IAOPA POLICY MANUAL

International Council of Aircraft Owner and Pilot Associations

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IAOPA

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INTERNATIONAL COUNCIL OF
AIRCRAFT OWNER AND PILOT ASSOCIATIONS

POLICY MANUAL

Foreword

The diversity of interests existing within IAOPA affiliates combined with the wide range of issues confronting those organizations makes it imperative that a method of forming and maintaining policies be adhered to. Without well-formed and documented policies, the representatives of IAOPA and its affiliated organizations have little foundation from which to develop policy statements that concern either regions or of the entire body of IAOPA affiliates.

Speaking with one voice on critical issues confronting general aviation is an essential element of the coherence and credibility for the council of associations. While specific issues may be difficult to link to a detailed policy, well-formed basic policies will enable representatives to develop statements that are well founded in broad policy statements that have been agreed upon by a majority of members.

Resolutions generated at IAOPA World Assemblies form the principal source of the statements that follow. Additionally, the IAOPA Secretariat develops policy documents for use in ICAO conferences and other international meetings; these documents are developed with the advice and counsel of subject-matter experts and leaders within the IAOPA community.

The origin of each of the policy statement, where known, is noted at the end of each statement. For instance, the notation (24/6) indicates that the statement was derived from resolution number 6 generated at the 24th IAOPA World Assembly. The notation (Secretariat 4-05) indicates that the IAOPA Secretariat developed the statement in April 2005 for use in response to an ICAO proposal or in conjunction with an international conference.

These statements may be updated, cancelled or added to at any time by input from IAOPA Board members, consultation with the Secretariat and vetting by all Board members.

Craig Spence
Secretary General
15 January 2019

IAOPA POLICY DOCUMENTS

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BACKGROUND

IAOPA

The International Council of Aircraft Owner and Pilot Associations (IAOPA) is a nonprofit federation of 78 autonomous, non-governmental, national general aviation organizations. IAOPA has represented international general aviation since 1962, and a new International Civil Aviation Organization (ICAO) category of aviation, aerial work, since 1990.

The combined total of individuals represented by these constituent member groups of IAOPA is over 400,000 pilots, who fly general aviation aircraft for business and personal transportation. General aviation operations are defined by ICAO as "An aircraft operation other than a commercial air transport operation or an aerial work operation." Aerial work is defined as, "An aircraft operation in which an aircraft is used for specialized services such as agriculture, construction, photography, surveying, observation and patrol, search and rescue, aerial advertisement, etc."

Why IAOPA Was Formed

The great emphasis on expansion of civil aviation activities following the end of World War II caused the various nations of the world to join together in 1945 to establish the ICAO. The objective was to facilitate international operation of civil aircraft between countries.

To do this, it was necessary to standardize procedures governing licensing, rules of the air, aeronautical meteorology, charts, registration marks of aircraft, airworthiness, telecommunications, airports, air traffic services, search and rescue and other matters concerning facilitation and safety of flight.

The initial efforts of ICAO dealt primarily with the concerns of scheduled air transport services, which were being established in most countries of the world after the end of World War II. After some 10 years of ICAO operation, it became apparent to general aviation representatives, and to some staff members of ICAO, that most of the standards, procedures and other work being done in ICAO were oriented almost exclusively toward the operation of large airline transport aircraft. Clearly, this was not appropriate for general aviation. However, the work being done in ICAO was being incorporated in the regulations of many nations and general aviation was beginning to suffer by having no "spokesman or voice" in the ICAO deliberations.

Means of providing that voice for general aviation in the meetings sponsored by ICAO were explored at length, with the ultimate decision to establish an international general aviation organization. Following consultations with ICAO officials, it was decided that the new general aviation organization would be modeled after the International Federation of Air Line Pilot Associations, which speaks before ICAO for the interests of the airline pilots.

How IAOPA Was Founded

The Aircraft Owners and Pilots Association of the U. S.A. spearheaded the formation of IAOPA. An interim organization came into being on February 2, 1962, with four other groups joining AOPA-U.S. to form the nucleus of what was to be the permanent organization. The founding groups were:

Aircraft Owners and Pilots Assn.-U.S.A.
Aircraft Owners and Pilots Assn.-Australia
Aircraft Owners and Pilots Assn.-South Africa
Canadian Owners and Pilots Assn.
Philippine Airmen's Organization

One of the provisions in the IAOPA Constitution and Bylaws is that only one organization will be accepted from each country.

An informal objective worked out between the founders and ICAO headquarters officials was that a minimum number of countries would be represented in IAOPA before the organization would apply to ICAO for official status. In the interim, IAOPA participated in ICAO meetings by specific invitation.

The permanent IAOPA organization came into being on October 22, 1964. On this day the organization also was accorded accredited status by ICAO.

IAOPA Objectives

- To facilitate the movement of general aviation aircraft internationally, for peaceful purposes, in order to develop friendship and understanding among the peoples of the world and to increase the utility, of the general aviation airplanes as a means of personal and business transportation;

- To coordinate with other international and national organizations to promote better understanding of general aviation's requirements and further the interests of the membership;

- To integrate the views and requirements of member organizations with regard to international standards, recommended practices, procedures. facilities and services for international general aviation, providing forums as appropriate for meetings of representatives of the member groups;

- To advance the interests of general aviation internationally and to represent the membership on matters of interest to general aviation at pertinent meetings of the International Civil Aviation Organization and other global/regional aviation bodies;

- To encourage the implementation of planned systems, facilities, services and procedures in order to promote flight safety, efficiency and utility in the use of general aviation aircraft;

- To encourage representatives of national general aviation member groups to meet with and work with their national authorities in the interest of promoting better understanding, enlightened regulation and adequate facilities for general aviation;

- To encourage the collection from ICAO Contracting States and dissemination by ICAO of information, data and statistics relating to general aviation to provide a meaningful base for development of technical programs.

IAOPA Work Program

1. To facilitate the movement of general aviation aircraft internationally, for peaceful purposes, in order to develop friendship and understanding among the peoples of the world and to increase the utility, of the general aviation airplanes as a means of personal and business transportation;

2. To coordinate with other international and national organizations to promote better understanding of general aviation's requirements and further the interests of the membership;

3. To integrate the views and requirements of member organizations with regard to international standards, recommended practices, procedures, facilities and services for international general aviation, providing forums as appropriate for meetings of representatives of the member groups;

4. To advance the interests of general aviation internationally and to represent the membership on matters of interest to general aviation at pertinent meetings of the International Civil Aviation Organization, World Meteorological Organization, International Telecommunications Union, European Aviation Safety Agency, etc.;

5. To encourage the implementation of planned systems, facilities, services and procedures in order to promote flight safety, efficiency and utility in the use of general aviation aircraft;

6. To encourage representatives of national general aviation member groups to meet with and work with their national authorities in the interest of promoting better understanding, enlightened regulation and adequate facilities for general aviation;

7. To encourage the collection from ICAO Contracting States and dissemination by ICAO of information, data and statistics relating to general aviation to provide a meaningful base for development of technical programs.

How IAOPA Works

The governing authority of IAOPA is the Executive Board, consisting of the chief executives of all affiliate organizations. Regular meetings of the Board are held at least every two years in conjunction with the associations World Assembly. Regional meetings are held periodically, normally semi-annually.

The President and six Regional Vice Presidents are elected for four-year terms. The Senior Vice President is appointed by the President from the ranks of the Regional Vice Presidents. All serve without remuneration from IAOPA. An appointed Secretary General, ICAO Representative and Administrator constitute the Secretariat of the organization. The secretariat is located in Frederick, Maryland, USA and regional offices are located with their associated vice presidents.

The association provides representation at all major ICAO meetings of interest to general aviation and to a number of the regional meetings, working groups and panels wherein general aviation is involved. Experts on general aviation operations are drawn from the IAOPA affiliates to provide representation at ICAO meetings and at many other conferences of international bodies. The representatives for each meeting are drawn, so far as is practicable, from IAOPA affiliates in the area of the meeting. These are supplemented by staff of the IAOPA secretariat and as necessary.

IAOPA positions on contemporary matters under consideration by ICAO and other groups are formed through dissemination of agenda items and working papers to affiliates. The resulting comments and recommendations are consolidated by the secretariat to form policy. A monthly newsletter is sent to all affiliates and more than 150 other interested organizations and aviation leaders around the world.

BASIC POLICIES

Affiliates

Each affiliate organization must exert its best efforts to provide suitable volunteer delegates for IAOPA delegations to ICAO and other international meetings that consider matters of interest to general aviation and aerial work. (2/2)(Updated 2-09)

The President of IAOPA should make every effort to acquire representation on all ICAO panels, which deal with operational requirements of international civil aviation. (3/6)

Each member organization is encouraged to maintain liaison and work with their national authorities to support and foster accomplishment of the objectives of IAOPA.

Affiliates should strive to encourage national authorities to adhere to the provisions set forth by ICAO for the facilitation of general aviation and aerial work.

Affiliates should provide facts to national authorities that demonstrate general aviation and aerial work's capabilities in achieving superior fuel economies over other forms of transportation. (5/6)

Each national AOPA organization should appoint an individual to develop and disseminate information regarding the value of general aviation to the public. (12/4)

Efforts to stimulate the growth of the pilot population should be undertaken by individual affiliates and by the Secretariat. (12/11)

National AOPAs are encouraged to develop cooperative alliances and agreements within IAOPA to mutually expand services and membership, as well as to strengthen the AOPA concept rather than strengthen competing associations or businesses. (18/19)

Affiliates should actively promote membership development for their organizations in order to strengthen the voice of general aviation within their country. (10/8)

IAOPA affiliates will support and foster aviation safety within their respective countries and internationally. (10/9)

IAOPA should continue to represent the interests of general aviation including aerial work operations as well as small commercial operators; and ICAO should work with IAOPA to develop appropriate guidance in Annex 6 by creating a separate Part 4 that will address the operational requirements of this area of general aviation operations. (27/8)

Regulatory/External Issues

State aviation regulations should not impose restrictions more stringent than those stated within the ICAO annexes, except to meet reasonable local considerations. (13/9)

Privatization of aeronautical facilities will not be supported unless it can be conclusively shown that such privatization will result in an overall decrease of all user charges presently imposed on general aviation operators. (16/16)

Every State should encourage the growth and development of general aviation and aerial work by providing public support for its general aviation community to the same extent it does for its national airlines. (17/14)

Regulatory systems need to be risk based and proportionate to the activity and that regulators understand the risks that they seek to address and regularly review their existing regulations. (27/7)

Encourage all government to recognize the benefit that general aviation can provide to the economy of a state where there is minimum interventions from the state, fewer controls can speed up growth in this important sector of aviation. (27/12)

All IAOPA affiliates encourage National Aviation Authorities worldwide to implement the concept of proportionate risk-based regulation for General Aviation relevant to the activity, swiftly and without unnecessary delay, following the example of the EASA General Aviation Roadmap, and to encourage continued support for their further development. All IAOPA affiliates encourage National Aviation Authorities, as part of a performance review, to gather meaningful statistics to assess the impact of proportionate risk based relevant to the activity regulation on both the safety and economy of the General Aviation Industry. (29/4)

Secretariat

The Secretariat will regularly publish a newsletter for IAOPA affiliates, providing news of affiliate and Secretariat activities, ICAO actions and articles of general interest.

The Secretariat should work with affiliates to develop the AOPA Global concept to:
- Support education and safety; and
- Represent operational excellence; and
- Respect local cultures, traditions and laws; and
- Forge partnership with each other based on mutual benefit; and
- Promote the community and fun of aviation. (26/21)

The IAOPA Secretary General shall work with ICAO towards formal acceptance of medical requirements for private pilots, that are based on national or state medical standards that are currently used for drivers of motor vehicles. (28/3)

AERODROMES

General

All aircraft have the right of access to public-use aerodromes on fair and reasonable terms. (17/4)

IAOPA will foster the designation of an adequate number of aerodromes to serve international general aviation and aerial work traffic, including the provision of necessary clearance services.

IAOPA and its affiliates will guard against loss or reduction of aerodromes and facilities and, where possible, encourage the development of new general aviation aerodromes and the joint use of military aerodromes. (18/9)

Affiliates should urge their state authorities to implement the provisions of ICAO Annex 9 (Facilitation), that state, in part:

> *Adequate measures should be taken to ensure convenient parking and servicing of aircraft of all types and categories — regular, non-scheduled and general aviation aircraft — in order to expedite clearance and operations on the apron and to reduce aircraft ground stop time.* (2/3) (updated 02/09)

States and aerodrome operators should be encouraged to reduce all costs and fees relating to the operation of non-commercial aircraft. (9/4)

Any aerodrome that accepts international civil air traffic should be listed in the appropriate ICAO Regional Air Navigation Plan. (19/7)

Each national AOPA should, if found necessary:
- Undertake a study of restrictions placed on general aviation at aerodromes
- Make formal proposals to eliminate unjustified restrictions by promoting general aviation friendly policies used in other States
- Establish a yearly updated "General Aviation Aerodrome Improvement Plan" designed to promote the infrastructure needs of general aviation with national and local planning authorities
- Make sure that the needs of general aviation are duly taken into account in the various "Transportation White Papers" issued at local, regional and national levels
- Make efforts to provide airport policies both in national and English languages and make them available to the general public. (21/11)

IAOPA affiliates will:
- Devise programs to motivate and educate their members regarding the preservation and protection of all general aviation aerodromes within their State; and

- Form aerodrome support groups and networks for each active general aviation aerodrome within their State; and
- Actively monitor continued viability of general aviation aerodromes within their area of influence; and
- Affiliates should share best practices information regarding aerodrome preservation and advocacy (25/4)

IAOPA urge States and administrating authorities to:
- Share the responsibility for general aviation infrastructure and to ensure that all regions of the country have sufficient access to general aviation aerodromes; and
- Develop a plan whereby the network of aerodromes may be realized. (25/9) (revised 27/6)

States should create an aerodromes policy template for use by its affiliates to assist their officials in fostering creation of aerodromes within the State. (26/19)

Land Use

ICAO and member States should develop a policy and model legislation to regulate residential development in the vicinity of aerodromes. (17/10)

The sale of aerodrome property for non-aviation purposes to realize short-term financial gains should be discontinued. (19/3)

Publicly owned aerodromes should not be sold to private operators without a government-sponsored hearing on the issue. The desired result of the hearing would be a written agreement for the aerodrome to continue as a public use facility. (19/4) (revised 2-09)

States should:
- Protect the environment of general aviation landing sites from unwarranted intrusions by non-aeronautical activities
- Carefully regulate these non-aeronautical activities
- Ensure that fees derived from authorized activities are used for the benefit of the landing site being used. (21/9)

States and responsible authorities should:
- Recognize the value of general aviation aerodromes as an essential part of their transportation infrastructure; and
- Develop and enforce national and local land use policies and statutes designed to preserve and protect aerodromes. (23/3)

Operations

ATC procedures at aerodromes should be arranged so that separate paths between slow and fast aircraft are utilized during arrivals and departures. (19/2)

Short and/or parallel runways at major airports and reliever aerodromes should be provided to alleviate capacity constraints for general aviation in major terminal areas.   Further, each capacity constrained aerodrome should have a capacity enhancement plan in effect. (13/6)

ICAO standards should permit only truly omni-directional runway lights for use at aerodromes so that they may be easily seen from any viewing angle. Further, airport associations should encourage members to replace existing bi-directional lights with the more visible omni-directional type. (21/4)

States should request their aviation authorities to require fuel providers to make AVGAS readily available to aerodromes that permit general aviation operations. (22/8)

Governments and public authorities should:
- Require private companies authorized to operate government-owned public use aerodromes to provide general aviation fueling facilities.
- Develop and enforce policies that will simplify regulatory and procedural requirements to provide fuel at aerodromes serving general aviation operations. (23/9)

IAOPA should propose that ICAO and States remove the requirement for rescue and firefighting services at aerodromes classified as ICAO Class 1* or those with a runway length of less than 1,000 meters.
Aerodromes capable of accommodating aircraft with a maximum length of 9 meters or fuselage width of 2 meters. (25/5)

States should develop and promote a sustainable aerodromes plan that will:
- portray the value of domestic and international aerodromes as an essential part of their national transportation infrastructure; and
- provide the tools aviation groups and governmental officials need to devise and implement aerodrome policies; and
- highlight the economic and strategic advantages of a State aerodrome system; and promote a publicity campaign to foster a strong national and international aerodrome network (26/4)

AIRSPACE

Eliminate barriers that unduly impede or restrict the use of airspace by international general aviation and aerial work flights, such as restricted areas and closely controlled airspace not necessary for the safe and efficient control of air traffic. (update 02/09)

Simplify airspace structure and reduce controlled airspace to minimum amounts needed for the safe and efficient flow of air traffic. (3/5)

Provide a maximum amount of uncontrolled airspace, particularly at lower altitudes, for VFR traffic. (3/5)

Better liaison between civil and military air traffic systems must be achieved. (19/6)

General aviation aircraft should be equipped so that the capacity of the ATC system is increased and facilitated (within reasonable cost vs. benefit limits). (19/9)

Privatized or corporative airport or air navigation services must incorporate:
- Safety, service and accessibility features of the services should be carefully evaluated.
- Strong control and oversight should be exercised over entities selected to provide services, with regard to levels of safety and equity to system users.
- Equitable access to airport and air navigation facilities should be assured for all classes of users.
- Cost/benefit analyses for each class of user should be conducted when changes to the means of service delivery are contemplated. (20/3)

ICAO, State and military regulatory authorities responsible for classifying airspace should:
- Classify airspace at the lowest possible level commensurate with the type of operations conducted
- Involve stakeholders and use their input when developing airspace classification policies, standards and locations
- Coordinate airspace classification policy with nearby States and regional groups
- Design airspace using risk assessment and cost benefit analysis techniques. (24/3)

Opening of airspace in line with the requirements of ICAO Class G, will further the development of VFR flights. (27/9)

IAOPA and its affiliates, should work with ICAO, State and military regulatory authorities responsible for airspace classification and apportionment to:
- classify airspace at the lowest possible level commensurate with the type of operations conducted; and
- involve stakeholders and use their input when developing airspace modernization and classification policies, standards, and locations; and

- ensure the principles of access and equity are an integral component of airspace classification and modernization efforts; and
- develop alternative routes for use by visual flight rules operators in high-density areas, consistent with safe operating standards. (26/15)

Affiliates should request with the local authorities for greater access for VFR flights in the countries airspace and to encourage airspace designers to allow for increased access through the correct use of the ICAO airspace classifications. (28/8)

COMMUNICATIONS/NAVIGATION/SURVEILLANCE

General

IAOPA fosters the provision of air navigation and communications facilities adequate to the needs of international general aviation.

Requirements for additional/new equipment necessary to operate in the airspace system should not be imposed with less than seven years lead time. (19/10)

Encourage development of a multipurpose satellite system that will provide navigation, communications, surveillance, collision avoidance and search and rescue information. Multiple satellites/systems should be avoided to preclude investing in multiple systems/receivers. Satellite systems should be shared with other users to achieve maximum economy for general aviation users. (10/5)

IAOPA supports a navigation technology transition period of 10 years as well as a communications and surveillance transition over a 20-year period that will be affordable (that will present a favorable cost-benefit ratio) for general aviation aircraft owners and pilots worldwide. (18/8) (update 02/09)

Priority should be given by regulatory authorities to accelerated standardization and experimental evaluation by general aviation and aerial work users of such technologies to allow early use of enhanced navigation and communications techniques that will provide efficiency and safety benefits. (18/10)

The integrity of the aeronautical frequency spectrum must be protected. IAOPA affiliates should work with their national aviation and communications authorities to ensure positions are fostered at World Radio Conferences that will ensure adequate spectrum protection. (19/11) (update 02/09)

State regulatory authorities should conduct proper cost vs. benefit analysis and/or regulatory impact assessments before for any change to aviation services or equipment is required to access those services. These analyses must be carefully segmented to ensure that the interests of all classes of users are considered. (20/6)

There are a number of guiding principles that form an essential structure when contemplating CNS/ATM features for general aviation and aerial work. While these are not our only concerns these issues are of critical importance for current and future operations: (Secretariat 04/05)

- *Safety of the air traffic system must be the principal concern*. Safe operations for commercial air transport, State and GA/AW aviation communities must take precedence over any other consideration. To do less would invalidate any solution or system devised.
- *The costs for general aviation users to access and operate in a global ATM system should be equal or less than it is today.* With a single ATM system, duplicative infrastructure costs

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and service provider overhead are minimized, thus reducing operating costs in all regions of the world.

