and its members are working on the concept and implementation of the Single European Sky (SES), with one technical component being that of the SES Air Traffic Management Research (SESAR) program. Other States have modernization programs in progress to define and implement their own future air navigation systems.

2.   **BACKGROUND**

2.1   For users of the aviation system, their flying experience starts well before they get on a plane. Therefore, NextGen is all encompassing in scope, covering all elements of aviation, not just air traffic management. NextGen will be developed with enough flexibility to accommodate a wide range of users – including very light jets and commercial aircraft, manned and unmanned aircraft, as well as military and general aviation operators. Safety in NextGen is approached in a prognostic fashion, establishing a new safety culture that assesses risk in a predictive environment, instead of the existing reactive context. The system will enable integrated management of environmental performance to foster continued growth of aircraft operations in a future where increased scrutiny of the environmental impacts of aviation is expected.

2.2   Many NextGen air traffic management concepts were based on ICAO's Global ATM Operational Concept, which represents a globally harmonized set of concepts and international requirements for the future. It is our goal to implement systems and technologies for NextGen that are aligned with international standards. This is a mutual goal that we share with other States involved in NextGen cooperation.

2.3   Another profound distinction in the development of NextGen is the inclusion of both public and private sector stakeholders in the development and implementation of NextGen. The level of industry (both domestic and international) involvement in NextGen is unprecedented. Currently, over 200 representatives from over 100 companies and non-governmental organizations participate on 9 JPDO working groups established to assess existing programs and develop future solutions in the areas of aircraft design, airports infrastructure, air navigation services, environment, global harmonization, net-centric information, safety, security and weather.

2.4   The JPDO is currently preparing detailed plans for transforming the current system into the NextGen 2025 system. These plans are in development with government and industry stakeholders. The NextGen Concept of Operations (CONOPS) is a document that provides a basic operational description of how NextGen will function. Version 2.0 of the CONOPS was released on 13 June 2007.

2.5   The NextGen CONOPS is being developed concurrently with the NextGen Enterprise Architecture (EA).   The NextGen EA represents the plan for how NextGen will be developed, much like a set of blueprints, including the systems that will be needed, the timing for their development, and how they will work together. The NextGen EA is a recognized tool for re-engineering business practices and the underlying technology that supports them. Version 2.0 of the EA was published on 22 June 2007.

2.6   The NextGen Integrated Work Plan (IWP) is a document that shows how current and near-term transformational activities such as Automatic Dependent Surveillance-Broadcast (ADS-B), cooperative surveillance and satellite navigation will be aligned with the planned future system. The NextGen IWP is divided into distinct but interrelated operational improvements, and breaks down the evolution path of NextGen. The NextGen IWP was published on 31 July 2007.

3.   **DISCUSSION**

3.1   *Global harmonization and coordination with other States*

3.1.1   Since 1990, international air travel to and from the United States to points all over the world has grown dramatically. International harmonization of equipment and procedures accommodates both the demands of U.S. users to operate globally without unnecessary constraint, and similarly, to embrace the needs of non-U.S. users to operate in the United States. Users have much to gain when harmonization processes are engaged and manufacturers also benefit from the development of open standards. These efforts contribute to the modernization of systems and help our economies grow.   Accordingly, international outreach is a critical component of the NextGen plan.

3.1.2   We know that successful implementation of NextGen will require significant coordination with the international aviation community. To date, we have established partnerships with States that border our flight information regions or are destinations for our major traffic flows so that their input can be included from the earliest stages of NextGen's development.

3.1.3   In 2006, the FAA and the European Commission signed a Memorandum of Understanding (MOU) that establishes a framework for cooperation between NextGen and SESAR. This MOU sets the stage for exploring opportunities to implement compatible technologies in our respective ground and air systems and for the development of common synchronized timelines for the implementation of new technologies. Our goal is to focus on the early foundational products of both programs and identify interoperability concerns sooner than later.

3.1.4   We have also formalized our cooperation on the development of future air transportation systems with China, Japan, and under the auspices of the North American Aviation Trilateral with Canada and Mexico. These collaborations were developed to align the strategic planning of our respective aviation systems and to identify opportunities to advance seamless operations.   We hope to expand our cooperation with other States interested in transforming their own air transportation systems and in learning more about NextGen.

