Convention on International Civil Aviation (Chicago Convention), 1944.

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to the Convention on International Civil Aviation

The Safe Transport of Dangerous Goods by Air

More than half of the cargo carried by all modes of transport in the world is dangerous cargo â€“ explosive, corrosive, flammable, toxic and even radioactive. These dangerous goods are essential for a wide variety of global industrial, commercial, medical and research requirements and processes. Because of the advantages of air transport, a great deal of this dangerous cargo is carried by aircraft. ICAO recognizes the importance of this type of cargo and has taken steps to ensure that such cargo can be carried safely. This has been done by adopting Annex 18, together with the associated document Technical Instructions for the Safe Transport of Dangerous Goods by Air. Other codes have existed for regulating the carriage of dangerous goods by air, but these did not apply internationally or were difficult to enforce internationally and, moreover, were not compatible with the corresponding rules of other transport modes.

Annex 18 specifies the broad Standards and Recommended Practices to be followed to enable dangerous goods to be carried safely. The Annex contains fairly stable material requiring only infrequent

amendment using the normal Annex amendment process. The Annex also makes binding upon Contracting States the provisions of the Technical Instructions, which contain the very detailed and numerous instructions necessary for the correct handling of dangerous cargo. These require frequent updating as developments occur in the chemical, manufacturing and packaging industries, and a special procedure has been established by the Council to allow the Technical Instructions to be revised and reissued regularly to keep up with new products and advances in technology.

The ICAO requirements for dangerous goods have been largely developed by a panel of experts which was established in 1976. This panel continues to meet and recommends the necessary revisions to the Technical Instructions. As far as possible the Technical Instructions are kept aligned with the recommendations of the United Nations Committee of Experts on the Transport of Dangerous Goods and with the regulations of the International Atomic Energy Agency. The use of these common bases by all forms of transport allows cargo to be transferred safely and smoothly between air, sea, rail and road modes.

The ICAO requirements for the safe handling of dangerous goods firstly identify a limited list of those substances which are unsafe to carry in any circumstances and then show how other potentially dangerous articles or substances can be transported safely.

The nine hazard classes are those determined by the United Nations Committee of Experts and are used for all modes of transport. Class 1 includes explosives of all kinds, such as sporting ammunition, fireworks and signal flares. Class 2 comprises compressed or liquefied gases which may also be toxic or flammable; examples are cylinders of oxygen and refrigerated liquid nitrogen. Class 3 substances are flammable liquids including gasoline, lacquers, paint thinners, etc. Class 4 covers flammable solids, spontaneously combustible materials and materials which, when in contact with water, exit flammable gases (examples are some powdered metals, cellulose type film and charcoal). Class 5 covers oxidizing material, including bromates, chlorates or nitrates; this class also covers organic peroxides which are both oxygen carriers and very combustible. Poisonous or toxic substances, such as pesticides, mercury compounds, etc., comprise Class 6, together with infectious substances which must sometimes be shipped for diagnostic or preventative purposes. Radioactive materials are in Class 7; these are mainly radioactive isotopes needed for medical or research purposes but are sometimes contained in manufactured articles such as heart pacemakers or smoke detectors. Corrosive substances which may be dangerous to human tissue or which pose a hazard to the structure of an aircraft are dealt with in Class 8 (for example, caustic soda, battery fluid, paint remover). Finally, Class 9 is a miscellaneous category for other materials which are potentially hazardous in air transport, such as magnetized materials which could affect the aircraft s navigational systems.

Annex 18 and the Technical Instructions became effective on 1 January 1983 and applicable on I

January 1984 when all of the Contracting States of ICAO were expected to conform to the ICAO requirements and to give them legislative recognition.

PART I

AIR NAVIGATION

CHAPTER I

GENERAL PRINCIPLES AND APPLICATION OF THE CONVENTION

Article 1 Sovereignty

The contracting States recognize that every State has complete and exclusive sovereignty over the airspace above its territory.

Article 2 Territory

For the purposes of this Convention the territory of a State shall be
deemed to be the land areas and territorial waters adjacent thereto under the sovereignty, suzerainty, protection or mandate of such State.

Article 3 Civil and state aircraft

(a) This Convention shall be applicable only to civil aircraft, and shall not be applicable to state aircraft.
(b) Aircraft used in military, customs and police services shall be deemed to be state aircraft.
(c) No state aircraft of a contracting State shall fly over the territory of another State or land thereon without authorization by special agreement or otherwise, and in accordance with the terms thereof.

(d) The contracting States undertake, when issuing regulations for their state aircraft, that they will have due regard for the safety of navigation of civil aircraft.