- *With a new ATM system, general aviation aircraft operating under VFR should have increased access to all airspace areas.* Because of the air traffic management system's efficiencies and performance gains, more airspace should be available for VFR general aviation operations. Increasing the access and flexibility of general aviation operations in all airspace areas generates incentives for acceptance of a global ATM system.
- *A global ATM system should be capable of providing equal or better levels of service without expensive avionics upgrades or training.* An ATM system should result in improved safety, access and efficiency without costly equipment and training mandates. Any proposed equipment, system or procedure must be subject to segmented cost-benefit analyses that adequately accommodate GA/AW operations.

Communications

International and national authorities should implement regulations regarding aircraft in distress that permit affordable and practical alternatives to Emergency Locator Transmitters for general aviation, including devices and/or monitoring systems that do not have to survive a crash in order to provide a reasonable alerting and locating function, and to permit aircraft owners to select an alerting and locating option that is appropriate for their type and area of operations. (24/6)

IAOPA affiliates should work cooperatively in advancing the interests of general aviation/aerial work by developing strategy and consensus on new data link requirements and to combine the strength of the United States of America and Europe in order to influence government regulatory decisions. IAOPA affiliates should urge service providers and regulators to:
- Provide multiple channels of communications, surveillance and information to users through data-link technology
- Demonstrate that one or more methods contain clear advantages for general aviation/aerial work
- Conduct segmented cost-benefit analyses to prove data-link viable
- Not require data-link as mandatory equipment to participate in any class of airspace
- Provide significant benefits for data link usage that encourages voluntary equipage. (21/6)

Urge regulatory authorities to implement more efficient frequency management techniques that make best use of the given frequency resources in the 25 kHz VHF aeronautical channel spacing to prevent adopting 8.33 kHz spacing. (22/9)

Affiliates should urge regulatory authorities to ensure that avionic retailers and suppliers of 8.33kHz radios have the necessary capacity to meet the demand in order achieve the January 1, 2018 deadline as set out in the European regulation. That there should be no unnecessary grounding of aircraft. (28/9)

Navigation

Urge all States to adopt GNSS as an approved navigation system for IFR and VFR operations. (16/5)

The 108-112 Mhz frequency spectrum currently used for ILS localizer signals should be retained for aeronautical use regardless of the ILS service termination dates. (Secretariat 02/05)

FM Broadcast Interference:

- Oppose ICAO action that would mandate new avionics as a consequence of FM broadcast interference.
- Establish FM broadcast power limits to preclude interference with ILS receivers.
- Coordinate implementation of aeronautical and FM broadcast frequencies to reduce interference effects.
- Develop alternatives that would require FM broadcasters use advanced technology equipment that would reduce interference with aviation frequencies.

Future satellite air navigation systems must be integrated and coupled to another separate and independent long-range navigation system to permit a backup for the primary system. (14/6)

Governments of all States in which LORAN-C transmitter chains are now operated, should continue to support such operation until it has been determined that LORAN-C will have no role in providing backup navigational capability for GPS/GNSS operations. (Secretariat 19/12)

Protection of frequencies required to implement the next generation GNSS must be assured; this is a safety of flight issue. (19/13)

Encourage testing to demonstrate that space-based augmentation systems will meet the requirements for general aviation operations before terrestrial navigation systems are decommissioned. Furthermore, that there should be transparently produced cost-benefit studies to ensure that the replacement of terrestrial systems by SBAS is economically sound. (20/15)

Global Navigation Satellite Systems (GNSS) used for aeronautical applications should be backed-up by a terrestrial back-up system compatible with and equally suitable for aeronautical, maritime, and land side applications. (21/12)

That the safety needs of general aviation aircraft must be included in any airspace modernization plan by the development and implementation of a SBAS system providing LPV approaches at general aviation airports capable of instrument approaches. (27/13)

Surveillance

The voluntary installation and use of transponders is encouraged where it can be demonstrated that their use will contribute significantly to flight safety and will benefit the user through increased ATC flows. (14/10)

Priority shall be given to the development of standards for GNSS transponders with inter-communications capabilities [Automatic Dependent Surveillance]. (17/13)

ACAS should not be required for small general aviation or aerial work aircraft. (10/98)

Mode S transponders have not proved their value for general aviation aircraft. Any efforts by ICAO, regions or States to mandate use of Mode S transponders should be subject to realistic cost-benefit analyses and public hearings to determine the potential value of these devices:
- For aircraft with a takeoff mass up to but not more than 5700 kgs operating under IFR a Mode-C transponder may be required (ACAS is capable of interrogating Mode-C signals).
- Only aircraft operating in Class A, B or C airspace should be required to equip with Mode C transponders (19/14) (update 02/09)

State regulatory authorities should not require the installation of Mode S transponders in general aviation aircraft, except for aircraft requiring the installation of TAWS equipment. (20/5)

Affiliates should request that as civil aviation authorities consider equipage requirements, priority consideration must be given to policies that allow the general aviation community to fully utilize the equipment in their aircraft before additional equipage requirements are imposed. (26/10)

European affiliates should urge the European community to provide required equipment financial support for airspace users not afforded a positive business case, especially if positive benefits accrue to aviation system users. (26/16)

Affiliates should encourage Authorities worldwide to implement and to enforce regulations in order to protect data which is broadcast by private aircraft against uncontrolled publication. (29/5)

As new technology becomes available, including low cost portable solutions, such as ADS-B and SWIM (system wide information management), national AOPAs /IAOPA should encourage State airspace regulators to remove controlled airspace where technology is able to provide the solutions for known/known intent environment. The benefit for General Aviation could be more efficient flight profiles through greater access to airspace - this will lead to lower fuel burn, reduce emissions and lower environmental impact. (29/7)

ENVIRONMENT

Affiliates must be sensitive to the environmental concerns of the public and take steps to educate both the public and their members about the relative merits of their mutual concerns. (10/98)

Change ICAO Annex 16 Aircraft Noise standards to reflect a more realistic power setting than the "maximum continuous power" setting now imposed for the measurement of normal level flight conditions. (7/9)

In view of safety considerations, noise abatement procedures should be designed in view of the normal operating limitations of general aviation aircraft, taking into account high cockpit workload during the arrival and departure phases of flight. (7/10)

Aircraft owners and pilots should do their utmost to be good neighbors to the non-flying public by implementing all reasonable technical improvements enabling them to reduce noise pollution. Noise reduction equipment certified to international standards should be accepted without any supplementary national requirements and costs. (16/18)

States should not enact aircraft noise standards that are more stringent than those listed in ICAO Annex 16. (19/18)

IAOPA affiliates and States should invest more in getting the good news of general aviation progress into the public domain. This is needed to inform the public about our technical achievements and operational procedures designed to reduce aircraft noise impact. (20/14) (updated 02-09)

Leaded aviation gasoline:
- States and international organizations should exempt general aviation and aerial work aircraft from lead compound fuel additive bans until an economical and practical solution is found
- Encourage general aviation aircraft engine manufacturers and refiners of 100LL fuel to develop suitable alternative fuels compatible with environmental and public health mandates
- Urge states, as well as aircraft and engine manufactures, to permit the use of existing supplemental type certificates (STC's) for alternative general aviation engine fuels, and
- Encourage general aviation aircraft users, whenever available, to use suitable unleaded alternative fuels compatible with environmental and public health mandates. (20/7)

Although the effect of general aviation aircraft engine exhaust emissions on atmospheric pollution is minimal, IAOPA strongly supports the enhanced production of aviation gasoline and jet fuel containing environmentally friendly materials of biological origin that will meet aviation fuel standards. (23/6)

IAOPA should raise awareness at ICAO and with national authorities of the potential hazards wind turbines present to the safety of flight; and
encourage renewable energy associations and the National Aviation Authorities to take into account the following recommendations to:

- develop a national map depicting the wind turbine sites; and
- conduct a risk assessment when planning to place a wind turbine within a 30 km radius of an aerodrome or a system that supports air traffic management or weather depiction; and
- depict all large wind turbines on aeronautical charts (26/5)

Aviation products critical to the safety of life needs to be exempted from unnecessary legislation and that ICAO should take a leading role in this debate to ensure the aviation safety is not adversely affected. (27/14)

FACILITATION

There should be no discrimination with regard to the type of international flight operation concerning the use of international airports. (7/11)

An adequate number of airports should be designated to serve international general aviation and aerial work traffic, including the provision of necessary clearance services.

Affiliates should work for the establishment of national facilitation committees as well as local facilitation groups. (7/12)

Efforts should be made to reduce excessive charges for customs and immigration clearance services and to eliminate overtime charges for those services.

National inspection authorities should allow inbound clearance on international flights based solely on flight plan notification and to clear such aircraft using a single inspection provided by a single authority. (2/6)

Provide facilities at general aviation airports that will enable pilots to acquire necessary meteorological information and to file flight plans. (3/5)

Free transportation should be provided to crew and passengers between any remote aircraft parking area and the clearance and flight planning facilities. (12/14)

Pilot certificates should be accepted in lieu of a passport for non-commercial flights as is the case for flight crew members on flights operated for compensation or hire under ICAO Annex 9, Facilitation. (12/14)

Fuel and other services should be available to general aviation aircraft as they are for other types of civil aircraft operations. (12/14) Fuel supply needs to be available without restrictions. (27/10)

Major credit cards should be accepted for all governmental airport charges and fees. (12/14)

States and airport authorities should take no longer than 15 minutes for the completion of all required normal departure/arrival formalities or 60 minutes for aviation security measures. (Secretariat 4-05)

Equip the parking spaces designated for facilitation with the necessary means for rapid, convenient and safe performance of all aircraft servicing operations, including equipment for secure tie downs. (Secretariat 4-05)

Airport authorities should provide at any time access to parked aircraft for its crew or authorized agent. (Secretariat 4-05)

States are encouraged to issue ICAO Crew Member Certificates to private pilots to facilitate immigration processing at international airports (Secretariat 12-07)

METEOROLOGY

IAOPA promotes the provision of adequate weather reporting and forecasting services in those areas used by international general aviation and aerial work, including the necessary communications facilities to make this information available to pilots for preflight briefing and in-flight information purposes.

Affiliates and the Secretariat work with the World Meteorological Organization (WMO) and other international organizations to obtain meteorological services that fully meet general aviation and aerial work requirements. (2/4)

Basic meteorological reports and forecasts should be available for airports used by international general aviation, in accordance with existing ICAO standards for this information. (8/3)

Essential meteorological information should be made available free of charge to all pilots via electronic means. (Secretariat 11-05)

Affiliates should urge States to promulgate AIS in a way to provide:
- adequate cash flow from the ANS charges to provide AIS without charging for those products in excess of printing and distribution costs; and
- electronic/digital aeronautical data free of charge and to enable competition between service providers. This would keep fees low for all concerned. (26/8)

MISCELLANEOUS

General

IAOPA shall abstain from patronage [sponsorship, support, endorsement] of national aviation events; where appropriate, the Secretariat will give regional or world publicity to such events. (3/8) However, IAOPA will not discourage events such as proficiency competition, navigational rallies or demonstrations of pilot proficiency. (8/6)

IAOPA will not support or encourage over-ocean air racing. (8/6)

IAOPA publicly condemns aircraft hijacking. Urge all authorities having jurisdiction in the matter to expend every effort to prevent aircraft hijacking. (3/9)

Affiliates should embark on anti-drug smuggling projects and cooperate with law enforcement agencies on this issue within in their countries. (14/4)

States should adhere strictly to the ICAO Standards and Recommended Practices for that region. (4/10) (updated 02/09)

States should be urged to recognize the validity of insurance underwritten in the country of aircraft registration. (5/9)

States should publish their Aeronautical Information Publications in an easily accessible and readable manner.   Further, AIP change dates should be reduced to the minimum number practicable -- preferably not more than once monthly. (7/4)

National AOPAs should incorporate the fast-growing categories of ultralight/microlight/very light aircraft into their membership and promote training in them to international and national aviation standards in order to enhance safety in the air. IAOPA should support national AOPA's on an international level to represent the interests of those categories. (22/6)

Biennially, no later than 60 days prior to each World Assembly, each affiliated national organization shall provide the Secretariat with statistics regarding its national organization and general aviation in its country using a format set forth by IAOPA. The Secretariat shall compile these statistics and provide World Assemblies with this information. (7/5)

All States should permit the carriage and use of cameras onboard civil aircraft. (12/5)

Aerial survey and aerial photography, outside of restricted areas, for research and leisure purposes should not be denied or otherwise restricted by State regulatory authorities. (21/10)

State regulatory authorities, including European Commission, should encourage the collection and publication of meaningful general aviation data so that in the future proportionality decisions can be reached more readily. (24/7)

IAOPA should

- urge ICAO to remind its member States of the contents of Annex 6, part II of the duty of care provisions a State owes to general aviation, which are different from the duty of care a State owes to passengers using commercial air transport services; and
- encourage ICAO at its earliest opportunity to dedicate time to emphasize the importance of these differences to its members States. (26/12)

Affiliates should urge States to:

- give greater attention to the changing role and importance of general aviation within the overall aviation system; and
- develop markets for the growth of general aviation; and
- highlight the economic and strategic advantages of an active general aviation fleet; and
- ensure proportionate regulations for general aviation with respect to airspace and aerodrome access, application of airworthiness standards, pilot licenses and medical certification; and
- institute risk and cost benefit-based approaches in all rulemaking actions pertaining to general aviation activities. (26/13)

IAOPA should request ICAO to:

- expedite the review of the Annexes to the Convention applicable to general aviation; and
- take cognizance of the different levels and types of general aviation activity in this review; and
- acknowledge that general aviation users accept a higher level of risk in the operation of their aircraft, certification of general aviation aerodromes, and certification standards for the different levels of pilot licenses and associated medical standards. (26/14)

IAOPA and affiliates are encouraged to provide the necessary support to regulators during the development of new regulations for the delivery of rules that are proportionate to the activity where they focus on, inter alia, positive safety outcomes. (28/10)

All national AOPA's are encouraged to promote their membership of IAOPA at all times - being seen to be a member of the world's largest pilots' association has many benefits when working at the local level and IAOPA should encourage national AOPA's to make use of all resolutions when discussing GA with national regulators. (29/9)

Aircraft/Airworthiness

States should create an aircraft certification procedure and standard specifically for light aircraft and engines that will yield a standard airworthiness certificate; this should include a means for the owner to complete final assembly of a new aircraft or to convert an existing standard category aircraft to the new category. (10/13)
General aviation aircraft certification and continuing airworthiness standards should not impose unrealistic or excessive measures beyond those required for the safe and economical operation of aircraft. (19/17)

Encourage aircraft piston engine manufacturers and governments to research, develop and authorize aircraft engines for general aviation aircraft that will function safely and economically on automotive fuel. (6/3, 9/8)

Aircraft maintenance issues:
- Maintenance schedules should be appropriate to the operation and not be unduly restrictive.
- Owner/operator maintenance should be permitted to the maximum extend possible for non-commercial aircraft operations.
- All maintenance programs should be designed to achieve safety at a reasonable cost. (19/13) (Update 2-09)

Urge State regulatory authorities to adopt as mandatory requirements for non-commercial aircraft only the provisions specified in the airworthiness limitations of the approved maintenance manual, Type Certificate Data Sheets (TCDS), or an Airworthiness Directive (AD), and not any other manufacturers' recommendations contained in Service Bulletins, Service Instructions and Service Letters relating to power plants, their accessories and airframes and their components. (22/4)

IAOPA affiliates should urge their State aviation authorities to widen the acceptance, on a bilateral basis, for non-type certificated aircraft to operate in each other's States. (22/5)

Affiliates work with their national aviation authorities to enact provisions which will assure:
- The recognition of the contribution that non-type certified aircraft make to all civil aviation activities; and
- Recognition of the training opportunities non-type certified aircraft provide for all pilots and mechanics; and
- Integration of non-type certified aircraft into the regulatory structure to permit training of both pilots and mechanics on these aircraft to be recognized toward the experience requirements for certified aircraft licenses; and
- The collection of appropriate non-type certified aircraft operational statistics to measure the impact of these operations on all civil aviation activities; and
- To the extent practicable, national aviation authorities should permit the crediting of flying time and mechanical training experience in non-type certificated aircraft toward higher licensing. (25/3)

Affiliates should urge States and responsible authorities to:
- seek a flexible and common recognition and validation of flight crew licenses issued in other member States, based on standards laid down by ICAO, and
- seek avenues for a speedy bilateral agreement between Europe and the United States of America on commonly recognised licences and certification of aircraft, and
- develop mechanisms to foster a future global common recognition of member States flight crew licenses. (26/6)

Affiliates should urge States and responsible authorities to:
- maintain the current practice of recognising pilot licenses for the purposes of day VFR in accordance with Article 33 of the Convention, and
- seek a flexible and common recognition among States of flight crew licences based on ICAO Annex 1 standards. (26/7)

Affiliates should be encouraged to:
- develop programs to encourage people to explore flight training, and
- share research showing what kind of factors increase the probability of successfully completing flight training and earning a private pilot licence; and
  advocate for:
    - o initiatives that reduce cost barriers to flight training; and
    - o greater use of flight simulation training devices that lower training costs; and
    - o no/lower taxes and fees for flight training; and
    - o low interest loans for flight training. (26/9)

Affiliates should work with their national aviation authorities to increase acceptance of other States' certification of aircraft and parts for aircraft with a MTOM of less than 5,700 kgs. (26/11)

European affiliates should urge European national aviation authorities responsible for this conversion process to provide the new EASA licenses at no cost. (26/17)

Affiliates should urge regulatory authorities to allow where appropriate the installation of non-TSO'd equipment on aircraft up to a limit of 5,700 kg (12,500lb) of MTOW, operated under Part 91 or its equivalent. (28/6)

OPERATIONS

The necessity for, and the validity of the "see and avoid" concept is reaffirmed; IAOPA is dedicated to continue use of this concept as the basic mode of flight operation. (8/8)

To enhance the viability of see-and-avoid in the lower airspace, a speed limit of 250 knots on all flights below 12,500 feet should be imposed, except where all traffic is controlled.

Airspace where ATC services are denied due to unavailability of ATC personnel as a consequence of a work action or strike should remain open to uncontrolled flights. Any requirement for a clearance or mandatory flight plan shall be suspended and restored by NOTAM. (8/10)

VFR

Provide procedures that permit properly qualified pilots flying properly equipped aircraft to operate under VFR in controlled airspace.