3.2 *Coordination with ICAO*

3.2.1 The United States, along with other States, looks to the ICAO Global ATM Operational Concept with its Global Initiatives, and the ICAO regional implementation plans for guidance and international integration. Because ICAO has established the broad international requirements for a future ATM system, it would be appropriate for ICAO to monitor the development of systems concepts as defined in the plans for NextGen, SESAR and other future planning initiatives, and to identify opportunities for further harmonization and standardization of these plans.

3.2.2 States may also benefit from ICAO's involvement in the development and implementation of these future air transportation initiatives. ICAO should identify an appropriate mechanism to raise greater awareness of these initiatives and to ensure that all States have an opportunity to participate in a global dialogue on the integration of these initiatives.

4. **CONCLUSIONS**

4.1 Despite the size or scope of a State's air transportation system, each State must recognize its own relevance in the larger global aviation system and take the appropriate actions to ensure the continued viability of our shared system.

4.2 NextGen is a transformation of our current national air transportation system to ensure a healthy, environmentally friendly, globally interoperable air transportation system for 2025. System changes are being implemented now in order to meet our goals for the future.

4.3 International harmonization is a key principle of NextGen. We are fully aware that we cannot build a harmonized system without partnerships with our domestic stakeholders and international counterparts. ICAO should participate in the integration and harmonization of programs such as NextGen and SESAR.

5. **ACTION BY THE ASSEMBLY**

5.1 The Assembly is invited to:

   a) *provide* information on NextGen to all States interesting in learning how they can adapt this initiative in the development of their own future air transportation systems.

   b) *direct* the ICAO Council to identify the appropriate ICAO mechanism to monitor NextGen, SESAR, and other future planning initiatives to ensure global collaboration in the development and acceleration of standards for required future systems.

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ASSEMBLY – 36th SESSION

TECHNICAL COMMISSION

Agenda Item 30:   Other Safety Matters

"ADDRESSING UNMANNED AIRCRAFT SYSTEM (UAS) ACCIDENT INVESTIGATION AND PREVENTION BY ICAO MEMBER STATES"

(Presented by the United States)

SUMMARY
This working paper proposes that the ICAO Assembly take actions to endorse the Air Navigation Commission's announced proposal for an Accident Investigation and Prevention Group (AIG) meeting in 2008 with specific attention toward the investigation and prevention of unmanned aircraft system (UAS) accidents and serious incidents. In addition to expanding the existing ICAO Annex 13 definition of aircraft accident to include UASs, a common UAS accident and serious incident safety data collection and processing system (SDCPS) is necessary for this rapidly developing aviation sector.

Strategic Objectives:	This working paper relates to Strategic Objective A
Financial implications:	No additional resources required.
References:	

1.   **INTRODUCTION**

        Unmanned Aircraft System (UAS) operations in civil airspace are now being conducted worldwide. The development of these unmanned operations for public and civil use is expected to substantially increase in the coming years. Although UAS standards to assist and guide regulatory development by individual ICAO member States is evolving, Standards and Recommended Practices (SARPs) and state laws and regulations for UAS operation and design are not yet in place. Preliminary findings from a U.S. National Transportation Safety Board UAS accident investigation suggest that numerous issues of public safety exist in the area of UAS operations in U.S. national airspace. In this formative period of initial UAS integration into civil airspace, it is imperative that ICAO member States investigate UAS related accidents and communicate the lessons learned to prevent accidents among all users and assist in the development of UAS SARPs and local regulations.

In January 2007, the Air Navigation Commission (ANC) consulted with States and appropriate international organizations on convening an Accident Investigation and Prevention Group (AIG) meeting in 2008 to discuss subjects in the field of accident investigation. One of the proposed subjects for discussion is the amendment of the definition of accident in Chapter 1 of Annex 13 to include events involving unmanned aerial vehicles (UAV). This is an important step in encouraging investigative authorities to obtain the information necessary to identify and correct safety deficiencies and institutionalize lessons learned to prevent future accidents. In addition to this action, ICAO is invited to take a leadership role in encouraging the use of safety data collection and processing systems (SDCPS) to monitor UAS operations and determine appropriate preventative actions to ensure an acceptable level of safety for the world aviation community.