Article 4 Misuse of civil aviation

Each contracting State agrees not to use civil aviation for any purpose inconsistent with the aims of this Convention.

CHAPTER II FLIGHT OVER TERRITORY OF CONTRACTING STATES

Article 5 Right of non-scheduled flight

Each contracting State agrees that all aircraft of the other contracting States, being aircraft not engaged in scheduled international air services shall have the right, subject to the observance of the terms of this Convention, to make flights into or in transit non-stop across its territory and to make stops for non-traffic purposes without the necessity of obtaining prior permission, and subject to the right of the State flown over to require landing. Each contracting State nevertheless reserves the right, for reasons of safety of flight, to require aircraft desiring to proceed over regions which are inaccessible or without adequate air navigation facilities to follow prescribed routes, or to obtain special permission for such flights.

Such aircraft, if engaged in the carriage of passengers, cargo, or mail for remuneration or hire on other than scheduled international air services, shall also, subject to the provisions of Article 7, have the privilege of taking on or discharging passengers, cargo, or mail, subject to the right of any State where such embarkation or discharge takes place to impose such regulations, conditions or limitations as it may consider desirable.

Article 6 Scheduled air services

No scheduled international air service may be operated over or into the territory of a contracting State, except with the special permission or other authorization of that State, and in accordance with the terms of such permission or authorization.

Article 7 □ Cabotage

Each contracting State shall have the right to refuse permission to the aircraft of other contracting States to take on in its territory passengers, mail and cargo carried for remuneration or hire and destined for another point within its territory. Each contracting State undertakes not to enter into any arrangements which specifically grant any such privilege on an exclusive basis to any other State or an airline of any other State, and not to obtain any such exclusive privilege from any other State

Article 8 Pilotless aircraft

No aircraft capable of being flown without a pilot shall be flown without a pilot over the territory of a contracting State without special authorization by that State and in accordance with the terms of such authorization. Each contracting State undertakes to insure that the flight of such aircraft without a pilot in regions open to civil aircraft shall be so con-trolled as to obviate danger to civil aircraft.

Article 9 Prohibited areas

(a) Each contracting State may, for reasons of military necessity or public safety, restrict or prohibit uniformly the aircraft of other States from flying over certain areas of its territory, provided that no distinction in this respect is made between the aircraft of the State whose territory is involved, engaged in international scheduled airline services, and the aircraft of the other contracting States likewise engaged. Such prohibited areas shall be of reasonable extent and location so as not to interfere unnecessarily with air navigation. Descriptions of such prohibited areas in the territory of a contracting State, as well as any subsequent alterations therein, shall be communicated as soon as possible to the other contracting States and to the International Civil Aviation Organization

(b) Each contracting State reserves also the right, in exceptional circumstances or during a period of emergency, or in the interest of public safety, and with immediate effect, temporarily to restrict or prohibit flying over the whole or any part of its terri-

tory, on condition that such restriction or prohibition shall be appli- cable without distinction of nationality to aircraft of all other States

(c) Each contracting State, under such regulations as it may prescribe, may require any aircraft entering the areas contemplated in subparagraphs (a) or (b) above to effect a landing as soon as practicable thereafter at some designated airport within its territory.

Article 10 Landing at customs airport

Except in a case where, under the terms of this Convention or a special authorization, aircraft are permitted to cross the territory of a contracting State without landing, every aircraft which enters the territory of a contracting State shall, if the regulations of that State so require, land at an airport designated by that State for the purpose of customs and other examination. On departure from the territory of a contracting State, such aircraft shall depart from a similarly designated customs airport. Particulars of all designated customs airports shall be published by the State and transmitted to the International Civil Aviation Organization established under Part II of this Convention for communication to all other contracting States.

Article 11 – Applicability of air regulations

Subject to the provisions of this Convention, the laws and regulations of a contracting State relating to the admission to or departure from its territory of aircraft engaged in international air navigation, or to the operation and navigation of such aircraft while within its territory, shall be applied to the aircraft of all contracting States without distinction as to nationality, and shall be complied with by such aircraft upon entering or departing from or while within the territory of that State.

Article 12 Rules of the air

Each contracting State undertakes to adopt measures to insure that every aircraft flying over or maneuvering within its territory and that every aircraft carrying its nationality mark, wherever such aircraft may be, shall comply with the rules and regulations relating to the flight and maneuver of aircraft there in force. Each contracting State undertakes to keep its own regulations in these respects

uniform, to the greatest possible extent, with those established from time to time under this Convention. Over the high seas, the rules in force shall be those established under this Convention. Each contracting State undertakes to insure the prosecution of all persons violating the regulations applicable.