National authorities should accept the provisions of other States' pilot certificates that enable those pilots to operate under VFR in controlled airspace. (3/11)

Simplify and standardize regulations and information pertaining to VFR operations. (6/6)

Urge all States to permit night VFR operations in general aviation aircraft. (6/14, 8/9)

Minimum VFR visibility requirements where an aircraft speed limit exists should be not greater than 3 statute miles. (10/98)

Permit VFR over-the-top operations where the pilot is qualified and the aircraft is equipped for IFR flight. (10/98)

IFR

IFR operations should be allowed with the minimum amount of equipment and aircraft and pilot certification requirements necessary for a particular type of operation. (19/16)

Free-flight operations (direct, off-route legs with a minimum amount of control imposed) are endorsed only if reasonable equipment and certification requirements are imposed. (19/15)

Unmanned Aerial Vehicles (UAV)/Unmanned Aerial Systems (UAS)

ICAO should develop, and its member States adopt, uniform standards and recommended practices addressing UAS issues including the following:
- System reliability and safety
- Temporary or permanent airspace restrictions that restrict general aviation
- Sense and avoid standards
- Communications with ATC facilities and piloted aircraft
- Operational control
- Operator qualifications, proficiency and liability
- Coordination with conventional aeronautical activities
- Abnormal operations (failure modes)
- Recognition of UAVs as aircraft, meeting the same standards as other aircraft and aircrew; this will minimize airspace restrictions *and* safety impact on general aviation. (23/5) (Updated 2-09)

IAOPA should work with ICAO and State authorities to expeditiously develop UAS standards that will:
- provide mutual protection for both RPA and manned aircraft
- minimize the allocation of airspace exclusively for RPA operations
- fully integrate RPAS into the State airspace systems
- create certification and continuing airworthiness standards
- ensure adequate training and certification for all RPAS personnel (26/3)

PILOTS

States should permit foreign pilots who have licenses issued by States that meet ICAO standards to fly under VFR conditions as pilot-in-command of non-commercial aircraft registered in any ICAO state without further demonstration of knowledge or proficiency. (5/8, 10/9) (Updated 2-09)

States should use only the requirements for issuance of an instrument rating listed in ICAO Annex 1 in an effort to promote universal acceptance of instrument ratings and pilot certificates by all contracting States. (7/7)

The provisions of ICAO Annex 1 should be written as a minimum standard only, allowing for innovation and more effective training. (8/11)

Private pilot privileges should specifically include sharing of costs of the flight with passengers, provided the pilot is making the flight for his own purposes and not solely to provide transportation to his passengers. (10/11)

States should establish a national pilot certificate not valid for international operations to permit easier entry in to aviation. (12/6) (Updated 2-09)

Recognize flight training as an educational activity that produces jobs and eliminate heavy taxation often associated with it that discourages this vital form of occupational training. (18/13)

Private pilot licenses should not be denied persons who can demonstrate flight proficiency, regardless of an individual's age. (13/7)

Color vision requirements should be deleted from medical requirements for all grades of pilot licenses restricted to VFR daylight flight. However, in the event that the distinguishing of various colors becomes a necessity for pilots to operate aircraft under conditions, which require accurate color perception, that visual ability should be made an operational (rather than a certification) requirement. (18/5)

Hearing impaired pilots should be permitted to act as pilots in command of aircraft operating in airspace not requiring two-way radio communication. (19/10)

States should recognize and validate pilot licenses issued by ICAO contracting States without undue formality or background checks, in the spirit of ICAO Convention Article 33. (21/3)

Encourage States to streamline government administrative and security processes that will facilitate the validation of foreign pilot licenses. (23/7)

Medical certification requirements must be based on sound scientifically or medically derived evidence that clearly indicates the efficacy of each test, procedure and requirement specified in pilot medical certification examinations. (Secretariat 9-04)

ICAO Language Proficiency Requirements: IAOPA strongly recommends the following:
- Reevaluate the proficiency level requirements for pilots operating both VFR and outside major TMAs.
- Establish a system to standardize language proficiency testing agencies to a uniform level of competency.
- Simplify the testing procedures as much as possible.
- Encourage bilateral agreements among States that will reduce the impact of the language proficiency requirement for VFR operations. (Secretariat 5/05) (Updated 2-09)

IAOPA Europe will:
- Communicate to EASA the value of national pilot ratings, such as the British IMC rating, and the ability of national authorities to retain ratings, subject to national laws, where there is a demonstrated safety benefit and no such equivalent rating is available through EASA regulation; and
- To encourage other States to consider the safety benefit of such a rating. (25/11)

That, national regulators should adopt requirements for private pilots similar to those currently being considered in the United States which expands upon the FAA's successful Sport Pilot Rule and that ensures safety is maintained while significantly reducing burdensome regulatory barriers. This approach also provides regulators and the general aviation community with a responsible and appropriate approach to addressing medical fitness for pilots who are flying for private and recreational purposes. (27/5)

IAOPA Affiliate States are to be encouraged to adopt, implement, and recognize alternative medical standards that apply to private pilots meet the above objectives and to do so on a bilateral and multilateral basis. In collaboration with the Affiliate States, prepare a formal report for submission to the ICAO Secretariat for inclusion on the agenda of the ICAO Medical Panel that recommends the development and implementation of a global alternative standard of medical requirements for private pilots. Such alternative standard shall be risk and data based, cost-effective, and promote safety and growth of general aviation and shall further contain a pilot educational component that covers high risk conditions and altitude physiologies and makes appropriate provision for general practitioner resource materials. Provide IAOPA Affiliate States a summary of the standards and certification requirements applicable to private pilots on a country by country basis, including a description of any modernized, risk-based, medical fitness requirements in place, and which, in the judgment of the Affiliate, are considered less costly, less burdensome and in the best interests of both safety and the growth of general aviation. IAOPA Affiliates will provide such collaborative assistance and resources as are necessary to support the IAOPA Secretary General in carrying out the instructions of this Resolution. (29/6)

Growing the Pilot Population

IAOPA will work with States, ICAO, commercial air transport organizations and aviation training operators to:

- Highlight the fact that a high proportion of all aviation training and qualification begins with general aviation; and
- Emphasize the need for increased recruiting efforts in aviation operational occupations; and
- Devise financial incentives to support selected aviation career candidates; and
- Find ways of lowering flight training and proficiency costs to encourage more rapid achievement of and improving pilot qualifications. (25/6)

IAOPA will urge States and responsible authorities to:

- Recognize the potential shortage of pilots in years to come and take measures to reduce training costs by eliminating landing and navigation fees for all flight training operations, and
- Provide financial incentives to reduce the cost of fuel purchases used for flight training and proficiency flying; and
- Reduce operating costs for all general aviation aircraft; and
- Ensure that aviation fuel taxes are used to fund the aviation infrastructure. (25/7)

IAOPA affiliates:

- Exchange information among affiliates regarding growing the pilot population; and
- Develop 'best practices' describing successful approaches that attract individuals to flight training programs; and
- Make these issues a topic of ongoing discussion and the subject of a report to the affiliates and the agenda to the next IAOPA World Assembly. (25/10)

SECURITY

States should develop security measures that do not impede the movement of general aviation and aerial work pilots and passengers at airports serving both general aviation and airline traffic. This should be accomplished by dividing airport security restricted areas into airline and non-airline areas where appropriate and achievable security measures apply, commensurate with the size and operational requirements of aircraft in each area. (22/3)

States that adopt security measures that could lead to the suspension or revocation of flying privileges or the denial of access to flight-training, should also adopt as an integral part of these proposals appeal and review procedures for the protection of an individual's rights. (22/7)

States should not to take unwarranted prohibitory or restrictive actions, such as the closure of the airports serving entire regions, in absence of well-evaluated and confirmed threats. (22/10)

Security guidance: (Secretariat 6/03)

States should:
- Provide names/descriptions of persons known or suspected to be associated with terrorist organizations to the operators of flight schools with the intent of denying these individuals of service
- Develop lists of characteristics (profiles) of persons who are also to be denied training and reported
- Maintain accurate registries of airmen and aircraft owners, check the registries against the databases of national security agencies, investigate questionable individuals and, when appropriate, revoke their licenses
- Require airmen to possess valid, counterfeit-proof licenses and identity media
- Maintain, and distribute appropriately, descriptions of all stolen aircraft
- Staff a center or centers to receive reports of stolen aircraft and relevant general aviation/aerial work incidents and direct immediate response by security agencies.

Owners and operators of general aviation/aerial work aircraft should:
- Take appropriate steps to prevent the theft of their aircraft by locking the cabin and using anti-theft devices, as needed.
- Verify the identity of an individual seeking pilot training, renting or purchasing an aircraft by checking a government-issued photo identification card.
- Verify the identity of all passengers, and ensure that those passengers know what is in their baggage and cargo.
- Be on the lookout for any suspicious activity on or near a landing site, and reporting that activity to the appropriate authorities

Landing site operators should:
- Install signs warning against tampering with or unauthorized use of aircraft.

- Conduct a security threat assessment of the landing site and take appropriate steps to correct deficiencies.
- Work with local law enforcement personnel to secure and patrol the site.
- Separate general aviation and airline passengers using physical barriers and/or security procedures without additional cost.

States should not use deadly force against civilian aircraft that are not an immediate threat to State security. (Secretariat 7/03 and ICAO Convention Article 5)

ICAO, States and responsible authorities should:
- Conduct threat analyses prior to imposing security restrictions on general aviation activities
- Continually evaluate the effectiveness of security measures
- Consider the operational and financial impact on general aviation activities prior to initiating security measures
- Recognize the value of voluntary security measures used by pilots, aircraft owners, and airport operators. (23/4)

National security and aerodrome authorities should:
- Ensure general aviation aircraft are parked in non-security restricted areas on aerodromes.
- Provide access to general aviation aircraft through non-security sensitive perimeter access points.
- Abolish mandatory handling requirements for general aviation aircraft.
- Ensure that if mandatory handling is required, the cost of such handling should not be passed onto the general aviation operator.
- Absorb or otherwise fund the cost of handling charges if mandatory handling cannot be eliminated. (24/9)

Affiliates should encourage all ICAO member States to accept compliant flight crew licences without delay and costly security checks. (26/20)

USER CHARGES/TAXATION

General aviation users are prepared to pay only those reasonable charges needed to cover efficient provision of facilities specifically required for the safe operation of general aviation aircraft on aerodromes and in the airspace through which transit is required. These fees and charges must only be enacted after consultation with the user/beneficiary of these services. (13/12)

Fees should not be levied to constrain or ration general aviation growth or demand. Further, general aviation should not be charged for services, which primarily benefit the public interest or other classes of users. (14/9)

Taxes collected from general aviation should be expended on general aviation projects. (8/4)

National authorities should remove or refund the automobile or highway portion of the tax on aviation fuel products. Further domestic aviation fuel taxes should be set at the same levels imposed for international use. (2/5)

Full cost recovery of enroute, aerodrome and facility user charges have retarded or reversed the growth of general aviation activity; these charges should be replaced by State-provided facilities and services, where broad public interest can be shown. Further, general aviation activities should be exempted from any special fees, charges or taxes in the nature of user charges imposed by States. (5/12)

User fees should be kept as low as possible and imposed fairly with due credit given to all fees and taxes paid by general aviation. Further, general aviation representation must be provided an active voice when determining fees and taxes. (12/8)

Fuel taxes should be imposed in a uniform manner, regardless of an aircraft's state of registry. (12/9)

Head taxes should not be imposed on international general aviation passengers. (12/13)

ICAO should recommend to its European member States that they adopt a structure of airport user charges including landing fees based on aircraft weight that do not discriminate against general aviation. (15/9)

Policies should be adopted by ICAO and contracting States opposing air traffic control charges for VFR flights. (17/9)

The charges [airport and air navigation service provider] levied on international general aviation, including business aviation, should be assessed in a reasonable manner, having regard to the cost of the facilities needed and used and the goal of promoting the sound development of international civil aviation as a whole.
 (ICAO'S Policies on Charges for Airports and Air Navigation Services, Doc 9082/8, 2009)

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States should give due recognition to the fact that general aviation users already pay for its environmental impact through the burden of taxation and/or fees. (23/8)

Appropriate regulatory authorities should require air navigation service providers and airport operators to:
- Fully disclose the financial components of proposed projects or added charges.
- Prepare and publish a segmented cost-benefit analysis for each project/charging scheme. The segmentation is required to evaluate the effect and efficacy of charges/fees on each segment of the user community.
- Provide a formal and effective means of redress for disputed charges/fees should be available and clearly spelled out in any proposal.
- Charge users only for services actually required and received.
- And, consult all user groups regarding changes to existing charges. (24/4)

Urge, in the interest of safety all national regulators and Departments of Transport, to promote all Airport Authorities and the Air Traffic Control organizations, to reduce the cost for touch and go movement to no charge thus serving air safety and airport safety. (27/4)

The burden of taxes/levies should not be at a level which restricts the individual's freedom to buy and sell aircraft and should be fair and reasonable. (27/11)

IAOPA should urge European States not to charge general aviation activities for the air traffic control services provided at aerodromes that have transitioned from general aviation to commercial service. (26/18)

IAOPA needs to monitor the impact on the aircraft fleet and airspace users that the introduction of alternative fuels and power sources will have to help ensure that the existing and future aircraft operators are not burdened with unreasonable fees or charges; and consider how it can influence better taxation policies. (29/8)

IAOPA POLICY DOCUMENTS

Background

The diversity of interests existing within IAOPA members combined with the wide range of issues confronting those organizations makes it imperative that a method of forming and maintaining policies be adhered to. Without well-formed and documented policies, the representatives of IAOPA and its member organizations have little foundation from which to develop policy statements that concern either regions or of the entire body of IAOPA members.

Speaking with one voice on critical issues confronting general aviation is an essential element of the coherence and credibility for the council of associations. While specific issues may be difficult to link to a detailed policy, well-formed basic policies will enable representatives to develop statements that are well-founded in broad policy statements that have been agreed upon by a majority of members.

The resolutions devised at the world assemblies and regional policy documents have created a loose foundation of broad policies, however many have been overcome by events, have not been updated or have fallen into disuse. Therefore, a major effort will be undertaken by the Secretary General to update and codify existing policy statements. These will be used as the foundation of more specific policy statements to be devised by individual member organizations or representatives to international or regional aviation forums.

The existing procedure for policy formulation is found in Article XXI -- "Voting" of the IAOPA Bylaws. All questions (including policy formulation) brought before the board, outside of official meetings, require a mandatory 80-day comment period and a majority vote based on unit membership. Many questions regarding policy need a shorter response time due to imminent international meetings or requests for comment from international aviation organizations. Therefore, until provision within the Bylaws can be made for a shorter response time mechanism, an interim position paper approval process will be used where short response times are required.

Note that the position paper approval process shall only be used to satisfy legitimate short-term needs involving detailed technical issues and not for broad policy issues.

Policy Review Process

The Secretary General will review, update and revise all existing policies and world assembly resolutions in an attempt to capture the essence of the will of the council members. The revised statements of policy will be circulated to members for comment and discussion, where necessary.

The draft-revised policies will be sent to council members not later than 1 September 1997. Members will be provided a three-month period with which to review and comment on the documents. Substantive comments will be incorporated into the draft and resubmitted to

members for final comment by 1 January 1998. After resolution of comments, the IAOPA Policy Documents will be published early in 1998.

A part of this process will include a proposed amendment to the Bylaws that provides for an expedited policy formulation process.

Position Paper Approval Process

When the need arises to develop a specific position of interest to IAOPA, the individual first raising or desiring action on the issue will be expected to draft a position paper. The procedure for handling these statements is:

1. Position paper is drafted in accordance with the IAOPA Position Paper Format and Procedure.

2. Draft position is sent to the Secretary General to determine compliance and fit with existing policies. The draft will be transmitted via the most expeditious means; e-mail and facsimile are the preferred means.

3. The Secretary General will then disseminate the draft position to appropriate individuals and board members for comment. This will be accomplished via e-mail and facsimile, where possible. If the position is determined to be of interest to the entire board, it will be sent to all voting members for comment. If the position is regional in nature or localized in scope it will be sent to only those council members affected.

4. Upon receipt of the draft position, board members are expected to expeditiously review the document for overall fit with other IAOPA policy statements and for the individual AOPA organization concerned. It is advisable to include other well-informed members of the national AOPA in the review process to ensure a local consensus is gained prior to commenting on the draft. Board members will normally have 30 days in which to respond, however, positions requiring more expeditious treatment will be clearly marked with a required response date.

5. Once a position regarding the draft position paper has been formed at the national AOPA, the board member may respond to the Secretary General as follows:

   a) "Concur"
   b) **"**Concur with Comments**"** -- Comments may be provided but will not affect the vote. Substantive comments will be included as a temporary addendum to the publication of the final position.
   c) "Provisional Concurrence" -- Concurrence depends on revision of the statement, as indicated.
   d) "Non-concur" -- Reasons for non-concurrence must be stated.
   e) "Abstain"

6. The Secretary General will tally votes in accordance with the unit-voting rule and publish the position paper, as amended, including substantive comments provided by board members.

7. Published positions will be reviewed yearly by the Secretary General for continuing applicability. Recommendations to the board for revision or discarding positions and policies will be made annually.

Position Paper Format

This format has been chosen in an attempt to standardize the policy/position paper formulation process. Note that only remarks pertinent to the case need be included. Lengthy or non-germane comments are not desired, as they tend to detract from the relevant issues and obscure core elements of the statement. However, all issues significant to the formulation of the position should be included.

A sample draft position paper for illustration follows:

IAOPA Position Paper

"Draft"

Subject: Availability of Electronic Navigation Database Updates
Author: Name, AOPA-Affiliate
Date: April 6, 1997

References:

27 Feb 97 AOPA-US letter to FAA requesting free access to on-line database updates

9 Apr 97 IAOPA-Europe letter to Eurocontrol requesting national control of databases

Issue
Modern Loran, GPS and RNAV/FMS systems rely on electronic databases for positioning information. These databases are the equivalent of conventional IFR enroute and terminal charts; current information is published by national AIS agencies and commercial vendors, normally by subscription.

POLICY PAPERS
ISSUED BY THE SECRETARIAT

What is general aviation? What does it need?

General aviation and aerial work operations
What are they and how do they work?

General aviation fits into the system

Global CNS/ATM policy -- general aviation and aerial work requirements

IAOPA input for ICAO Security Manual (doc 8973)

Economics of airports and air navigation services

ICAO top safety items -- IAOPA input

General aviation safety improving but state support required

IAOPA Comments to ICAO Consultation Regarding Unmanned Aerial Vehicles (UAV)

IAOPA Comments on ICAO Language Proficiency

What is General Aviation? What Does It Need?

When the name "general aviation" is mentioned most members of the public conjure up a mental image of a small single-engine piston-powered aircraft, operating for recreation out of a small rural aerodrome. This image is correct for only about one-quarter of worldwide general aviation and aerial work activities. The other three-quarters of the roughly 40 million annual GA/AW flight hours are occupied with flight instruction, business travel, agricultural application, emergency medical services and other gainful pursuits.   In fact, the diversity of GA/AW is so great that ICAO defines general aviation operation by exception: those flight activities not involving commercial air transportation or aerial work. Similarly, aerial work may only be generally defined as operations used for specialized services such as agriculture, construction, photography, surveying, observation and patrol, search and rescue, aerial development, etc.[1]

In sheer numbers GA/AW is impressive: Approximately 350,000 aircraft and one million pilots are involved in these activities worldwide. On balance, roughly 60,000 aircraft and 500,000 pilots are employed in commercial air transportation (including cargo and charter).

The significance of GA/AW becomes greater when it is realized that every airline and military pilot must begin their journey to professional competence in the cockpit of a general aviation aircraft. Further, the essential services provided to the public by GA/AW for police, emergency medical services and search and rescue make all of our lives safer and more productive. Aerial survey, agricultural application and pipeline/power line patrol add significantly to many aspects of the economy. And, for the many remote areas of the world, life and civilization would not be possible without the benefits provided by GA/AW operations.

GA/AW activities globally create hundreds of thousands of jobs and tens of billions of dollars for the countries these activities serve. Without this activity essential transportation functions would be eliminated and the opportunities associated with them would be lost to the economies they potentially serve. Therefore, GA/AW needs and desires should be taken seriously as a worldwide economic engine.

Evolution

General aviation has come a long way since the first GA airplane, the Wright Brothers Flyer. From the fragile creations of old movies and photographs the general aviation aircraft has made great strides over the past century. While post-WW I aviation was limited to daredevil exhibitions and avid amateurs, the post-WW II era established general aviation's position as a legitimate form of

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[1] *ICAO Annex 6, Operation of Aircraft, Definitions.*

transportation. The major technological strides brought by war paved the way for safe and reliable small aircraft and stimulated the interest of a generation of young men and women returning from war.