2.   BACKGROUND

The U.S. National Transportation Safety Board (NTSB), the independent accident investigation authority of the United States, is currently investigating an accident involving a UAS in Nogales, Arizona on April 25, 2006. The final report of this accident will be released in the near future; however, preliminary findings suggest that the results of accident investigations will play an important role in the development of strategies to safely integrate UAS operations into the international civil aviation environment.

3.   DISCUSSION

3.1   The use of UAS platforms for both public and civil use is expanding worldwide. As an example, over the past 12 months, the U.S. Federal Aviation Administration has received more than 200 requests for operational approval within the United States and estimates that the numbers will continue to rise.

3.2   UAS design is consistent with the current definition of "aircraft," contained in Chapter 1, ICAO Annex 13.

3.3   The current definition of an aircraft accident in Chapter 1, ICAO Annex 13, was developed before the advent of unmanned aircraft. Because this definition does not specifically address occurrences where persons are not present on board the aircraft, investigative authorities may be reluctant to or prevented from investigating UAS accident events or coordinating those investigations with other countries under the provisions of ICAO Annex 13.

3.4   The purpose of conducting aircraft accident investigation is to prevent future accidents, minimizing loss of life and property. Historically, though pre-emptive efforts to prevent accidents have met with a level of success, not all hazards in aircraft operation have been successfully anticipated in advance or adequately controlled in operation, and accident investigation has been used to fill the gap. Given the infancy of UAS operations in civil airspace, it is likely that, despite the proactive efforts of regulators, operators, and manufacturers, accidents will occur. It is imperative that UAS accidents and serious incidents be investigated to assure that deficiencies in planned safety controls are identified and analyzed and that the resulting lessons learned are passed on to the international community to prevent future accidents.

3.5   The risk of mid-air collisions between UASs and manned users of civil airspace is a primary safety concern for UAS operations worldwide. In general, UAS accidents, even in cases that do

not involve collision with manned users of civil airspace or injury to persons and/or damage to property on the ground, should still be investigated to determine what aspect of the operation failed, whether additional, previously unanticipated hazards were contributory, and what deficiencies need to be corrected to prevent such an event from progressing to a more serious outcome in the future

3.6   Preliminary findings in the U.S. National Transportation Safety Board's ongoing investigation of a UA accident in Nogales, Arizona reveal specific areas of safety consequence that are relevant to UAS operations. In particular, issues related to the functional and human-interface design of the UAS and its supporting, ground-based systems are being investigated as well as maintenance programs related to the continuing airworthiness of the systems. Pilot qualification and emergency training as well as coordination procedures between UAS operators and the respective air traffic management organizations are also being examined.

3.7   Incidents involving UASs that do not result in an accident but carry the potential, in combination with other circumstances, to impact the safety of other users of civil airspace and persons and property on the ground are another valuable source of data to evaluate deficiencies in UAS operations. The unique attributes of unmanned vehicles will require re-examination of existing guidelines for aircraft incident reporting. ICAO member States should examine the factors involved with UAS operations and determine appropriate categories of safety-related incidents that UAS operators must report.

4.   CONCLUSION

4.1   The integration of UASs into the international civil aviation environment has introduced and will continue to introduce potential safety risks to other civil airspace users.

4.2   UASs are aircraft as defined by Chapter 1, ICAO Annex 13.

4.3   Investigation of accidents involving UASs operating in the civil airspace of ICAO member States is essential to identify and correct potential safety deficiencies that may present unacceptable safety risk to other airspace users, and to persons and property on the ground.

4.4   To endorse the investigation of accidents involving UASs, ICAO should modify the current definition of "accident" in Chapter 1, ICAO Annex 13 to include occurrences associated with the operation of a UAS.

4.5   Analysis of serious safety-related incidents involving UAS operations is also a valuable tool for international accident prevention. To endorse the use of this important accident prevention measure, ICAO should identify the types of UAS incidents that are relevant to safety and provide SDCPS guidance to the member States.

5.   ACTION BY THE ASSEMBLY

5.1   The Assembly is invited to:

        a)   Endorse the Air Navigation Commission's proposal regarding the subject of UAS accident investigation in principle;

        b)   Direct the Council to redefine the definition of accident contained in Chapter 1,

ICAO Annex 13, to include UASs; and

c)   Direct the Council to develop guidance on the types of UAS accidents and serious incidents that should be reported and analyzed by ICAO member States in conjunction with the provisions outlined in Chapter 8, ICAO Annex 13.