The late '40s and '50s saw great growth in general aviation worldwide. The good economic times in the decades following the war permitted a new generation of aviation enthusiasts to seek their fortune in the skies. Single-engine aircraft production soared worldwide to meet the requirements of the new breed of aviator; flying schools and airports struggled to meet demand.

Aeronautical advancements of the 60's and 70's enabled GA/AW to become an all-weather, utilitarian form of transportation. The growth of affordable communications and navigation radios along with a more capable air traffic control structure gave rise to an increasing number of business ventures built around light aircraft operations. Finally, GA/AW could effectively compete with the airlines on trips under 500 miles.

The final decades of the twentieth century saw a consolidation and strengthening of the earlier post-war gains in GA/AW. More pilots became instrument rated to take advantage of the utilitarian benefits of all-weather transportation and flight training organizations rose to meet the increased levels of sophistication required to provide that level of training. GA/AW had finally arrived as a desirable alternative to airline travel now fraught with delays, cancellations and poor service.

Larger and developing countries have reaped the greatest benefits from GA/AW because of their dependence on a small aircraft's ability to rapidly access remote or lightly traveled areas. Yet, smaller, well-established countries also benefit from the efficiencies and flexibility arising from GA/AW activities. All gain from the public safety and utilitarian aspects provided by small aircraft.

Sharing the System

The world's aviation infrastructure was put into place principally to support the airlines and military aviation. GA/AW requires very little unique infrastructure and is a minority user of those facilities and services provided for larger commercial activities. The single exception to this statement is that GA/AW thrives through the use of local and regional airports. Indeed, it is through these smaller airports that general aviation derives its greatest advantage.

The majority of airline travelers begin and end their journeys at a small fraction of available airports, as few as one percent of available airports in some countries. In doing so airline travelers are subjected to lengthy ground trips to access major hub airports; lengthy delays are often associated with operations at these airports. Conversely, GA/AW operators enjoy a variety of conveniently located small airports from which to operate.

But, if GA/AW operations are to take advantage of their unique utility and flexibility they must occasionally use metropolitan area airports. In doing so they share the increasingly scarce resources of available runways and overlying airspace. The complexity of operations in these areas also requires a variety of expensive equipment to be installed in all aircraft, not just

airliners. The combination of scarce runways and airspace combine with expensive equipment to create access barriers for GA/AW.

In reality, the special performance characteristics of GA/AW aircraft and their ability to stay beneath tightly controlled airspace allow these aircraft to avoid constraints imposed on larger, higher performance aircraft. For instance, a single-engine piston-powered aircraft can easily operate out of a 1,000 by 15-meter runway, one-third the size required by airliners. And, by staying low and within carefully designed corridors expensive surveillance and navigation equipment may be omitted from small aircraft.

In essence, GA/AW operates at the margins of an infrastructure designed specifically for the airlines. The smaller aircraft take advantage of the unused capacity of the larger system, effectively increasing the overall efficiency of a complex infrastructure.

Principles of fairness and equity should govern use of the aviation infrastructure within each State. Efforts must be made to accommodate all types of operators.

Paying the Way

Many countries of the world fund their aviation infrastructure development through user charges. While airlines pass these costs through to passengers, GA/AW must bear this burden as a direct operating cost. More importantly, most countries levy taxes associated with fuel consumed; yet few of these monies flow back to the aviation infrastructure. Therefore, GA/AW is often double-charged for the services they receive. Additionally, a hidden "tax" is imposed on small aircraft in the form of expensive equipment mandated for operations in increasingly complex airspace.

Financing basic aviation infrastructure should be accomplished by the State, using excise taxes derived from either fuel tax revenues or passenger ticket taxes. Where privatized or corporatized providers are involved, conventional private or subsidized capitalization schemes may be employed. And, since basic civil safety and order functions are involved in providing aviation services, a portion of the State's general revenues should also be used to create a safe and efficient infrastructure.

Once the capital, research and development and future improvement costs of operational services have been accommodated, operational costs may be recovered through similar methods or a system of graduated user charges. The use of excise taxes and other levies to fund system operations and maintenance are preferable due to the ease of collection of revenues and the lack of need for a complicated accounting system. Yet, operators who do not use certain services should not be charged for those services.

If direct user charges are employed, a graduated system of fees should be used that recognizes value for services received. Since the infrastructure is designed primarily for airline and military interests, general aviation and aerial work activities should be viewed as marginal users of the system and charged accordingly. Ideally, very marginal users such as gliders, ultralights and

light-weight homebuilts with little or no avionics and that typically only fly locally should be exempt from any charges.

Charges for services must not discourage use of the system, as this would encourage unsafe practices. For instance, requiring a private pilot to pay a significant fee for meteorological and NOTAM briefings and for filing a visual flight rules (VFR) flight plan may actually contribute to unsafe operations. This is because pilots may choose to omit these essential safety services in an effort to avoid the associated charges. Therefore, consideration must be given to providing essential services using general government funds in support of safe operating practices.

The existing guidance provided for Air navigation services charging systems contained in ICAO Document 9082/5 provides succinct and appropriate counsel:

> *The charges levied on international general aviation should be assessed in a reasonable manner, having regard to the cost of the facilities needed and used and the goal of promoting the sound development of international civil aviation as a whole.*

All taxes, fees and charges associated with airport and air navigation services must be established as a cooperative effort between government regulator, service provider and service user. Only a joint effort of this nature will yield a workable, safe and effective aviation infrastructure and avoid the "double taxation" that can occur if the service provider and the government collect fees and taxes from users. Dictated funding systems or those biased for or against any user segment may cause users to subvert the system in an effort to avoid unwanted charges. Finally, once planning and use mechanisms are put into place an ongoing dialog is necessary to preserve the system.

The Future

As the world economy broadens and becomes increasingly intertwined, safe, rapid and accessible transportation will become more important than ever.   For, while improvements in communications technology bring us closer together, the need to be face-to-face is increasing, too – witness the recent rapid growth of airline travel. Air travel has become an accepted feature of the modern world; this acceptance insures its future growth.

While commercial air carriers have not reached their capacity limits, each additional flight, especially in or near major cities, meets with increasing uncertainty about its on-time performance or viability. Delays at hub airports have become a way of life and will likely be aggravated as air travel growth continues.

General aviation and aerial work offer an alternative to this bleak picture of future airline travel. The ability of small aircraft to operate at suburban and rural airports in airspace not used by the airlines presents enticing alternatives. The promise of future intercity transportation lies in alternative forms of transportation; general aviation operations open a door to but one form of fast and efficient transportation.

For this to become a reality enlightened governments must accept and embrace general aviation as a credible and attractive transportation alternative. In doing so they must enact fee structures favorable to small aircraft operations, ensure that smaller airfields are protected and encouraged and provide for fair and equitable access to airspace and infrastructure resources, recognizing that GA/AW are marginal users of a system developed for and primarily serving the airlines.

The extraordinary advantages provided by GA/AW place it in a category that defies the adjectives "general" and "aerial." Because these unique forms of transportation contribute significantly to national economies and provide much needed flexible transportation, they deserve a more descriptive term – how about "special" or "utility" aviation? [3-01]

General Aviation and Aerial Work Operations

What are they and how do they work?

General aviation comprises virtually all civilian flights except those involving compensation or hire. A small segment of aviation called aerial work is officially different from general aviation (see ICAO definitions), but general aviation essentially flies everything that the airlines and air charter operators don't.

As simple as that?

Yes. And as complex as that. General aviation and aerial work (GA/AW) include flying as diverse as aerial photo mapping and a weekend visit back home; as different as emergency medical evacuation and inspection trips to remote construction sites; as complementary as aerial application to keep crops healthy and airborne law enforcement to keep the peace. Just for starters.

General aviation benefits the community in so many ways it's hard to cover them all. We scan a few on the following pages.

An estimated two-thirds of GA/AW flights are conducted for business and public services that need transportation more flexible than the airlines can offer. That flexibility can be a hometown businessman flying his own small airplane to see four clients on a one-day, 700-mile circuit, or it can be a CEO and five staff members working at 30,000 feet while en route to a major meeting. By scheduled airline, the first could take four days and three hotel bills; the second would be impossible.

Like the family automobile, the family airplane (owned or rented) can provide mobility and pleasure, and it's almost always a more enjoyable trip by air. The family airplane can triple the comfortable range of vacation travel while avoiding the stress and frustrations of heavy traffic. And, of course, the family breadwinners can use the same airplane to great advantage in business by virtue of its speed and flexibility.

A common misperception leads some to think of personal or small business aircraft as only for the extremely wealthy. In fact, many people of middle-class means fly airplanes less costly to acquire than a new family car.

And learning to fly general aviation aircraft is well within the capabilities of the average person, intellectually and physically. Even some disabilities – deafness, for instance – need not keep a person who really wants to fly out of the cockpit.

GA/AW has an excellent and steadily improving safety record. Since the big surge in private and business flying that followed WWII, the total accident rate has decreased by 90%.

More than 90% of the estimated 400,000 world civil aircraft belong to GA/AW. And of the world's one million pilots, an estimated two-thirds fly GA/AW aircraft (many airline pilots also fly general aviation aircraft for their leisure).

The great fleet of GA/AW aircraft is the mainspring of a multi-billion-dollar industry, which generates even more economic activity. Thousands of communities benefit as their airports create a positive ripple effect in the local economy. Their business people take advantage of rapid, on-demand air transportation, and the airports help attract corporations that would never locate a plant, headquarters or distribution center in a town without an airport.

In these and so many other ways, general aviation serves the people

General Aviation and Aerial Work Flights Save Lives

Every day, general aviation transports blood supplies, vital transplant organs, and other time-critical, life-saving elements. Air ambulances carry out medical evacuation rescues and provide urgent transportation to trauma and other emergency centers. Many pilots volunteer their services (and often the use of their own aircraft) to transport patients who cannot endure land travel to distant specialized treatment centers. Local volunteer pilot organizations provide such services at no cost to needy patients. Helicopter emergency medical evacuation is nearly doubling survival rates by getting accident victims to hospitals within the first critical "Golden Hour."

For Business and Personal Transportation, General Aviation Offers Speed and Flexibility

More and more people are discovering that general aviation is fast, efficient and safe, opening a whole new vista of travel opportunities. For both business and personal travel, general aviation means going where one wants to go (not just where the airlines go), when one wants to go (free from airline schedules), and in whatever degree of privacy and security one desires.

The payoff is greater transportation flexibility and productivity than any other mode of travel can provide. But even those who never seize these advantages benefit, because general aviation works for the community, fostering the economy and providing essential services.

GA/AW Protects Our Environment

The most efficient and cost-effective way to conduct wildlife surveys, map wetland losses and soil erosion, follow bird migrations, patrol parklands and detect pipeline spills is with general

aviation aircraft. Specially equipped government and private aircraft gather information vital to the work of wildlife specialists, park rangers, prospectors, environmentalists and others.

Aerial work has long been our forward line in fighting forest fires. Helicopter and fixed-wing water bombers save millions of acres of woodlands each year, protecting homes, national parks and the nation's precious forests.

GA/AW Makes Your Driving Safer, Smoother

Airborne traffic reporters broadcasting on radio and television help millions of Americans in their daily commute, reporting accidents and other tie-ups to drivers and to the police. On a trip, you'll use maps drawn and updated from aerial photo data. That basic information is also used by urban planners, engineers and government agencies to plan street and highway construction and improvements in the infrastructure.

GA/AW Works While You Sleep

All night long, aerial work aircraft expedite financial transactions by transporting canceled checks and other documents throughout the international banking system. By cutting down the cost of "float" until checks clear, general aviation plays a vital role in banking and commerce.

Aerial Work Aids Agriculture

Agricultural pilots treat millions of acres of cropland each year, boosting production of the world's agricultural bounty. The majority of all commercially employed crop protection is applied by air. Planting, too, can often be done more efficiently by air. Ranchers use general aviation aircraft to manage herds and grazing land. Agriculture and general aviation are longtime partners in progress.

Aerial Work Facilitates Law Enforcement

General aviation aircraft have revolutionized law enforcement in federal, state and local jurisdictions. Police use light airplanes and helicopters to patrol highways, apprehend suspects, back up ground units, monitor national borders and locate lost children.

General Aviation: The People's Air Carrier

If scheduled airlines are the world's air transport arteries, general aviation is its equally important capillary system. GA/AW flights carry passengers to and from smaller cities, tens of thousands of which have no airline service. Business, cargo and personal flights reach anywhere, any time – on the traveler's or shipper's schedule, not the airlines.

Most major airline flights operate out of just a few hundred of the world's big city airports. Approximately half of those flights merely shuttle passengers among other large international

airports. But general aviation serves tens of thousands of landing facilities throughout the world.

General aviation and aerial work have a long and flexible reach. Take advantage of it. 9-01

International Civil Aviation Organization Definitions (ICAO Annex 6)

Aerial Work – An aircraft operation in which an aircraft is used for specialized services such as agriculture, construction, photography, surveying, observation and patrol, search and rescue, aerial advertisement, etc.

Commercial Air Transport Operation – An aircraft operation involving the transport of passengers, cargo or mail for remuneration or hire.

General Aviation Operation – An aircraft operation other than a commercial air transport operation or an aerial work operation.

General Aviation Fits into The System

A State delegate to the International Civil Aviation Organization recently expressed the view that air traffic management should be designed to move a maximum number of passengers with a minimum number of aircraft movements. This individual further stated that airline operations place fewer requirements on air traffic services (ATS) organizations than do smaller aircraft.

This is not a new contention, rather it has been discussed and re-discussed many times since the first forms of air traffic control emerged during the second decade of the twentieth century. Truly, the fledgling air traffic control systems were designed specifically to serve the needs of the airlines. The reason was simple: the airlines were practically the sole users of a system designed to separate aircraft operating in instrument meteorological conditions. Thus, the system catered to its majority users.

As general aviation (GA) aircraft began to take advantage of ATS their integration was facilitated by the fact that their performance characteristics and aircraft equipment closely matched that of their larger brethren. And, since the system contained excess capacity, rationing ATS was considered unnecessary.

After World War II a gap in performance and equipment characteristics of airliners vs. general aviation aircraft began to emerge. Multiple large radial engines, then turboprops, then turbojets placed an order of magnitude between airliners and GA. Similarly, higher quality radios, digital tuning, flight computers and multi-function displays made life easier and more certain for the flying bus trade.

Along with these developments came privileges for the airlines. These occurred more because of an increase in capability instead of a political or economic decision to provide the aircraft containing the most bodies with special privileges. High climb rates, jet speeds and high service ceilings gave rise to special standard instrument departures, jet routes and separate standard terminal arrival routes that put airliners, and some corporate aircraft, into a class of their own. Flight management computers, area navigation, satellite and inertial navigation and higher performance avionics facilitated these ATS advantages and promoted additional routing and altitude strata advantages.

The gate-to-gate and free routing concepts are truly designed with the airliner in mind (remember, GA doesn't have gates and little comes for free!). Notably, terminal maneuvering areas are designed to facilitate the transition of high-performance aircraft between the terminal and enroute system. Principal airways, SIDs and STARS and vectoring patterns all favor the high performer.

This leaves the lower-performance GA aircraft to operate at the periphery of the terminal area system, being fit in where possible between and below the high flyers. Because of the speed differential and ability to easily navigate complex routings, airliners are naturally brought to the front of the line while GA is accommodated when possible.

Yet, GA has not objected to this form of control and prioritization. This is because we understand for whom the system was designed and the attendant realities. The wonder of this is that GA traditionally operates with ease and little delay under these circumstances. In fact, GA is proud of the fact that, in effect, it readily operates using the excess capacity left by the airlines. Since the ATC system is designed to operate during periods of peak demand during most the day excess capacity exists; since GA doesn't like delays most of their major TMA operations occur during non-peak times.

The greatest advantage of GA operations is that they seldom use the major air carrier airports as a chosen destination. GA operators possess and prefer the flexibility to use a variety of airports that surround major metropolitan areas, allowing them to pinpoint their area of interest and not be tied to major airline hubs. This means that they normally operate at the fringes of city areas and in so doing avoid major airline aircraft air traffic routes. Therefore, GA seldom needs priority since, in effect, they utilize the "secondary roads" of the air, avoiding the major motorways. Stansted instead of Heathrow, Le Bourget rather than Charles de Gaulle and Teterboro over La Guardia usually make more sense than attempting to compete with our larger brethren for scarce airspace and concrete.

From a broader economic and public interest standpoint it is useful to compare the GA aircraft to the private motorcar and the airliner to either the intercity bus or cargo carrying truck. All of these forms of transportation pay fuel and other excise taxes for the privilege of utilizing the roadways. While most of these taxes directly fund the function of providing safe and efficient roadways some countries choose to divert GA fuel taxes into general revenues, enabling them to claim that GA does not pay for the services it receives.

Using the ICAO delegate's rationale, it would make more sense to provide higher priority to the intercity bus or truck since they are arguably more efficient in moving the most people or goods while occupying the least amount of space during the process. Such a form of prioritization is seldom employed for intercity transport. In fact, the opposite is true in many cases, with priority being given to the private motorcar in the form of restricted lanes during peak transit times.

While this analogy is useful in demonstrating relative equity in public and private transportation routing, the more important point is that GA seldom interferes with air traffic flows to the point where prioritization is required. GA would rather take advantage of non-hub airports where congestion exists and airport fees are likely to be higher than smaller airports. Regional airlines and some air cargo operators have discovered this, often preferring to bypass the major airports in favor of lower traffic density airfields.

The bottom line is that GA would rather operate in such as manner as not to compete with the airlines for scarce resources. Rather, the GA operator normally wishes to take advantage of their inherent operational flexibility to avoid air traffic and airport congestion. But in so doing, air traffic management plans must acknowledge and accommodate GA needs by providing access to and procedures for operations at the periphery of busy airspace areas. This can be easily done in most cases with foresight and an acknowledgement that sharing the sky makes good business sense for all.

Global CNS/ATM Policy

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General Aviation and Aerial Work Requirements

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Prepared by the

International Council of Aircraft Owner and Pilot Associations

IAOPA was founded in 1962 to provide a voice for general aviation and aerial work activities in the international aviation arena. Since that time it has been working with ICAO and regional aviation authorities to present and promote GA/AW needs and requirements. IAOPA represents the interests of affiliate organizations in 67 ICAO States, incorporating more than 470,000 pilots and aircraft operators. Each affiliate regularly works with State regulatory authorities to accomplish the goals stated above.

BACKGROUND

When the name *general aviation* is mentioned most members of the public conjure up a mental image of a small single-engine piston-powered aircraft, operating for recreation out of a small rural aerodrome. This image is correct for only about one-quarter of worldwide general aviation and aerial work activities. The other three-quarters of the roughly 40 million annual GA/AW flight hours are occupied with flight instruction, business travel, agricultural application, emergency medical services and other gainful pursuits.   In fact, the diversity of GA/AW is so great that ICAO defines general aviation operation by exception: *those flight activities not involving commercial air transportation (CAT) or aerial work.* Similarly, aerial work may only be generally defined as *operations used for specialized services such as agriculture, construction, photography, surveying, observation and patrol, search and rescue, aerial development, etc.*[2]

In sheer numbers GA/AW is impressive: Approximately 350,000 aircraft and 1,000,000 pilots are involved in these activities worldwide. On balance, roughly 60,000 aircraft and 500,000 pilots are employed in commercial air transportation (including cargo and charter). The significance of GA/AW becomes greater when it is realized that every airline and most military pilots must begin their journey to professional competence in the cockpit of a general aviation aircraft. Further, the essential services provided to the public by GA/AW for police, emergency medical services and search and rescue make all of our lives safer and more productive. Aerial survey, agricultural application and pipeline/power line patrol add significantly to many aspects of the economy. And, for the many remote areas of the world, life and civilization would not be possible without the benefits provided by GA/AW operations.

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[2] *ICAO Annex 6, Operation of Aircraft, Definitions.*

GA/AW activities globally create hundreds of thousands of jobs and tens of billions of dollars for the countries and small business enterprises these activities serve. Without this activity essential transportation functions would be eliminated and the opportunities associated with them would be lost to the economies they potentially serve. Therefore, GA/AW needs and desires should be taken seriously as a worldwide economic engine.

GENERAL AVIATION AND AERIAL WORK OPERATIONAL NEEDS

The Secretariat's principal working paper for the 11th ICAO Air Navigation Conference, entitled "The Global ATM Operational Concept," states:

> *The ATM operational concept seeks to bring benefits to the international civil aviation community. From an airspace user perspective, greater equity in airspace access, greater access to timely and meaningful information for decision support and more autonomy in decision-making including conflict management, will provide the opportunity to better deliver business and personal outcomes, within an appropriate safety framework. In particular, system harmonization and integration will provide high levels of assurance of predictability to airline operators and their customers.*

While the omission of GA/AW operations from the assurances afforded the airline community may have been an oversight, it must be emphasized that we too desire these assurances. While we acknowledge that the ATM system was designed principally to accommodate the needs of the airlines and military, a significant amount of GA/AW traffic regularly participates in this system worldwide. Therefore, the system must "bring benefits to the *entire* civil aviation community."

Overview

CNS/ATM requirements for GA/AW are similar to those of commercial air transport: safe and reliable on-demand access to the air traffic system and efficient routings and handling by air traffic service providers, all at the lowest possible cost. Yet, there are differences.

The majority of the world's GA/AW operations are conducted under visual flight rules (VFR) and in visual meteorological conditions. This provides us with great flexibility and a variety of options not available to those operating under instrument flight rules (IFR). Yet, our activities still need large portions of the airspace in which to operate, particularly in the low altitude structure, and to be able to gain access to airports located in closely controlled airspace.

The point being that while closely controlled airspace, especially in busy terminal areas, is designed primarily for high speed IFR air traffic, slower VFR traffic also requires access to or *around or under* these areas, either to operate into major airports or to peripheral reliever airports. As control constraints escalate in airspace along busy routes and equipment

requirements to operate in that airspace grow, VFR operations are effectively eliminated in favor of well-equipped IFR operators.

GA/AW IFR traffic constitutes approximately 20 percent of the total in North America and less that 10 percent in Europe. While these percentages will probably not grow appreciably in the near future, access to the IFR system *is* increasingly important to those who use this service. General aviation IFR users are those who employ their aircraft in pursuit of legitimate business and personal goals, making access to the system vital. And, this category of user incorporates an increasing number of turbine-powered aircraft, currently more than 29,000 worldwide or about half the size of commercial air transport fleet.

Because of the diversity of GA/AW operations and the differing capabilities of their diverse elements, it is important not to consider this segment of aviation as a homogenous group; the intercontinental Gulfstream 550 has very different needs than the Robinson R22 helicopter employed to muster cattle. Yet, each of these lay a legitimate claim to CNS/ATM facilities and services.

Communications, Navigation and Surveillance

VHF Data Link (VDL), Global Navigation Satellite Systems (GNSS) and Automatic Dependent Surveillance (ADS) systems offer great promise for civil aviation, yet with that promise comes two considerations:
1. as use of this equipment becomes the price of access to the system, will the benefits provided be adequate to offset the costs, and,
2. will those who cannot equip be excluded or delayed from entry into vital airspace and airports?

GA/AW operators readily embrace new technology when a clear benefit is apparent. For instance, it is estimated that more than two-thirds of the world's GA/AW fleet uses a GPS receiver of some sort, either panel-mounted or hand-held. No one mandated these devices; it was the clear benefit available to the user that led them to embrace this technology. However, GPS receivers requiring a sophisticated Technical Standard Order (TSO) pedigree to be used for IFR enroute and approach applications bring a less certain and well defined cost-benefit ratio.

An IFR-capable single-engine Raytheon (Beechcraft) Bonanza valued at $100,000 can ill-afford to install $50,000 worth of Space Based Augmentation System (SBAS), certified GPS, enhanced Mode S transponder, PRNAV and VDL equipment that may be required to operate in some locations within the near future. Similarly, it may require as much as $500,000 of equipment to properly equip and configure an older million-dollar Learjet. Moreover, even if this equipment is not mandated, will access to desired routes, altitudes and terminal areas continue to be available without it?

As the transition to space-based navigation systems some backup system is envisioned for IFR operations within the foreseeable future. Airlines will be able to employ already installed inertial navigation systems (INS) or multiple distance measuring equipment (DME/DME)

sensors. GA/AW will be forced to use the existing VHF omni directional radio range (VOR) ground stations for as long as they exist. However, these stations may begin to be phased out as early as 2006 in some parts of the world, leaving GA/AW with no effective backup means for comprehensive IFR enroute or approach guidance. Either ground or space-based backup navigation systems, developed with economy in mind, must be designated to accommodate GA/AW needs.

The timing of required equipment changes is an important consideration for GA/AW operations. For instance, does it make sense for an IFR operator to install a Mode S transponder that may be eclipsed by ADS-B just a few years later? That is, will existing Mode C transponders provide adequate surveillance signals until ADS becomes a mature technology? Therefore, *single-step solutions are preferable* to costly and disruptive multi-step solutions.

Air Traffic Management

While ATM is designed to accommodate and direct IFR traffic flows, it also indirectly affects VFR traffic, as well. In order to safely control IFR traffic ATM designers must designate certain portions of the airspace for varying degrees of access and control. In doing so, VFR traffic, especially in busy terminal areas, is constrained and restricted from access to increasingly valuable portions of the airspace. Airspace and procedures designers must become familiar with the unique performance characteristics and capabilities of light aircraft if efficient and effective integration of GA/AW into the air traffic system is to take place.

Over-classification of airspace segments appears to be a natural tendency for ATM specialists seeking the most suitable conditions for controllers. Yet, in doing so access to valuable airspace is lost to the VFR trained and equipped pilot. More importantly, in over-classifying airspace designers may unintentionally overload both surveillance equipment and the controller's ability to accommodate additional traffic generated by excessive amounts of closely controlled airspace.

It is clear that increasing amounts of managed airspace will be required as more flights continue to crowd into a finite amount of sky. However, compromises are available to the ATM specialist to properly classify airspace segments, providing VFR entry points and routes in terminal areas and imposing less-controlled airspace segments where possible. Importantly, the equipment required as a precondition for access to managed airspace should be carefully evaluated and minimized for IFR operators. VFR operators can accommodate the detail required to navigate in terminal airspace through the use of elementary GPS units.

Perhaps the most important consideration for air traffic managers to acknowledge that non-airline and non-scheduled traffic exists that have legitimate requirements to use the air traffic system. This is particularly important when devising airspace structures, rules and procedures that impose constraints on the system. GA/AW cannot claim access equal to the mass flow of airline traffic, yet their needs must be acknowledged and accommodated *fairly and equitably*.

It is useful to note that a principal constraint of on air traffic systems is airport capacity. Unless the runway launch and acceptance rate at key airports can be enhanced airborne capacity improvement efforts may prove to be of little value. Therefore, ATM efforts should be directed at solving airport capacity problems as well as the airborne capacity component. Land-long and land-and-hold-short techniques can provide short-term improvements but a longer view is needed for ultimate solutions. In the medium-term, short off-axis runways installed at major terminals will accommodate both GA/AW and regional CAT. In the long-term, additional major runways and, ideally, airports to relieve terminal area congestion hold the ultimate solution.

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PRINCIPLES

There are a number of guiding principles that form an essential structure when contemplating CNS/ATM features for GA/AW. While these are not our only concerns these issues are of critical importance for current and future operations:

- **Safety of the air traffic system must be the principal concern.** Safe operations for CAT, State and GA/AW aviation communities takes precedence over any other consideration. To do less would invalidate any solution or system devised.
- **The costs for general aviation users to access and operate in a global ATM system should be equal or less than it is today.** With a single ATM system, duplicative infrastructure costs and service provider overhead are minimized, thus reducing operating costs in all regions of the world.
- **With a new ATM system, general aviation aircraft operating under VFR should have increased access to all airspace areas.** Because of the ATM system's efficiencies and performance gains, more airspace should be available for VFR general aviation operations. Increasing the access and flexibility of general aviation operations in all airspace areas generates incentives for acceptance of a global ATM system.
- **A global ATM system should be capable of providing equal or better levels of service without expensive avionics upgrades or training.** An ATM system should result in improved safety, access and efficiency without costly equipment and training mandates. Any proposed equipment, system or procedure must be subject to segmented cost-benefit analyses that adequately accommodate GA/AW operations.

While a number of these principles may appear to conflict with features prized by air traffic service providers or other airspace users, these principles may be accommodated through the use of early coordination and planning. After safety, these principles may be further distilled to the dual concepts of access and equity -- *access* to airspace and airports and *equity* in equipment requirements and sharing system resources.

SPECIFIC REQUIREMENTS

Communications/Navigation/Surveillance

Communications
- Voice communications -- only 760 channel VHF needed for the foreseeable future for both VFR and IFR traffic
- Datalink –
  - Communications – when economically feasible
  - Data – an *option* for GA users
  - Method of delivery – VDL, Mode S extended squitter, UAT – less important than how it is used/imposed
  - Requirements for datalink should be carefully coordinated with the introduction of ADS-B

Navigation
- Global navigation satellite system (GNSS) – considered primary means for all users, enroute and terminal
- IFR – if backup to GNSS required, retain skeletal VOR system until GNSS reliability is assured
- Minimize precision navigation and sub-RNP-1 requirements -- provide alternatives for those not so equipped
- Remove existing VOR and NDB only after regional feasibility studies have been conducted, including user inputs

Surveillance
- Provisions for Mode A/C transponder should remain valid as long as possible, pending transition to ADS-B
- Institute ADS-B for IFR traffic ASAP; establish a permissive transition period for VFR users, as required

Air Traffic Management

- Provide fair and equitable access to the airspace and airports
- Provide guidelines for and implement airspace designs that provide maximum access for GA/AW, providing optimized flows VFR and IFR operations
- Integrate GA/AW IFR traffic into enroute and terminal flows
- Provide maximum access to terminal airspace for VFR operations
- Accommodate GA/AW airspace requirements for specialize operations, e.g., flight training, glider operations, sport parachuting, etc. 4-05

IAOPA input for ICAO Security Manual (Doc 8973)

General Aviation and Aerial Work

Much of the attention of security forces is focused on worldwide scheduled commercial air transport (CAT) services, primarily because of the concentrations of people and aircraft size involved in this type of service. Yet, many more aircraft and flight crew members participate in general aviation and aerial work.

When the name *general aviation* is mentioned most members of the public conjure up a mental image of a small, single-engine piston-powered aircraft, operating out of a small rural aerodrome for recreation. This image is correct for only about one-third of worldwide general aviation/aerial work (GA/AW) activities. The remaining majority is occupied with personal transportation, flight instruction, business travel, agricultural application and other gainful pursuits. In fact, this diversity is so great that ICAO defines general aviation operations by exception: *those flight activities not involving commercial air transportation or aerial work*. Similarly, aerial work may only be generally defined as *operations used for specialized services such as agriculture, construction, photography, surveying, observation and patrol, search and rescue, aerial development, etc.*[3]

In sheer numbers GA/AW is impressive: Approximately 350,000 aircraft and one million pilots are involved in these activities worldwide; they fly approximately 40 flight hours per year. On balance, roughly 60,000 aircraft and 500,000 pilots are employed in commercial air transportation, including cargo and charter.

The significance of GA/AW is increased when it is realized that every airline and military pilot must begin his or her journey to professional competence in the cockpit of a general aviation aircraft. Further, the essential services provided to the public by GA/AW for police, emergency medical services and search and rescue make all of our lives safer and more productive. And, for the many remote areas of the world, life and civilization would not be possible without the benefits provided by GA/AW operations.

GA/AW activities globally create hundreds of thousands of jobs and billions of dollars for the countries these activities serve. Without this activity essential transportation functions would be eliminated and the opportunities associated with them would be lost to the economies they potentially serve. Therefore, GA/AW needs and desires should be taken seriously as a worldwide economic engine.

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[3] *ICAO Annex 6, Operation of Aircraft, Definitions.*

The theft, hijacking or criminal misuse of a GA/AW aircraft is of great concern to pilots, owners and operators of these aircraft. The threat of personal hazard and financial loss provides a strong motivation to ensure that these illegal acts are prevented. Therefore, it is in the best interest of GA/AW owner/operators to devise measures that will prevent misuse of their aircraft. While governments may wish to supplement these measures to further protect the public, the diverse and far-reaching nature of GA/AW must be accounted for in devising these supplements. As well, any supplements must take into account the relatively small potential for damage that GA/AW aircraft possess as opposed to their much larger air transport counterparts.

Security Issues

Scheduled CAT generally operates from major airports that provide a significant security control and screening infrastructure. GA/AW operations tend to avoid these airports, preferring to operate from the many small aerodromes or even off-airport locations, providing one of the many advantages when compared to CAT. Yet, GA/AW aircraft frequently operate from airline airports to take advantage of either location or the ability to connect with scheduled CAT.

GA/AW operations at the estimated 100,000 official and unofficial landing sites worldwide make it difficult, if not impossible, to provide full screening and physical security services. Importantly, many GA/AW aircraft do not need a prepared surface from which to operate; 300 meters of road or pasture provide adequate takeoff and landing area for many light aircraft. Further, helicopters and amphibious or float-equipped aircraft specialize in off-airport operations.

In the past GA/AW operations at airline-served airports were technically subject to the same security and screening requirements required of the airlines. These measures were deemed impractical and prohibitively expensive for small aircraft at airline airports; therefore, ICAO Annex 17 was revised in 2005 to accommodate GA/AW.

Threat Assessment for GA/AW Aircraft

There are three principal security objectives for general aviation:

- Protecting the aircraft from theft
- Protecting the aircraft, crew and passengers from attack
- Preventing aircraft from being used as a weapon

GA/AW must be protected from two types of threats: (1) the possibility of the aircraft being turned into a weapon, either by the authorized pilot or by someone who takes over the aircraft; and (2) deliberate sabotage, including the potential that a bomb or explosive device might be placed on an aircraft.

The majority of general aviation aircraft have significantly less mass, payload and speed than commercial airliners and all-cargo aircraft, making them unsuitable for use as high kinetic energy weapons or "guided missiles." While the threat posed by most GA/AW aircraft may be small a threat assessment should be performed by States to determine potential risks associated with specific targets. Once a specific threat associated with a specific event or location has been identified the severity of the threat should be evaluated to determine severity. Then, the probability that such an act could occur must be sought to arrive at a risk assessment (risk = severity of threat x probability of occurrence). Once the level of risk has been determined mitigating factors can be devised to counter the threat. Each State should conduct its own independent assessment to determine relative threat/risk levels and appropriate mitigation factors.

Elements of these analyses may include:
- Threat
    - Targets
        - Activities
        - Events
        - Structures
    - Unauthorized activity
        - Theft
        - Modification
        - Hijacking/weapon
    - Dependent elements
        - Aircraft operational capability
        - Aircraft location (distance from target, airport requirement, etc.)
        - Flight crew qualifications/skills
- Risk
    - Target attractiveness
    - Successive successful steps required to accomplish unauthorized activity
    - Existing security precautions

Industry groups have examined potential threats associated with GA/AW and subjected them to risk assessment techniques. The findings of these studies indicate that due to the numerous and successively dependent steps required to accomplish various unauthorized activities, the resulting probabilities were quite low. However, the threat from large fire suppression and agricultural aircraft were higher than GA aircraft, given their load carrying and special operational capabilities.

In determining these factors several general conclusions form a basis regarding potential threats from GA/AW operations:
- The threat is not globally uniform yet is generally considered to be low for most GA/AW operations.
- Vulnerability, in States containing large numbers of GA/AW aircraft, in the absence of security precautions, is moderate.

- For terrorists contemplating an attack using explosives, the disadvantages of GA/AW aircraft, compared to other means of delivery, such as trucks and boats, probably outweigh the advantages.
- Because large fire suppression and agricultural aircraft are potentially more hazardous, these categories of AW aircraft need more stringent protection and monitoring than GA and smaller AW aircraft.
- Effective security precautions for GA/AW operations have proved to be uncomplicated and in the realm of common sense. Importantly, in regions where significant GA/AW activity exist, States, aircraft owners and operators voluntarily have adopted simple precautions to prevent theft of and tampering with aircraft. These precautions will also prove effective in reducing vulnerability to the use of GA/AW aircraft by terrorists.
- If State security agencies, as well as aircraft owners, pilots and operators, implement practical security precautions, the risk of terrorists misusing GA/AW aircraft will be low.

Security Controls for General Aviation and Aerial Work

Because of the diversity and frequency of GA/AW operations it is difficult to classify and establish security programs that fit all types of operations. More significantly, the level of activity and geographic dispersion of these activities make effective enforcement by State forces very difficult. Therefore, States with large numbers of GA/AW operations have formed partnerships with those operators that draw upon the security objectives of both State and operator to achieve common goals. For instance, the desire of the operator to protect aircraft and flight crew from harm or misuse closely matches the State's desire to prevent misuse of the aircraft for more sinister purposes. Therefore, working together the State and operators can establish common procedures that meet mutual objectives.

Security measures for GA/AW must be based on a continuing assessment of the threat posed by their activities. As threats emerge and change appropriate security measures may be imposed. Classes of security measures include:

- Identification and registration
- Local controls
- Operational controls

Identification of pilots and aircraft form the basis of security controls for GA/AW. The ability to correctly identify a flight crewmember and aircraft should lower potential threats to easily manageable levels. All pilots and student pilots authorized to independently operate (solo) an aircraft are required to be licensed by the State.[4] The pilot license, when linked to a government issued identification containing a photograph (such as a driving license), will permit authorized personnel to positively identify pilot personnel. Similarly, the aircraft registration certificate (required to be carried on board the aircraft[5]) will both establish the authenticity of the aircraft registration markings and its ownership.

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[4] ICAO Annex 1
[5] ICAO Convention, Article 29

State intelligence and security agencies can assist aircraft and airport operators and handling facilities[6] by providing them with relevant and appropriate security information. Such information may include changing threat levels or specific information about personnel or techniques that may increase operational threats. Importantly, GA/AW personnel may complement this type of information by providing information to security forces regarding suspicious or clandestine activities at airports and handlers. Formal procedures should be established to facilitate this information flow. (See Airport Community Watch Program)

Local controls are normally associated with access to airports and airport operating areas. The ability to control access to aircraft parking areas, hangars and handling facilities will normally prevent most unlawful acts associated with aircraft. GA aircraft based at or operating on airports serving scheduled CAT will be subject to relevant State requirements and the airport operating authority's security program. However, these controls normally are not as restrictive as those for scheduled CAT since GA operating areas are not located within designated security restricted areas.

GA operations at non-commercial service airports will normally have fewer security controls applied due to the lower threat levels associated with those activities. Notably, access restrictions to aircraft operating areas are more difficult to impose and enforce due to the lack of security infrastructure and personnel. The expense associated with perimeter fencing, ramp lighting, operating and storage area surveillance and access control are prohibitive for most GA/AW airports; importantly, the potential threat does not justify such measures. Yet, existing controls imposed at these airports to deter theft and vandalism are normally adequate to prevent misuse of the aircraft. (See General Aviation Airport Security Procedures)

Operational control refers to airspace restrictions imposed by the State to prevent operation of aircraft in the vicinity of sensitive areas or activities. These controls are normally applied sparingly to small areas to protect only the most important ground activities; enforcement of restrictions associated with large or numerous restricted areas is difficult. Further, excessive use of restricted airspace unnecessarily denies aircraft operator's operational flexibility and freedom of transit. Temporary flight restrictions associated with specific activities or events are normally considered more effective than permanent or large area prohibitions.