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ASSEMBLY – 36th SESSION

TECHNICAL COMMISSION

Agenda Item 34:   Support of the ICAO policy on radio frequency spectrum matters

**ICAO Collaboration on Frequency Spectrum Requirements for Unmanned Aircraft System
Operations**

(Presented by the United States of America)

SUMMARY
This paper proposes that ICAO lead the global effort to identify and propose a frequency spectrum bandwidth for Unmanned Aircraft Systems (unmanned aircraft vehicles). The next possible opportunity to discuss spectrum requirements for UAS will be 2011.

Strategic Objective:	This working paper relates to Strategic Objective A.
Financial implications:	No additional resources required:
Reference	

1.   **INTRODUCTION**

1.1   The advent of Unmanned Aircraft Systems (UAS) presents significant challenges for both Air Traffic Service providers and regulators. Unique design elements for UAS include the aircraft, ground control station (GCS), and a communication link for the pilot to issue command and control instructions to his/her aircraft through the GCS.

1.2   To date, there is no spectrum provided for UAS communications.

2.   **BACKGROUND**

2.1   Frequency spectrum for aviation is approved by the International Telecommunications Union (ITU) World Radio Telecommunications Conference (WRC), which meets every 4 years. The next WRC is scheduled for September 2007, but it will not address UAS issues. With a requirement to establish an agenda 3 years in advance of the next meeting, the UAS community was not successful in establishing an agenda item for discussion or decision at the 2007 meeting. The UAS community would benefit from increased ICAO support in developing a position for UAS spectrum requirements for consideration at the next possible opportunity, the 2011 WRC.

2.2   While global radio frequency spectrum already was long identified long ago for traditional pilot-to-controller communications, there is no approved spectrum for UAS command, control, and communications.

2.3   The FAA has tasked the RTCA Special Committee 203 to develop recommendations for UAS technical standards associated with Detect, Sense, & Avoid (DSA), as well as Command, Control, & Communication (C3). These standards recommendations (anticipated to be completed in the 2012 timeframe) are dependent upon the identification and allocation of protected radio frequency spectrum for UAS operations.

2.4   The RTCA Workgroup tasked with developing C3 standards is now analyzing requirements, issues, and proposed evaluation criteria related to data link capacity, spectrum availability, and operational architectures.

2.5   EUROCAE, at the request of EASA and EUROCONTROL, has established Workgroup 73 to identify the necessary standards for the European integration of UAS. EUROCAE agrees that frequency spectrum is a critical UAS issue but they also have not yet formulated a recommended solution.

3.   **DISCUSSION**

3.1   The UAS Industry global projections are indicating that this area is expected to experience a growth of more than $15 Billion over the next 8-10 years.

3.2   ICAO has created a UAS Study Group with the United States, other key Member States, and EUROCONTROL as participating members. While this is a positive step forward, the United States recommends that ICAO should coordinate, as the global voice for aviation, the allocation of protected radio frequency spectrum for use by UAS. If this opportunity to establish a consensus international position on spectrum allocation for UAS operations in 2011 is lost, the next opportunity to secure spectrum will not come until 2015. Acquisition of frequency spectrum beyond 2011 will significantly delay this key industry and technology from moving forward. Critical standards development by RTCA and EUROCAE would be severely impacted.

3.3   In order to obtain necessary protected radio frequency spectrum for safe UAS operations, ICAO should lead efforts within the international aviation community to secure and harmonize UAS communications applications on a global scale. Without ICAO leadership to obtain and present a consensus position on UAS spectrum requirements, non-standard spectrum use could complicate UAS development and global interoperability. However, with the technology advancements that UAS will bring to the aviation community, and with that technology potentially migrating to manned aircraft, a reduced accident/incident rate will become more attainable.

4.   **ACTION BY THE ASSEMBLY**

4.1   The Assembly is invited to:

1) Expedite development of an ICAO position with recommendations on UAS spectrum allocation;

2) Lead the effort to establish dedicated UAS frequency spectrum within the protected band; and

3) Take the lead to establish a UAS frequency spectrum decision as part of the WRC agenda in 2011.