It should be emphasized that the imposition of security controls on GA/AW without conducting segmented threat/risk assessments may unnecessarily restrict those operations while depriving more legitimate security concerns of appropriate levels of emphasis and resources. GA/AW activities have historically shown little reason for major security concerns when compared to other forms of aeronautical activity or transportation modes. Consequently, a number of States with active GA activity have imposed few security controls for small GA aircraft due their low threat levels, choosing to rely on the self-interest of the aircraft owner/operator to protect them from theft or misuse.

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[6] Aircraft handlers and Fixed Base Operators (FBO) are companies that fuel, service or park GA/AW aircraft or provide transient facilities for pilots and passengers.

Recommended Procedures for General Aviation and Aerial Work Security

While the diversity of GA/AW makes it difficult to form a single set of security precautions that will fit every possible activity, the following represent a compilation of practices in use by a number of States to prevent misuse for a variety of aircraft operations: (Specific programs are provided (below) for larger aircraft, on-demand CAT (air taxi) and aerial work operations)

State

- Institute ongoing threat and risk assessment measures for GA/AW operations
- Ensure proper licensing and identification procedures for aircraft owners, pilots, mechanics and other personnel authorized access to aircraft and aircraft operating areas
- Maintain accurate pilot licensing and aircraft registration records
- Initiate communications channels between the intelligence community and GA/AW organizations and businesses and airport operators to ensure effective exchange of security information. This should include a system to disseminate reports of stolen aircraft and a watch list for known or suspected terrorists.
- Ensure law enforcement personnel are familiar with GA/AW operations and their security needs

Aviation Personnel

- Carry valid licensing and identification documents while at airports
- Report suspicious or clandestine aviation activities to law enforcement agencies
- Ensure the security of owned or operated aircraft
- Pilots-in-command must properly identify passengers, baggage and cargo to be carried on their aircraft

Aircraft

- Equip with effective anti-theft devices. (Aircraft cabin and ignition locks will normally accomplish this objective. Where assessments indicate higher risk levels devices to immobilize the aircraft may be warranted.)

Aircraft Handlers/Repair Facilities/Businesses

- Develop and implement a written security program that includes:
  - Personnel qualifications
  - Security procedures
  - Preventative measures
  - Contingency/response measures

- o Reporting procedures
- Conduct ongoing security threat assessments of areas of responsibility
- Conduct background investigations of employees performing critical functions
- Maintain contacts with law enforcement and State security personnel to ensure the security of their areas of responsibility
- Separate GA/AW passengers and flight crew from CAT operations
- Institute measures to ensure the security of aircraft in their custody
- Control pedestrian and vehicular access to aircraft operating areas

Security Precautions for Aerial Work Operations

Because of the size, payload and special characteristics of certain types of AW operations special precautions may be necessary to prevent their misuse. Aerial work operations are defined by ICAO as *operations used for specialized services such as agriculture, construction, photography, surveying, observation and patrol, search and rescue, aerial development, etc.* Of particular security concern are aircraft that can carry large, bulky or heavy loads such as those used for fire suppression, construction or sky diving operations. Additionally, specialty aircraft such as those used for agricultural application and insect control are of concern because of their potential for dispensing harmful aerosols.

All AW operations should be subjected to a State conducted threat assessment process to determine whether additional precautions are necessary. AW operations deemed to pose a significant threat should be required to establish and maintain a State approved written security program, incorporating the following provisions:

- Facility and aircraft security measures and procedures
- Background checks for certain types of employees
- Security training and knowledge requirements for employees
- Compliance with security directives and information circulars
- Designation of a security coordinator
- Contingency and response plans

Note: All AW aircraft with a maximum certified takeoff mass (MCTOM) exceeding 5,700 kgs. should also be subject to the provisions of the Large Aircraft Security Procedures.

General Aviation Airport Security Procedures

The diverse size and configuration of GA airports makes the establishment of a single set of security precautions difficult. By definition these facilities do not serve scheduled commercial air transportation yet may accommodate occasional air taxi operations. But, the great majority of GA airports are used for aerial work or personal transportation purposes.

GA airports may be as small as a 300-meter grass runway and have no based aircraft, hangars, buildings or other infrastructure. At the other end of the spectrum a GA airport may have

multiple paved runways exceeding 2000 meters in length, hundreds of based aircraft and large complexes of hangars, buildings and business facilities. Because of this diversity a single security formula is inappropriate for all GA airports.

Threat and Risk Assessment

The first step in devising a security program for a GA airport is to determine the type and size of threats facing the facility. Small, remote airports obviously face different threats and levels of threats than large airports located close to major metropolitan areas. Threat assessment should consider the following factors:

- Size and configuration of the airport
- Proximity to major metropolitan areas
- Number and type of based aircraft
- Number of aircraft operations

Before any threat assessment is undertaken the actual capability of a GA aircraft to cause damage to persons or ground infrastructure should be understood. Most GA aircraft are too small to pose a significant threat due to their inability to carry a sufficiently large quantity of explosives. Further, in order for a small aircraft to have any impact careful loading and fusing of the explosives must be accomplished; these actions take time and expertise. Therefore, lengthy clandestine preparations must be made, often difficult at active airports.

Small remote airports pose a significantly lower threat than do larger more capable ones. But, any moderate sized airport, located within 50 km of a major metropolitan area may constitute an elevated threat due to the proximity of potential terrorist targets. Yet, size alone does not constitute an appreciable threat; if there are few based aircraft or annual operations, the threat will likely be small. Size and capability of based or transient aircraft will help determine relative threat, as well. Finally, busy airports with a mixture of large and small aircraft operations may require several levels of analysis.

The risk assessment should consider the following questions:

- What are the potential aircraft misuses?
- What possible targets are available?
- What is the probability of the action being accomplished?
- What aircraft/operational capabilities are required to accomplish this misuse?

Because the local knowledge of the above factors is probably incomplete, assistance in conducting an airport threat assessment should be provided by State and local intelligence and law enforcement agencies. Ideally, a master aviation threat assessment should be conducted by State authorities on an ongoing basis to provide all concerned with current information.

Once the risk assessment has been completed measures to mitigate those threats can be devised through policy, procedural and physical security precautions.

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Security Precautions

The principal method of preventing the misuse of GA/AW aircraft is to prevent the unauthorized access to the aircraft itself. The primary means of preventing unauthorized use is to lock cabin and/or cockpit access doors. In high threat/risk areas additional precautions may be necessary, usually involving measures to immobilize the aircraft.
The next method of preventing misuse is to deny access to aircraft itself. This is done through perimeter security controls. Security fences, locked hangars and operating area access controls serve as credible deterrents. However, the majority of GA airports are too small to warrant (through threat assessment) or justify (economic viability) these measures. Some States with large numbers of GA/AW aircraft have successfully implemented programs in which airport operators and other interested personnel actively look for unusual or suspicious activity that may constitute a security threat and report these events to law enforcement agencies. (See Airport Community Watch Program)

Security precautions for GA airports should be viewed as an increasingly restrictive set of measures to meet threats determined through ongoing threat assessments. Examples of these measures include:

<u>All airports</u>

- Conduct an informal security evaluation, based on local conditions
- Install signs warning trespassers of legal consequences
- Develop an appropriate surveillance schedule
- Establish liaison with local law enforcement agencies

<u>Medium Size GA Airports</u> (Paved runway longer than 1000 meters and/or more than 50,000 annual aircraft operations)

- Conduct regular security evaluations
- Establish and maintain appropriate security measures and procedures
- Develop and implement a written security program that includes:
    o Personnel qualifications
    o Facility and aircraft security measures and procedures
    o Preventative measures
    o Contingency/response measures
    o Reporting procedures

<u>Large GA Airports</u> (Runways longer than 2000 meters and/or more than 100,000 annual aircraft operations)

- Designate a security coordinator
- Implement airside access controls

- Provide appropriate perimeter physical security for ramp and parking areas (fences, surveillance cameras, etc.)
- Enhance existing written security program to include:
  - Access controls
  - Procedures for handling bomb or air piracy threats
  - Background checks for certain types of employees
  - Security training and knowledge requirements for employees
  - Compliance with security directives and information circulars
  - Security drills/exercises

Security Breach Response

Response to a suspected or actual security breach should be a part of all airport security programs. The ability for all personnel to react positively and rapidly may make the difference between a major security event and a minor administrative issue. Plans, coordinated with local and State law enforcement agencies should be developed for at least the following events:

- Access control breach
- Theft or attempted theft of an aircraft
- Assault on an airport employee, tenant or transient persons
- Bomb threat
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Airport Community Watch Program

The vigilance of airport users is one of the most prevalent methods of enhancing security at GA airports. Typically, the user population is familiar with those individuals who have a valid purpose for being on the airport property. Consequently, new faces are quickly noticed. Teaching an airport's users and tenants what to look for with regard to unauthorized and potentially illegal activities is essential to effectively utilizing this resource.

Airport managers can either utilize an existing airport watch program or establish their own airport specific plan. A watch program should include elements similar to those listed below. These recommendations are not all-inclusive. Additional measures that are specific to each airport should be added as appropriate, including:
- Coordinate the program with all appropriate stakeholders including airport officials, pilots, businesses and/or other airport users.
- Work with local law enforcement agencies to develop a program that involves them from its inception.
- Hold periodic meetings with the airport community.
- Develop and circulate reporting procedures to all who have a regular presence on the airport.

- Encourage proactive participation in aircraft and facility security and heightened awareness measures. This should include encouraging airport and line staff to 'query' unknowns on ramps, near aircraft, etc.
- Post signs promoting the program, warning that the airport is watched. Include appropriate emergency phone numbers on the sign.
- Install a bulletin board for posting security information and meeting notices.
- Provide training to all involved for recognizing suspicious activity and appropriate response tactics. This could include the use of a video or other media for training. The following are some recommended training topics:
  - Aircraft with unusual or unauthorized modifications.
  - Persons loitering for extended periods in the vicinity of parked aircraft, in pilot lounges, or other areas deemed inappropriate.
  - Pilots who appear to be under the control of another person.
  - Persons wishing to rent aircraft without presenting proper credentials or identification.
  - Persons who present apparently valid credentials but who do not display a corresponding level of aviation knowledge.
  - Any pilot who makes threats or statements inconsistent with normal uses of aircraft.
  - Events or circumstances that do not fit the pattern of lawful, normal activity at an airport.
- Utilize local law enforcement for airport security community education.
- Encourage tenants to make their staff aware of the airport watch programs.

It is essential that every airport employee, tenant, and user is familiar with reporting unusual or suspicious circumstances on airport property. There are three basic ways that persons can report suspect activities. First is to airport management. Oftentimes questions regarding the legitimacy of an activity can be quickly and easily resolved by bringing it to the attention of an airport employee. The second is through a national or wide-area toll-free central telephone reporting number, connecting to a law enforcement or intelligence agency. Finally, direct contact with a local law enforcement agency may provide the most responsive and effective means of reporting. 1-05

**IAOPA Statement Regarding
Economics of Airports and Air Navigation Services**

Background

General aviation and aerial work (GA/AW) operations form the foundation of the world's air transportation system. Airline pilots are created through its training, critical care is provided to the populace through emergency medical service aircraft and business aviation supports national and international commerce; GA/AW forms an essential and significant force in the world of air transportation. The more than one million pilots and 370,000 aircraft engaged in general aviation and aerial work operations throughout the world comprise a majority of aviation operations; they contribute significantly to national and international economies. Their needs must be accommodated when planning and operating the aviation infrastructure.

The great majority of worldwide aviation facilities and systems are designed and operated for the benefit of the airlines. GA/AW generally operate at the margins of this system, taking advantage of capacity unused by air carriers. Therefore, any discussion of funding the aviation infrastructure must realize that GA/AW operations command only a small fraction of all services provided in the total system. Further, the majority of GA/AW operations are able to operate safely without using many air navigation or traffic services.

Airports

Organization. While the organization and control of international airports means little to the general aviation/aerial work operator, several features of that organization tend to have a significant impact. If the airport is a government owned/operated entity, the operations are usually stable and predictable. Yet, these operations may be rigidly structured and unable to respond to user demand. Conversely, while private ownership may lead to more flexible and user-oriented operations, user fees and charges will probably be higher than at a government-run facility. And, as airport operation becomes fully privatized the ability for users to receive funding support from government excise taxes fades rapidly. Therefore, the ability of an organization to adequately support user needs at a reasonable cost is the key to an effective and efficient airport operation.

Capacity Management. As capacity demands increase airports should first look to operational efficiency and innovative solutions before any artificial allocation or queuing schemes are imposed. Additional runways and taxiways, more efficient air traffic management, land-and-hold-short provisions and land-long techniques for smaller aircraft are examples of what can be done to improve airport capacity without imposing artificial restrictions.

Only after all of these operational enhancements have been explored should artificial capacity constraints be attempted. Of all the economic mechanisms used to control capacity, slot allocations are the least desirable for GA/AW. This is because the concept of equal access is often biased in favor of the air carrier. High minimum fees are also used to effectively restrict GA/AW access to busy international airports, yet these fees tend to exclude both GA/AW and smaller air carrier aircraft even when excess capacity exists. But, peak-hour access fees, if applied equitably, often control demand during an airport's busiest periods.

The ultimate and ideal capacity enhancement tool is additional airports. Strategically located reliever airports with ready access to major metropolitan areas not only relieve capacity pressure on principal international airports; they also create additional economic centers and reduce ground transportation congestion within metropolitan areas. While many governments have effectively discarded the idea of constructing reliever airports because of environmental and land use pressures, others have succeeded in placing additional airports at the periphery of heavy populated areas. To succeed, these new facilities are located near public transportation that provide easy access to city centers.

Financing. The fact that an airport is government owned and/or operated implies that its operation is being provided for the public good or advantage. In this case capital financing should be principally accomplished through the use of excise taxes tied to the operation of the aircraft using the facility. Fuel excise and passenger ticket taxes are an example of this type of tax. Additionally, landing and facility use fees may also be applied to individual aircraft operations to pay for operational expenses.

Privately owned and operated airports may receive capital grants or loans from States in recognition of the value and economic advantage provided by a healthy national and international air transportation system. However, much of the capitalization will be accomplished through facility improvement set-asides derived from the full range of airport revenues. Finally, airport corporations issuing equities and bonds may provide the ideal means of raising funds for capital improvements.

Assigning aircraft and passenger use fees at airports must recognize that GA/AW operations use but a small fraction of the infrastructure and cause little maintenance-related expense. Essentially, GA/AW operations operate at the *margins* of the air transportation environment and effectively use only *excess capacity and services.* Therefore, allocation of airport access and use fees for GA/AW should reflect only the marginal costs for their operations.

The existing guidance provided for Airport Charging Systems contained in ICAO Document 9082 provides succinct and appropriate counsel: *Airport charges levied on international general aviation should be assessed in a reasonable manner, having regard to the cost of the facilities needed and used and the goal of promoting the sound development of international civil aviation as a whole.*

Air Navigation Services

Organization. Governments have an obligation to their citizens and foreign visitors to provide basic services that bring order and safety to the polity in pursuit of legitimate goals. Among these are provisions for air navigation services (ANS) that provide for the safe, orderly and efficient flow of air traffic.   Whether the government or a private enterprise provides these services is irrelevant; however, the provision for and oversight of these services is the responsibility of the government. (ANS associated services include: Navigation and communications infrastructure, air traffic services, meteorological services, search and rescue and aeronautical information services.)

Capacity Management. Again, artificial metering mechanisms, like slot allocation, peak-hour charges and high minimum charges, are viewed as last-resort actions when considering management of air traffic capacity. Innovations such as direct routing through area navigation (RNAV) processes, reduced vertical separation minimums (RVSM and intelligent structuring of airspace to accommodate both VFR and IFR users are examples of creative capacity management. Only when the absolute capacity of a route segment or terminal sector is reached should queuing methods be used. But, the method used to determine system and segment absolute capacity should be subject to review by both government regulators and users.

Principles of fairness and equity should govern ATM within a State. Efforts to accommodate all types of operators must be made.

Financing. Financing the basic ANS infrastructure should be accomplished by the State, using excise taxes derived from either fuel tax revenues or passenger ticket taxes. And, since basic civic safety and order functions are involved in providing ANS, a portion of the State's general revenues should also be used to create a safe and efficient infrastructure.

Once the capital, research and development and future improvement costs of operating an ANS system have been accommodated through tax revenues, operational costs may be recovered through similar methods or a system of graduated user charges. The use of tax revenues to fund system operations and maintenance is preferable due to the ease of collection of revenues and the lack of need for a complicated accounting system.

However, if direct user charges are employed a graduated system of fees should be used that recognizes both value for services received and the obligation for a state to provide basic safety services to the traveling public. For instance, requiring a private pilot to pay a significant fee for a meteorological and NOTAM briefing and for filing a VFR flight plan prior to flight may subvert safe operations. This is because the pilot may choose to avoid these essential safety services in an effort to avoid the charges associated with the services. Therefore, consideration must be given to providing essential services using tax revenues in support of safe operating practices.

Again, the existing guidance provided for Air navigation services charging systems contained in ICAO Document 9082 provides succinct and appropriate counsel: *The charges levied on international general aviation should be assessed in a reasonable manner, having regard to the*

cost of the facilities needed and used and the goal of promoting the sound development of international civil aviation as a whole.

Regulatory Aspects

All taxes, fees and charges associated with airport and ANS must be established as a cooperative effort between government regulator, service provider and service user. Only a joint effort of this nature will yield a workable, safe and effective aviation infrastructure. Dictated funding systems or those biased for or against any user segment will cause users and providers to subvert the system in an effort to achieve perceived equity. Finally, once planning and use mechanisms are put into place an ongoing dialog is necessary to preserve the system.

Conclusion

Provision for an ideal aviation infrastructure should adhere to international standards and recommended practices, be responsive to user needs and employ cost recovery methods that realistically reflect an equitable assignment to both user and the polity ultimately benefiting from the air transportation system. 3-05

ICAO Top Safety Items

-- IAOPA Input --

Problem	Proposed Solution
Accurate and detailed accident/incident data for general aviation (GA) are not available in most States. Without this information effective safety solutions, education and training are difficult to develop.	Devise methods and mandates within States that will ensure adequate GA accident/incident data collection, analysis and publication.
Terminal airspace design often creates unsafe conditions for GA VFR operations by forcing aircraft to fly too low or close to obstacles and by bunching aircraft into limited airspace areas.	Provide standards and recommended practices (SARPS) to ensure terminal airspace design considers its effects on GA VFR operations. (User consultation is an important method of avoiding unsafe design practices.)
Regulatory standards may make safe VFR operations hazardous. Airspace misclassification and placement, operational rules and air traffic control procedures are examples.	Devise guidance to promote safe standards for VFR flight. Proper airspace classification and ATM procedures should be made priorities in this effort.
Excessive costs associated with weather briefings, aeronautical information, flight plan handling and enroute communications may cause pilots to avoid using these services, thereby contributing to unsafe operations.	Provide aviation safety-related information and operational services at no or low cost to encourage safe operations for general aviation, especially while flying VFR.
Controlled airports sometimes fail to provide separate GA and large aircraft traffic patterns and takeoff and landing intervals.	Revise/emphasize airport traffic separation standards to ensure adequate separation between large and small aircraft.
Costs associated with training, pilot currency, required equipment, airworthiness, air traffic routings and facilitation are all borne by the individual GA pilot or operator. Pilots/owners often fly less and may become less proficient as costs increase, thereby impacting safety.	Carefully consider the cost impact of each new or revised SARP by using cost-benefit analysis techniques to determine the potential safety implications for the worldwide GA community.
Runway incursions continue to be a significant hazard in airport operations	Continue runway incursion research and promulgate appropriate SARPS.
Aviation safety education and training for GA operations is not readily available in many parts of the world.	Devise and distribute aviation safety materials for GA operations.

10-08

**General aviation safety improving
but State support required**

*A working paper delivered at the ICAO D*irectors General of Civil Aviation Conference
on a Global Strategy for Aviation Safety, Montreal, 20 to 22 March 2006

Background

General aviation comprises all worldwide non-commercial civil aviation, representing four-fifths of all civil aircraft and two-thirds of all pilots. This segment of the aviation market has enjoyed a significant increase in aircraft produced since the economic downturn early in this decade. Importantly, more than 3,000 general aviation aircraft were produced worldwide in 2005, approximately 20 percent more than the previous year. Fully 70 percent of these new units were light piston-engine aircraft.

State data and estimates supplied by the International Council of Aircraft Owner and Pilot Associations (IAOPA) indicate that world civil aviation consists of approximately 370,000 aircraft and 1.3 million pilots flying some 39 million hours during 2004. These totals remain relatively stable compared to 2003.

A majority of these aircraft are used for personal transportation and occasional recreation, however specific types may be used for more utilitarian roles and business transportation. Significantly, the economic impact of general aviation on the economy exceeds $70 billion annually in North America, the only region for which data is available.

A separate aviation segment not normally included in general aviation (because of non-uniform certification and pilot licensing standards) is the ultralight, microlight and very light aircraft community. This segment of general aviation is growing at a rate of 10 percent in some parts of the world due to lower purchase and operating costs and reduced certification/licensing requirements. It is estimated that in excess of 100,000 of these aircraft and 250,000 pilots for this segment exist worldwide. (Note that these are in addition to the numbers stated above.) While these aircraft have limited performance characteristics they will provide and entry level for those seeking the greater utility value of more traditional general aviation aircraft.

Safety

Given the less stringent regulatory levels afforded general aviation, less capable aircraft and lower experience levels of the pilots, accident statistics for general aviation are generally higher that those experienced in commercial air transportation. Importantly, the general aviation operating environment is more hostile than that of the air carrier, featuring small aerodromes

without air traffic services, little or no meteorological information available and unreliable airport condition data available. Yet, private pilots have traditionally accepted these limitations, curtailing their activities to accommodate their personal, aircraft and environmental limitations.

In general, accident rates for light general aviation activities (aircraft with a maximum takeoff mass of less than 2,250 kg.) average approximately 10 accidents per 100,000 flight hours, depending on operating environment and flight purpose. At the upper end of general aviation there are dramatically lower rates, especially for turbine-powered corporate aircraft operations which typically experience accident rates comparable to of the airlines. It is sometimes difficult to equate accident levels due to variations in accident reporting standards and requirements among states. Moreover, few states publish general aviation activity levels, making it impossible to calculate accident rates.

Fortunately, the great majority of light general aviation accidents do not involve fatalities. Rather, they mainly involve light to moderate damage to the aircraft and little or no harm to its occupants.

Causes

Sadly, the principal cause for aircraft accidents worldwide is similar, whether they involve a light aircraft or airliner: pilot error. This error can stem from insufficient training, lack of experience, faulty judgment or inadequate support. While it is easy to blame the pilot for the accident, underlying factors may have contributed significantly. These contributing causes often put a pilot into an untenable position from which recovery is difficult or impossible.

Statements such as "pilot failed to accommodate weather conditions," "aerodrome conditions were not suitable" or "pilot did not react properly to deteriorating weather conditions" clearly indict the pilot but fail to examine underlying causes. Insufficient, nonexistent or delayed meteorological reporting, unavailable NOTAM information and out-of-date aeronautical information references are examples that make the pilot's job more difficult under the dynamic conditions that accompany every flight. Without timely support from government agencies the pilot's job becomes quite difficult; the partnership between pilot and ground-based information systems is of critical importance to flight safety.

Airlines usually avoid this information vacuum by generating their own data and a means of transmitting it to the flight crew, regardless of the level of information provided by the state. In some parts of the world meteorological, AIP and NOTAM information is either not readily available or prohibitively expensive for general aviation operations. The lack of this information contributes to a significant number of worldwide general aviation accidents.

Experience in a broad range of operating environments, proficiency and recency of experience are proven antidotes to aviation mishaps. This is especially true for the private pilots who normally have fewer flying hours in their logbooks and in a limited number of operating environments. Yet, to an increasing degree rising aircraft operating costs and regulatory restrictions serve as a disincentive for pilots to gain additional experience. Regulatory, air

traffic service and aerodrome fees have significantly increased the costs associated with general aviation operations over the past decade in many parts of the world. So, increased fees work against aviation safety for the private pilot who must pay for these services out of pocket. Ironically, these pilots all pay high aviation fuel taxes that seldom are used to amortize the operating fees.

Safety Measures

A number of states provide safety programs that actively support the general aviation community. Safety seminars, training programs, free publications and internet exercises are all useful for pilots to serve as ongoing reminders to the need to adhere to good operating practices and to strive for higher levels of achievement and awareness in aeronautical practice. Yet, the majority of states do not provide such inducements to higher levels of performance for pilots.

A majority of the 62 IAOPA affiliates produce a number of safety seminars and materials to serve as a reminder for their members to fly safely. These range from week-long training camps in Germany to a series of one-night safety seminars in New Zealand. Our premier aviation safety arm, the AOPA Air Safety Foundation (ASF), has produced a series of internet-based training programs that cover issues from weather interpretation to runway incursion avoidance specifically designed for private pilots. The ASF programs are available free of charge to any pilot worldwide. (See www.asf.org)

Additional state safety awareness support will be important since increasing numbers of light sport aircraft and ultralight/microlights are now entering the general aviation community. Pilots and owners of these often lightly regulated aircraft generally have less training and experience than do operators of more conventional aircraft. Therefore, the safety of these new groups will require continuing education and mentoring.

Action by the Conference

The Conference is invited to:

- Ensure that timely and affordable meteorological, AIP and NOTAM information are available to general aviation operators.
- Consider the potential negative effects of added regulation and increased fees on general aviation safety.
- Accommodate emerging forms of general aviation activity with appropriate levels of regulation and assistance.
- Provide safety information and programs for general aviation operators. (3/06)

IAOPA Comments to
ICAO Consultation Regarding Unmanned Aerial Vehicles (UAV)

The International Council of Aircraft Owner and Pilot Associations (IAOPA) appreciates the opportunity to provide input regarding this important subject. IAOPA represents the interests of more than 470,000 aircraft owners and pilots who are members in 67 worldwide affiliate organizations.

The proliferation of UAVs in both the civil and military sectors and their wide range of potential applications have captured the interest of the aeronautical world. The hundreds of UAV projects worldwide have sprung up just within the past few years, often outstripping the ability of national authorities to fully regulate and cope with the unique operational capabilities and requirements embodied in the concept. More important, the anticipated grow rate of this segment of aviation creates a pressing need for ICAO to address the issue and generate standards and recommended practices designed to ensure the safety of all aeronautical activities. This is an urgent requirement.

General aviation is especially impacted by the UAV revolution since many of its operations occur in the low altitude airspace structure, away from major hubs of aeronautical activity. The see-and-avoid principle is the primary and often only means of separating aircraft in low altitude and remote environment; it requires the active attention of pilots in *both* aircraft of effectively ensure separation. Without the vigilance of both parties the possibility of a collision increases dramatically.

Even in the IFR operating environment the hazard of collision exists despite modern transponder and collision avoidance technology. Constant human visual surveillance provides the ultimate avoidance backup, regardless of the best intended CNS/ATM schemes.

While segregating UAV and manned aircraft operations offers a measure of mutual protection, two issues emerge: is the UAV *system* sufficiently reliable to remain within its assigned airspace and will UAV airspace deny operational areas to the manned aircraft? The latter issue is of great importance to the general aviation community that constantly faces the erosion of available airspace in the name of military, national security and commercial aviation "necessity."

The issue of UAV reliability is key to the entire discussion of their operation. Not only must the UAV adhere to its assigned flight path to avoid other aircraft, it must be sufficiently reliable so that it will not create a hazard to structures and personnel on the ground.

Because of the above issues, the existing provisions of ICAO Annex 11 and Doc 9554 are inadequate to encompass UAV operational concepts.

Therefore, ICAO must consider and issue SARPs, where applicable, on the following UAV issues:
- System reliability
- System safety
- Operational concepts/scenarios
- Areas of operation and airspace allocation
- Operational control
- Operator qualifications and proficiency
- Coordination with conventional aeronautical activities
- Abnormal operations (failure modes)

Again, IAOPA considers that ICAO should assign a very high priority to addressing these issues.

Ultimately, UAVs must prove their ability to operate in any desired mode while providing the same level of safety afforded by manned aircraft operations. (9-05)

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IAOPA Comments on ICAO Language Proficiency

Amendment 164 to ICAO Annex 1 created language proficiency standards that will be required for all pilots operating internationally and air traffic controllers by March 2008. These standards hold the promise of increased safety and efficiency for international air transportation by facilitating communication within the air traffic control system. Although there are exceptions more than one million pilots and air traffic controllers will be required to demonstrate a high level of English language proficiency.

General Aviation

General aviation and aerial work comprise approximately 370 000 aircraft flown by more than one million pilots. Some of these operations are flown for work and business reasons but the majority are associated with personal use in much the same manner as automobiles are used. Importantly, the costs associated with the operation of these aircraft primarily are borne by the owner/operator. This includes purchase of the aircraft, continuing maintenance, fuel, insurance, pilot training, medical certification and proficiency demonstration required by State regulatory authorities, all adding up to a considerable financial burden. Conversely, it is States and airline companies who fund continuing training and certification requirements for air traffic controllers, aeronautical station operators and pilots in their employ.

The Need for Language Proficiency

Air traffic that operates under instrument flight rules (IFR) is under positive control of air traffic controllers. These controllers and pilots follow and respond to verbal radio communications to ensure the precise levels of control, separation and separation of aircraft. Because of this a high level of proficiency in a common language is essential for efficient and safe of operations.

There is another type of flying, visual flight rules (VFR), conducted largely in airspace where less control is required; general aviation predominantly operates in this fashion. Little or no control is exercised from the ground in this type of flying, rather pilots conform to basic rules of the air and depend on their ability to visually detect other aircraft to avoid conflicts. Occasionally, general aviation aircraft pass through or operate within the same closely airspace normally reserved for IFR operations; in this case communications with air traffic control is required.

Impact on General Aviation

More than one million pilots worldwide potentially will be affected by this standard. Compliance will involve months of training and thousands of dollars for each individual attempting to achieve level 4 language proficiency. Then, testing of individuals by the State will be required to confirm proficiency and ultimately to certify qualification.

The great majority of pilots, regardless of license level, perhaps as much as 80 percent, will never fly under IFR nor penetrate closely controlled airspace.

The impact on general aviation operations will be most acute in areas where a number of contiguous States make trans-border operations normal and inviting. Europe is an excellent example of this phenomenon, in which 50 000 aircraft and 300 000 pilots are based within 100 miles of an international boundary. Desiring to maximize the effectiveness of their investment and take advantage of travel opportunities, a thirty minute or one-hour flight to a neighboring state for business, personal or sport reasons has been a reality for more than a century.

Importantly, border crossings in which communications with air traffic control are required are rare, perhaps 5 – 6 times per year. Thus, requiring months of effort and expenditure of thousands of dollars for a few annual trips makes little sense, especially when the communications required do not normally involve areas in which high density IFR traffic flows exist. Therefore, the blanket requirement to impose a language proficiency requirement for all pilots is unnecessary.

The potential consequences of imposing a new requirement of questionable efficacy on general aviation are dire. General aviation operations have been shrinking significantly in recent years due to excessive restrictions and rising costs. High levels of language proficiency will become significant means of discouraging entry to or continuation of general aviation activities.

Discussion

Language proficiency specifying "grammatical structure is used creatively," "handle successfully and with relative ease the linguistic challenges presented by a complication or unexpected turn of events" and "can often paraphrase successfully when lacking vocabulary in unusual or unexpected circumstances" is unnecessary for the majority of VFR operations, even when occasionally operating in closely controlled airspace.

However, busy terminal areas in which the majority of traffic is operating under IFR may require a higher level of language proficiency for VFR operations. But, this requirement is time, traffic and sector dependent and should not be made a blanket requirement for occasional VFR users. Proficiency in phonetically speaking and understanding basic air traffic control phraseology should be adequate for most VFR operations.

Recommendation

Modify ICAO Annex 1, §1.2.9 to require a lower level of language proficiency for VFR operations conducted in airspace in which high-density IFR operations are not being conducted. Proficiency level 3 should prove adequate for these applications. (8-07)

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WORKING PAPER

TWELFTH AIR NAVIGATION CONFERENCE

Montréal, 19 to 30 November 2012

Agenda Item 4: Optimum capacity and efficiency – through global collaborative ATM

The Importance of Access and Equity in the Implementation
of the Global Air Navigation Plan

Presented by the International Council of Aircraft Owner and Pilot Associations
(IAOPA)

EXECUTIVE SUMMARY

This paper presents the International Council of Aircraft Owner and Pilot Associations (IAOPA) considerations for implementation of the aviation system block upgrades (ABSUs) related to the provisions of access and equity.

If done correctly, the implementation of ABSUs worldwide have the opportunity to improve safety, efficiency, and make all forms of air transport more environmentally friendly. If done incorrectly, they have the potential to unnecessarily exclude large segments of the air transport population and create insurmountable obstacles to safely and efficiently accessing airspace.

When States implement the ABSUs they must be mindful of the impacts of these decisions on the key performance indicator Access and Equity and ensure that all airspace users have the right of access to ATM resources needed to meet their specific operational requirements; and that the continued shared use of the airspace for different airspace users can be achieved safely.

Action: The Conference is invited to agree to the recommendation in paragraph 3.

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1.   **INTRODUCTION**

1.1   Implementation of Performance Based Navigation (PBN) and the block upgrade process by Member States offers the potential of improving the safety and efficiency of all airspace users and offers the promise of increased all weather access to many locations not previously obtainable. However, implementation of PBN and block upgrades without consideration and input from all stakeholders has the potential to unnecessarily exclude certain airspace users and establish artificial barriers that would prohibit equitable access to ANS services by all airspace users.

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2.   **BACKGROUND**

2.1   Key Performance Areas (KPA) access and equity text taken from Appendix D of the Global Air Traffic Management Operational Concept (Doc 9854) states:

> **Access and equity.** A global air navigation system should provide an operating environment that ensures that all airspace users have the right of access to ATM resources needed to meet their specific operational requirements; and ensures that the shared use of the airspace for different airspace users can be achieved safely. The global air navigation system should ensure equity for all airspace users that have access to a given airspace or service. Generally, the first aircraft ready to use the ATM resources will receive priority, except where significant overall safety or system operational efficiency would accrue or national defense considerations or interests dictate by providing priority on a different basis.[i]

2.2   The objective of improved access should be part of any airspace modernization plan and the principles of access and equity must be considered in the choices and decisions that air navigation service providers make. Planning documents published by the FAA and EuroControl have realized this concept and provided guidance that quantifies the objective and each is establishing performance metrics to capture this principle.   Improving access measurements can be further defined as:

É   Ensuring that shared use of airspace and airports by different classes of airspace users will be significantly improved (classes defined by type of user, type of aircraft type of flight rule);

É   Where shared use is conflicting with other performance expectations (safety, security, capacity, etc.), ensuring that viable airspace and airport alternatives will be provided to satisfy the airspace users' needs, in consultation with all affected stakeholders.[ii]

2.3   Performance Based Navigation procedures have the opportunity to improve access into airfields currently not served with ground based equipment such as ILS's thereby reducing the impact on the primary air carrier airport resulting in an overall capacity increase for the area served. Certain guidelines should be used by States when developing PBN procedures that will result in improved efficiency including:

1.   <u>RNAV everywhere, RNP where needed or beneficial</u> – Most general aviation aircraft cannot reasonably equip with higher level requirements of RNP (such as RNP.3 with RF Legs) or commit to the ongoing training and certification requirements required by AR approaches. More significantly, RNP is not needed everywhere. RNAV and RNP are two different tools designed to address two unique challenges. Even air carriers have expressed a desire to "restrict" RNP to those locations where terrain, congestion, etc. make RNP a good choice.

2.   <u>Opportunity to improve, not replace</u> – Specifically, airways. In the United States they are in the very beginning process of replacing Victor Airways with T-Routes. In some cases, the T-routes are more direct, navigate around SUA, or address enroute conflicts, etc. This situation represents improvements that can be made with PBN procedures and improves efficiency for all airspace users. However, in other cases, the process is simply removing a Victor airway and replacing it with a T-route represents a lost opportunity to potentially improve the system once it is no longer reliant on ground based NAVAIDs.

3. NAVAID transition – Recognizing the inherent difficulties in a satellite-based navigation system (outages, jamming, testing, etc.) and the fact that not all aircraft are GPS equipped, there must be: a.) sufficient infrastructure in place during the transition, and, b.) a suitable backup means of navigation in the event of a GPS outage.

4. Plan for Mixed Equipage – While the desire of all Air Navigation Service Providers (ANSP) is to ultimately standardize equipage of aircraft flying within their service areas, there are aircraft from many stakeholder groups, low end GA, military, etc., that will never be able to attain the highest level of equipage envisioned in many PBN plans. Alternative procedures will need to be developed and maintained for the foreseeable future and ANSP's should plan accordingly.

5. Accommodate unscheduled operations – One of the major advantages for using general aviation over scheduled operations is the ability to dictate one's own schedule and modify it accordingly as changes occur. This may mean changes in times, routings, and destinations at a moment's notice. Equitable planning and on-going access for unscheduled operators should be designed into airspace modernization efforts at all phases of development.

3. RECOMMENDATIONS

3.1 The Conference is invited to agree on the following recommendations:

1. Encourage all States as part of the ASBU implementation to ensure that the principles of access and equity are included in all airspace modernisation and redesign efforts.

2. Encourage all States and ANSP's to implement RNP procedures only where absolutely necessary and utilize other PBN procedures such as RNAV in most instances where appropriate.

3. Encourage all States as part of their ASBU implementation plan to detail how they will monitor the service providers to ensure that they are providing fair, equitable, and efficient access to their services for general aviation operators.

3. Urge States to recognize the importance of collaboration with all stakeholders during each phase of ASBU implementation to ensure that improvements in airspace efficiency are beneficial for all and do not come at the expense of others.

- END –

International Civil Aviation Organization

WORKING PAPER

MULTI-DISCIPLINARY MEETING REGARDING GLOBAL TRACKING

Montreal, Canada, 12 and 13 May 2014

Agenda Item 3: Explore the potential for strengthening ICAO provisions on global tracking

General Aviation Experience with Aircraft Tracking

(Presented by IAOPA)

SUMMARY
This Working paper explores the problematic of existing Search and Rescue technology and suggests changes already voluntarily in use by General Aviation
Action by the meeting is contained in paragraph 5.

1.   INTRODUCTION

1.1   Recent aviation accidents have confirmed the longstanding proclamation by the Private Aircraft operators constituting the 400,000 members of the International Council of Aircraft Owners and Operators that the ICAO SARPs requiring the use of ELTs as the approved equipage for Search and Rescue were not suitable.

1.2   The August 2005 ELT Task Force offered statistics for false alarms that appeared to be almost totally maritime related and resulted in a decision to mandate the 406 MHz ELT.

1.3   The low reliability of ELTs and the inability to re-certify many units after periodic inspections has diminished the confidence of many aircraft owners in that technology's effectiveness as a viable alert system.

1.4   Private aviation has switched to tracking devices from the time they have come to market. They have proven more reliable, useful and desirable.

2.   DISCUSSION

2.1   Experience over the years of the ELT mandate have demonstrated failure rates of the installation of over 50%. That experience was based on the use of the 121.5 MHz installations.