ASSEMBLY – 36TH SESSION

EXECUTIVE COMMITTEE

Agenda Item 13:   **Progress report on the implementation of the ICAO Universal Safety Oversight Audit Programme (USOAP) under Comprehensive Systems Approach**

**VISION FOR THE FUTURE OF USOAP
FOLLOWING
COMPLETION OF THE CURRENT AUDIT CYCLE (2005-2010)**

(Presented by the United States, [TBD])

SUMMARY
This working paper addresses the nature of USOAP that should emerge at the conclusion of the current audit cycle in 2010. It is in accord with a European proposal initially made at the ICAO Directors General of Civil Aviation Conference on a Global Strategy for Aviation Safety held in Montreal in March 2006 in proposing the incorporation of <u>safety risk analysis</u> on a universal basis in the conduct of the future USOAP. ICAO's collection of a massive amount of data through two audit cycles and one audit follow-up cycle will greatly aid ICAO in performing such analyses and continuously monitoring State compliance in a more efficient and at least equally effective manner. Action by the Assembly is proposed in paragraph 4.

Strategic Objectives:	This working paper relates to Strategic Objective A:
Financial Implications:	No additional support required.
Reference:	

1.   **INTRODUCTION**

1.1   From its beginnings as a voluntary assessment program in 1995, ICAO's compliance monitoring efforts have subsequently evolved into a full-scale mandatory, universal audit program that now encompasses most of the safety-related Standards and Recommended Practices (SARPs) in 16 of the 18 annexes to the Chicago Convention. Throughout this evolution, ICAO's primary goal has not been materially altered, i.e., to provide Contracting States with sufficient information so they can make well-informed judgments about the compliance status of other States. Such audit results can be used by States, for example, when they attempt to fulfill their obligations under Article 33 of the Chicago Convention with respect to recognizing (or not) the validity of licenses and certificates issued by other States as well as the new Annex 6 Standard that involves recognition of an air operator certificate (AOC). Given the important uses of this information by States, it is therefore important that this information be reliable, timely, and addresses the most critical aspects of State safety oversight systems.

1.2   At the ICAO Directors General of Civil Aviation Conference on a Global Strategy for Aviation Safety held in Montreal in March 2006, the member States of the European Community and the European Civil Aviation Conference (ECAC), along with EUROCONTROL, addressed the issue of improving ICAO's working methods with respect to its Universal Safety Oversight Audit Programme (USOAP). One of the recommendations in their working paper (DGCA/06-WP/11) exhorted ICAO to "intensify further its investigating activities under the USOAP programme by prioritizing more frequent and focused audits according to the significance of SARPs to aviation safety and to the associated risk factors." The aim of this proposal was to enhance the relevance, timeliness, reliability and therefore usefulness of USOAP audit results. No action was taken on this matter by the Conference.

2.   **DISCUSSION**

2.1   It is timely now to re-consider the substance of this proposal and its implications for the nature of the USOAP programme that should emerge at the conclusion of the current 6-year audit cycle in 2010. If this Assembly endorses significant changes to USOAP, as proposed in this working paper, ICAO will have sufficient time to re-engineer the program and its working methods in time to commence operations in 2011.

2.2   By the end of the current cycle in 2010, ICAO will have amassed and made available to States on an automated basis a tremendous amount of data about State compliance with the safety-related provisions in 16 annexes. Such data are derived from the audit protocols prepared by ICAO audit teams, the State Aviation Activity Questionnaires (SAAQ), and the Compliance Checklists (CC). States are obligated to periodically update the latter two documents on a continuing basis.

2.3   Given the creation of this valuable baseline, ICAO's audit efforts, beginning in 2011, should evolve into a "continuous monitoring" activity comprised of the following two key interdependent components:

- The <u>first</u> key component is continuous data collection, beginning with that acquired by ICAO through two audit cycles and one audit follow-up cycle; State updating of SAAQ/CC data; ICAO regional office inputs; and, when deemed necessary, on-site audit visits.

- The <u>second</u> key component is safety risk analysis. ICAO should develop and <u>universally</u> apply specific safety risk factors to all ICAO Contracting States on a continuing basis, thus continuing to honor the USOAP principle of universality. This data-driven approach would be crucial to determining the need for and timing of additional data collection in targeted areas, either through the use of actual on-site audit visits or other effective means. Emphasis would continue to be placed on verification of data and corrective measures taken by States.