2.2   Although the newer generation of 406 MHz ELTs may have reduced the number of false alerts from unidentified ELTs, their failure rates have yet to be established. The reasons for failure of these newer units are ascribed to poor installation, not being switched on, not being registered, not being maintained and antenna connection failures. The paradigm on which the ELT is based, that of requiring a device to function after a crash, is inappropriate.

2.3   Of the recent airline accidents involving airliners – the Air France overrun in Toronto, the Air France accident off Brazil, and the missing Malaysian– no ELTs or alerting devices activated. Each of these aircraft was equipped with somewhere near 11 ELTs or other alerting devices counting the ones attached to life rafts. Clearly the ELT should be considered a failed technology and to have been based on an improper paradigm. The high false Search and Rescue costs associated with the ELT concept are the result, partially, of requiring all aircraft to be equipped with ELTs, regardless of the aircraft operating environment or system efficiency.

2.4   In contrast, other technology has demonstrated to be more useful for locating aircraft in the types of emergencies that actually occur – such as cell phones or Personal Locator Beacons. This fact is demonstrated in the review of the 13 accidents that occurred in the United States and are listed by the SARSAT community as "saves" in 2012. In reading the textual reports provided, eight of the thirteen "saves" are actually directly attributable to Personal Locator Beacons carried voluntarily by pilots. And given the superior and superseding technologies already used by pilots and others to soon to appear on the market, such as ADS-B, the debate over which frequencies ELTs should transmit was not formulated on the proper questions.

2.5   Many General Aviation pilots have preferred to rely on tracking devices, designed to report the aircraft's position and track to friends, family and authorities via the internet.

2.6   Portable tracking devices in popular use by pilots offer a limited communication ability in addition to providing GPS location capability and they are light, small and portable for instances where pilots have moved away from their aircraft. One manufacturer reports that 12000 of his units have been sold to General Aviation users in the USA and 4500 to Canadian owners.

2.7   General Aviation operators have recognized the need for and adapted to tracking technology particularly since its functioning can be verified on a cell phone prior to flight and because the aircraft's path is sent and recorded to responsible persons via the internet.

2.8   Mandating specific equipment sets up the trap of forcing aircraft owners to purchase new equipment each time the technology is updated or new technology is developed. It also precludes and disincentives pilots and owners from using new technologies – even though the new technology may be better suited to their flight operations – simply because it "does not meet the regulatory requirement". As well, technology manufacturers are likely not to invest in research and development of new and more efficient technology when ICAO standards mandate the use of a specific and older technology.

2.9   In the interests of safety, the Search and Rescue community should use all available signals, not just one, and it should encourage pilots' use of alternative affordable technology. That is best accomplished by allowing the use of any alternate technology so long as it meets certain performance-based standards – not by mandating the use of one already ageing product. Safety is not advanced by promoting reliance on one system to the exclusion of all possible helpful technologies.

3.   CONCLUSIONS

3.1   Experiences over the years of the ELT mandate have demonstrated failure rates of the installations of over 50%. That experience was based on the use of the 121.5 MHz installations.

3.2   Although the newer generation of 406 MHz ELTs may have reduced the number of false alerts from unidentified ELTs, their failure rates have yet to be established. The reasons for failure of these newer units are ascribed to poor installation, not being switched on, not registered, not maintained and antenna connection failures.

3.3   Private aviation operators have the incentive and the knowledge to choose the most reliable and useful Search and Rescue system suited to their particular operation.

3.4   Mandating a specific technology for Private aviation as well as Commercial aviation (such as 406 Mhz ELTs) will stunt the development and use of future emergency technology

4.   RECOMMENDATIONS

4.1   Any eventual Search and Rescue SARPs should permit alternative and affordable technologies, such as tracking, in place of the ELT for private aircraft under 5700 kg.

4.2   Any new wording proposed for Global Search and Rescue requirements should be commensurate to the type of operation.

4.3   In lieu of mandating specific equipment, ICAO Standards should take a performance-based approach to aircraft emergency alerting. The approach should permit and promotes multiple options or combinations of options such as the use of Personal Locator Beacons or other portable devices. Encouraging and using commercial services for alerting is better than requiring one specific technology that may grow outdated as technology progresses.

4.4   Any new SARPs should leave it to users to decide how best they may meet a performance-based Search and Rescue requirement in response to a SARP for Global Tracking.

5.   ACTION BY THE MEETING

5.1   The meeting is invited to:

   a) Note the information in the paper

   b) Consider a multi-disciplinary and performance based approach toward the development and formulation of any international standards requiring global flight tracking; and

   c) Agree to the recommendations in paragraph 4 above, as may be amended by the meeting.

CONSTITUTION AND BYLAWS

Amended January 14, 2019

**INTERNATIONAL COUNCIL OF
AIRCRAFT OWNER and PILOT ASSOCIATIONS**

CONSTITUTION AND BYLAWS
International Council of Aircraft Owner and Pilot Associations

Article I -- Name -- The name of this organization is the International Council of Aircraft Owner and Pilot Associations, abbreviated IAOPA.

Article II -- Composition -- The IAOPA is a nonprofit organization, comprised of not more than one national aircraft owner and pilot organization from each nation throughout the world.

Article III -- Governing Authority of the IAOPA -- The governing authority of the IAOPA is the Executive Board, hereafter referred to as the Board. The chief executives of all accredited member organizations, each of whom shall have qualified for a valid pilot certificate, shall comprise the Board. Their names shall be listed with IAOPA headquarters before April 1 of each calendar year. A minimum of 13-member organizations, each represented by its chief executive, shall constitute the first legal Board of the permanent IAOPA.

Article IV -- Headquarters -- The location of the IAOPA headquarters shall be determined by the President, subject to approval by the Board.

Article V -- Purposes -- The purposes of IAOPA are:

  1. To facilitate the movement of aircraft internationally, for peaceful purposes, in order to develop friendship and understanding among peoples of the world.

  2. To coordinate the views and opinions of member organizations as expressed by members of the Board, with respect to proposed requirements, recommended practices, procedures, rules, facilities and services for international aviation.

  3. To represent the views and interests of the Board on general aviation matters at Regional, Divisional, Commission, Committee and Council meetings of the International Civil Aviation Organization.

  4. To develop and promote desirable and usable standardization for the regulation and guidance of general aviation.

  5. To encourage the implementation of planned systems, facilities, services and procedures in order to promote flight safety and efficiency for general aviation.

  6. To collect from and disseminate among member organizations information, data and statistics relating to general aviation, including, inter alia, those pertaining to the progress of air navigation, communications, facilities and the operation of general aviation aircraft.

Article VI -- Membership -- National organizations, comprised only of aircraft owners and/or pilots, or wholly autonomous pilot-owner divisions or sections of national aviation organizations, shall be eligible for membership in the IAOPA. In this latter case, the chief executive of the pilot-owner division or section of the national organization shall serve as that organization's member of the Board. For accreditation purposes, a pilot is defined as any individual who has soloed an aircraft.

Article VII -- Regular Meetings of the Board -- Regular meetings of the Board shall be held once every two years, upon call of the president or upon written request of ten members of the Board, addressed to the IAOPA Secretariat. Not less than 18 months nor more than 30 months shall intervene between regular meetings.

Article VIII -- Special Meetings of the Board -- Special meetings may be convened, between biennial meetings, by the president or upon written request from ten members of the Board, to consider urgent matters affecting international general aviation.

Article IX -- Notice and Agenda for Regular and Special Meetings – Written notice of all Regular and Special meetings, as well as the relative agenda, shall be provided by the president to all members of the Board at least 90 days in advance of the dates on which such meetings are convened.

Article X -- Representation at Regular and Special Meetings -- IAOPA officers and all accredited members of the Board are eligible to attend Regular or Special meetings. In case it may not be possible for a Board member to be present at any scheduled meeting, he may designate another pilot member of his national organization to represent the member organization at Regular and Special meetings. Not more than two technical or scientific advisors may participate with Board members or their duly designated representative in Regular or Special meetings but shall not be eligible to vote. Accredited observers shall be welcome but shall not be eligible to vote.

Article XI -- Quorum at Regular and Special Meetings -- A quorum at all Regular and Special meetings of the Board shall consist of those member organizations in attendance.

Article XII -- Regional Meetings -- Regional meetings of the Board may be convened at the request of three or more members whose headquarters are located in any single ICAO region. Such requests, together with information on the agenda items to be discussed and the name of the organization accepting responsibility for secretarial arrangements shall be submitted to the IAOPA president for prior approval. The recommendations emanating from Regional meetings are not binding on the IAOPA until approved by the next Special or Regular meeting of the Board.

Article XIII – Meeting Rules and Procedures -- All questions of meeting rules and procedures, not specifically provided for in the Constitution and Bylaws of the IAOPA, shall be determined by the Board as needs arise.

Article XIV -- Duties and Responsibilities of the Board -- The duties and responsibilities of the Board are:

   1. To promote nationally through their respective member organizations, when practicable, the applicable purposes of the IAOPA as listed under Article V.

   2. To make recommendations and proposals to the president of the IAOPA for the progressive development of standards, practices, procedures, expanded regional plans, facilities and services needed by or desirable for general aviation during international operations.

   3. To vote the unit strength of member organizations which they represent at duly convened meetings and on general aviation proposals affecting international operations which are submitted by the IAOPA president.
   4. To elect the officers of the IAOPA.

Article XV -- Officers of the IAOPA -- The elective officers of the IAOPA are a president and a maximum of ten regional vice presidents. Regions of the world from which eight vice presidents may be elected, shall correspond to those established by the International Civil Aviation Organization. Each vice president shall reside in the region

for which he was elected. Two vice presidents may be elected from those areas of the world not specifically included in an ICAO Region. One of the elected regional or other area vice presidents shall be appointed by the president as senior vice president of the IAOPA.

The term of office for each elected officer shall be four years, beginning January I of the year following their election. All elected officers shall be eligible for reelection.

The secretary and treasurer of the IAOPA shall be appointed by the president. They shall reside in the city in which the headquarters of IAOPA is located.

Article XVI -- Filling Vacancies in the Elective Offices - Any unexpired term vacancy in the office of president shall necessitate the election of a new president, in accordance with the procedures outlined in Articles XXIII and XXIV of this Constitution and Bylaws, but not necessarily in accordance with the time and date periods specified therein.

Unexpired term vacancies in the office of any regional vice presidents shall be filled by the IAOPA president following advice and counsel from members of the Board located in the region or area affected.

Article XVII -- Duties and Responsibilities of the Officers of IAOPA –

(a) The President -- The president, representing the Board, is the chief executive officer of the IAOPA. He is empowered to authorize the employment of needed personnel and to discharge personnel as may be necessary, to direct the business affairs of the organization, to express, or delegate representatives to express the majority opinion views of the Board at all pertinent meetings of the International Civil Aviation Organization and take all actions necessary to further the facilitation, utilization and progress of international general aviation.

(b) The Senior Vice President -- When a vacancy occurs in the office of president, the senior vice president shall serve as acting president until such time a new president is elected for the unexpired term.

(c) Regional Vice Presidents -- Regional vice presidents shall act to stimulate the interest and expansion of IAOPA in their respective regions or areas. In addition, they may be requested by the president to attend and report on International Civil Aviation Organization meetings held in the region or area which they represent.

(d) The treasurer shall be responsible for supervision of the IAOPA accounting system and for-the receipt and disbursement of all funds. He/She shall prepare a balance sheet and a profit and loss statement pertaining to the financial affairs of the Council for each calendar year, and a budget for following years on a biennial basis. Both shall be submitted to the President for consideration by the Finance Committee no later than December 1 of each year.

(e) The secretary shall act to coordinate and execute the decisions of the Board and the president; he shall organize, direct and supervise the headquarters secretariat staff and their functions in order to assure proper conduct of the organization's business operations; and he shall maintain permanent records on all organizational activities.

Article XVIII -- Receipt and Deposit of IAOPA Funds -- Funds shall be received by the treasurer or his authorized assistant. They shall be deposited in a bank or banks satisfactory to the Board.

Article XIX -- Approval of Expenditures and Disbursement of the IAOPA Funds -- Financial Obligations of the IAOPA, previously approved by the president, or authorized by the budget shall be paid by checks signed by the IAOPA president and treasurer. In the temporary absence of either, the secretary shall be authorized to countersign such checks. All officers and employees receiving or disbursing funds shall be bonded.

Article XX -- Finance Committee -- The Board shall establish a Finance Committee consisting of three (3) members of the Board, plus the President and the Treasurer (ex-officio). The Treasurer will not have a vote. The term of

office on the Finance Committee of the three (3) Board members shall be until the next regular Board meeting. They can be reappointed by the Board. The functions of the Finance Committee shall be:

(a) to review the past and projected financial statements and to make any changes in the budget necessitated by the financial condition of the Council. The approved budget shall be notified to the President no later than January 1 of each year.

(b) to review the dues structure and recommend any changes necessitated by the financial condition of the Council. Any recommended changes shall be notified to the Secretariat for processing as an amendment to the Constitution and Bylaws.

Article XXI -- Voting -- All questions brought before the Board whether at Regular or Special meetings or by correspondence from the president, shall be determined by majority vote based upon the total number of unit votes cast.

Members of the Board, or their duly constituted representative are entitled to one-unit vote on all questions placed before them for each 3,500 accredited members* or fraction thereof in the national organizations which they represent.

* An accredited member is a pilot or aircraft owner who has paid an annual membership fee to the national member organization.

Members of the Board shall have a maximum of 80 days to vote on questions presented to them via certified airmail by the IAOPA president. Start of this 80-day period shall commence with the date shown on the communication or ballot forwarded by the IAOPA president. Votes returned to IAOPA headquarters, postmarked after expiration of the voting period, shall be considered null and void.

Elective officers of the IAOPA, while serving as members of the Board, or their duly named representatives, may vote the unit strength of the organizations which they represent on all questions coming before the Board.

Article XXII -- Certification of National Organization Membership Totals to the IAOPA -- The chief executive of each member organization shall provide the IAOPA headquarters with the exact number of accredited members in the national organization which he represents prior to January 1 of each year. The number of members thus provided shall determine the unit voting strength for each national member organization for the subsequent calendar year.

Article XXIII - Nominations Committee -- A Nominations Committee, consisting of five officers from member organizations in good standing, shall be appointed by the IAOPA president at least six months prior to termination of the expiring term of office. One of the appointed members shall be designated as chairman. Members of the nominating committee need not be members of the Board.

When a vacancy occurs in the office of president, the senior vice president shall proceed as quickly as possible to appoint the Nominations Committee.

The Nominations Committee shall select not more than two (2) candidates for each position to be filled, that is the presidency, and regional vice presidencies. A candidate for president must be a pilot member of one of the organizations affiliated with IAOPA and must be put forth to the Nominations Committee by his or her national organization. A candidate for regional vice president must be a pilot member of one of the organizations affiliated with IAOPA and must be put forth to the Nominations Committee by his or her national organization in the region. Officer nominations, from sources other than the Nominations Committee, shall be ineligible for inclusion on the election ballot.

The Nominations Committee shall submit its slate of officer candidates to the IAOPA president at least 90 days prior to termination of the expiring term of office.

Article XXIV - Election of IAOPA Officers - The Board, on a simple majority unit vote basis, shall elect the president and the several vice presidents of the IAOPA. Ballots, containing the names of all officer candidates selected by the Nominations Committee shall be provided all members of the Board by the IAOPA secretariat not less than 60 days in advance of the date on which newly elected officers shall take office. Completed ballots, signed by members of the Board, shall reach the IAOPA headquarters on or before December 31 of the election year. Ballots received after December 31 shall be considered null and void.

Article XXV -- Requirements for Membership in the IAOPA -- Only one national organization from each nation, all of whose members are certificated pilots or aircraft owners, which represents the interests and needs of general aviation and whose purposes agree substantially with those of the IAOPA, shall be eligible for membership. The chief executive of any applicant organization, when applying by letter for membership in the IAOPA, shall include therein (1) a list of the organization's officers, with addresses; (2) the total number of accredited pilot-owner members which comprise the organization at the time of application and (3) the amount of the membership fee which individual members pay to the national organization each year.
One copy of the national organization's Constitution, Bylaws, or other governing regulations, preferably in the English language, shall accompany the letter application for membership.

Article XXVI -- Admissions to the IAOPA -- Organizations which meet the requirements for membership as specified in Article XXV, may be accepted on a provisional basis by the IAOPA president. Following acceptance on a provisional basis, the president shall notify his action to all members of the Board and request approval or disapproval of the action taken. Unless more than 33% of the Board, on a unit vote basis, disapprove of the president's action within 60 days from the time of notification, the provisionally accepted organization shall become an accredited member of the IAOPA. Any provisionally accepted organization, not subsequently approved by the Board, shall be entitled to a refund of annual membership dues if such were paid previously.

Article XXVII -- Annual Membership Fees -- Beginning January 1, 2019, the annual membership fee for national members of IAOPA each calendar year, payable on or before April 1, shall be in accordance with the following schedule.

> Membership fee in IAOPA shall be determined based on the recommendation of the finance committee after reviewing the proposed budget for the upcoming calendar year as submitted by the Secretary General and approved by the Treasurer. Dues will be established in two categories, a minimum amount for all organizations with less than 500 or less accredited members, and a cost/member for those organizations with greater than 500 accredited members. These amounts shall be determined based on total membership numbers and calculated in to ensure the sum of all revenues collected cover proposed budget expenses. All fees shall be in US dollars.

The number of accredited members in the national organization shall be computed as of January 1, of the year for which the dues are payable.

Nonpayment of the annual membership fee, when due and payable, shall result in the cancellation of the Board member's right to vote. Voting privileges shall not be restored until delinquent membership fees have been remitted to IAOPA. Membership fees in arrears greater than two years shall result in the national organization losing its official status with IAOPA and being declared inactive.

Article XXVIII -- Resignations -- Resignations must be notified before April 1 of any calendar year. Otherwise, annual membership fees for the entire calendar year shall be payable to the IAOPA.

Article XXIX -- Expulsions -- Expulsion of member organizations shall be effected only by the Board for noncompliance with the Constitution or for actions detrimental to the purposes for which the IAOPA is founded. A total affirmative vote (for expulsion) of 66% of the voting units which comprise the entire voting strength of the IAOPA shall be necessary for the expulsion of any member organization.

Action to expel a member organization may be initiated by the IAOPA president or any Board member. Expulsion charges and proofs relating thereto shall be submitted to the IAOPA headquarters for reproduction and transmittal to all members of the Board for evaluation before a vote is taken on the issue.

Membership fees paid by a member organization, subsequently expelled from IAOPA, shall be forfeited.

Article XXX -- Adherence to the IAOPA Constitution - All member organizations agree, pursuant to their acceptance as a member of the IAOPA, to uphold and abide by this Constitution and Bylaws.

Article XXXI -- Amendments to the Constitution - Proposals for amendment of this Constitution may be made to the secretariat of IAOPA at any time by a member of the Board, acting upon the recommendation of his member organization. Proposals shall be processed and distributed, within thirty days of receipt thereof, to all accredited members of the Board for action.

Members of the Board shall be permitted six months from the date indicated thereon to approve or disapprove the proposed amendment. Three-fourths (75%) of the total unit voting strength of the IAOPA favoring the proposal shall be necessary in order to effect adoption of the amendment.

Article XXXII -- Dissolution -- Dissolution of the IAOPA may be effected only by a three-quarters (75%) majority vote of the Board. When legally dissolved, the former president shall appoint three trustees to dispose of the assets on hand, the proceeds from which shall be distributed proportionately, based upon unit voting rights, among all accredited member organizations of the IAOPA at the time of dissolution.

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[i] ICAO – Manual on Global Performance of the Air Navigation System, First Edition - 2009
[ii] EuroControl – ATM Performance Strategies for Europe, 27-11-2008