2.4   The current focus on States' overall safety oversight capabilities would be maintained and careful attention would also still be paid to "exportable activities" (those that involve the international movement of aviation personnel and aircraft) addressed in the provisions of Annexes 1, 6, and 8. USOAP's primary goal – to provide Contracting States with sufficient information so they can make well-informed judgments about the compliance status of other States – would not change. To that end, the results of ICAO's "continuous monitoring" activity would always be available to States, as now, on ICAO's secure web-site.

3. **CONCLUSION**

The application of a system safety approach, involving the development and application of safety risk factors to the matter of State safety oversight, is a more appropriate and certainly more efficient auditing approach that should be applied by ICAO in its conduct of USOAP following the completion of the current audit cycle. It will result in a sharper focus on the most pressing safety concerns identified in States and lead to their more timely resolution, thus enhancing international aviation safety.

4. **ACTION BY THE ASSEMBLY**

4.1 This Assembly is invited to:

a) endorse this concept in principle;

b) direct the Council to re-design USOAP along these lines in the following triennium so ICAO's new safety risk analysis-based "continuous monitoring" activity can commence in 2011; and

c) adopt the Resolution contained in the Appendix to achieve these purposes.

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APPENDIX

DRAFT RESOLUTION A36-X (to supersede Resolution A35-6)

**COMPREHENSIVE SYSTEMS APPROACH OF THE FUTURE:
ICAO UNIVERSAL SAFETY OVERSIGHT AUDIT PROGRAMME (USOAP)**

Whereas the primary objective of the Organization continues to be that of ensuring the safety of international civil aviation worldwide;

Whereas promoting the implementation of international standards contributes to this objective;

Whereas Article 37 of the Convention requires each Contracting State to collaborate in securing the highest practicable degree of uniformity in regulations and practices in all matters in which such uniformity will facilitate and improve air navigation;

Recalling that the 32nd ordinary session of the Assembly resolved that a universal safety oversight audit programme be established, comprising regular, mandatory, systematic and harmonized safety oversight audits to be carried out by ICAO;

Whereas the ICAO Universal Safety Oversight Audit Programme (USOAP) has been successful in meeting the mandate given by Resolution A32-11;

Recalling the objectives of the ICAO Universal Safety Oversight Audit Programme, which seeks to ensure that Contracting States are adequately discharging their responsibility for safety oversight;

Recalling that ultimate responsibility for safety oversight rests with Contracting States, who shall continuously review their respective safety oversight capabilities;

Recognizing that the implementation of the comprehensive systems approach for the USOAP has been instrumental in the identification of safety concerns and in providing recommendations for their resolution;

Recognizing that the effective implementation of State action plans is essential to enhance the overall safety of global air navigation;

Recognizing that the 35th ordinary session of the Assembly, in Resolution A35-6, requested the Secretary General to adopt a more flexible approach in the implementation of the Programme on a long-term basis;

Recognizing the consequent need to address the future nature and direction of the USOAP following the completion of the current audit cycle in 2010;

The Assembly:

1. *Expresses* its appreciation to the Secretary General on the successful implementation of the comprehensive systems approach for the ICAO Universal Safety Oversight Audit Programme (USOAP);

2. *Directs* the Council to make appropriate changes to USOAP to incorporate safety risk factor analysis principles and apply them on a universal basis in a new continuous monitoring role to assess, on an on-going basis, States' compliance with their oversight obligations;

3. *Directs* the Council to ensure that the continuous monitoring role, to be implemented beginning at the end of the current audit cycle in 2010, continue to maintain as core elements the key safety provisions contained in Annex 1 – Personnel Licensing, Annex 6 – Operation of Aircraft, Annex 8 – Airworthiness of Aircraft, Annex 11 – Air Traffic Services, Annex 13 – Aircraft Accident and Incident Investigation, and Annex 14 – Aerodromes;

4. *Urges* all Contracting States to submit to ICAO in a timely manner, and keep up-to-date, all the information and documentation associated with USOAP and to be provided to ICAO, to ensure the effective and efficient implementation of the Programme;

5. *Declares* that Resolution A35-6: *Transition to a comprehensive systems approach for audits in the ICAO Universal Safety Oversight Audit Programme (USOAP)* has been superseded by this Resolution;

6. *Requests* the Council to report to the next ordinary session of the Assembly on the overall implementation plans for this new auditing approach to commence in 2011.