Article 13 – Entry and clearance regulations

The laws and regulations of a contracting State as to the admission to or departure from its territory of passengers, crew or cargo of aircraft, such as regulations relating to entry, clearance, immigration, passports, customs, and quarantine shall be complied with by or on behalf of such passengers, crew or cargo upon entrance into or departure from, or while within the territory of that State.

Article 14 Prevention of spread of disease

Each contracting State agrees to take effective measures to prevent the spread by means of air navigation of cholera, typhus (epidemic), smallpox, yellow fever, plague, and such other communicable diseases as the contracting States shall from time to time decide to designate, and to that end contracting States will keep in close consultation with the agencies concerned with international regulations relating to sanitary measures applicable to aircraft. Such consultation shall be without prejudice to the application of any existing international convention on this subject to which the contracting States may be parties.

Article 15 Airport and similar charges

Every airport in a contracting State which is open to public use by its national aircraft shall likewise, subject to the provisions of Article 68, be open under uniform conditions to the aircraft of all the other contracting States. The like uniform conditions shall apply to the use, by aircraft of every contracting State, of all air navigation facilities, including radio and meteorological services, which may be provided for public use for the safety and expedition of air navigation.

Any charges that may be imposed or permitted to be imposed by a contracting State for the use of such airports and air navigation facilities by the aircraft of any other contracting State shall not be higher,

(a) As to aircraft not engaged in scheduled international air services, than those that would be paid by its national aircraft of the same class engaged in similar operations, and

(b) As to aircraft engaged in scheduled international air services, than those that would be paid by its national aircraft engaged in similar international air services.

All such charges shall be published and communicated to the International Civil Aviation Organization:

provided that, upon representation by an interested contracting State, the charges imposed for the use of airports and other facilities shall be subject to review by the Council, which shall report and make recommendations thereon for the consideration of the State or States concerned. No fees, dues or other charges shall be imposed by any contracting State in respect solely of the right of transit over or entry into or exit from its territory of any aircraft of a contracting State or persons or property thereon.

Article 16 Search of aircraft

The appropriate authorities of each of the contracting States shall have the right, without unreasonable delay, to search aircraft of the other contracting States on landing or departure, and to inspect the certificates and other documents prescribed by this Convention.

CHAPTER III NATIONALITY OF AIRCRAFT

Article 17 Nationality of aircraft

Aircraft have the nationality of the State in which they are registered.

Article 18 Dual registration

An aircraft cannot be validly registered in more than one State, but its registration may be changed from one State to another.

Article 19 National laws governing registration

The registration or transfer of registration of aircraft in any
contracting State shall be made in accordance with its law and regulations.

Article 20 Display of marks

Every aircraft engaged in international air navigation shall bear its appropriate nationality and registration marks.

Article 21 Report of registrations

Each contracting State undertakes to supply to any other contracting State or to the International Civil Aviation Organization, on demand, information concerning the registration and ownership of any particular aircraft registered in that State. In addition, each contracting State shall furnish reports to the International Civil Aviation Organization, under such regulations as the latter may prescribe, giving such pertinent data as can be made available concerning the ownership and control of aircraft registered in that State and habitually engaged in international air navigation. The data thus obtained by the International Civil Aviation Organization shall be made available by it on request to the other contracting States.

CHAPTER IV MEASURES TO FACILITATE AIR NAVIGATION

Article 22 – Facilitation of formalities

Each contracting State agrees to adopt all practicable measures, through the issuance of special regulations or otherwise, to facilitate and expedite navigation by aircraft between the territories of contracting States, and to prevent unnecessary delays to aircraft, crews, passengers and cargo, especially in the administration of the laws relating to immigration, quarantine, customs and clearance.

Article 23 Customs and immigration procedures

Each contracting State undertakes, so far as it may find practicable, to establish customs and immigration procedures affecting international air navigation in accordance with the practices which may be established or recommended from time to time, pursuant to this Convention. Nothing in this Convention shall be construed as preventing the establishment of customs-free airports.

Article 24 Customs duty

(a) Aircraft on a flight to, from, or across the territory of another contracting State shall be admitted temporarily free of duty, subject to the customs regulations of the State. Fuel, lubricating oils, spare parts, regular equipment and aircraft stores on board an aircraft of a contracting State, on arrival in the territory of another contracting State and retained on board on leaving the territory of that State shall be exempt from customs duty, inspection fees or similar national or local duties and charges. This exemption shall not apply to any quantities or articles unloaded, except in accordance with the customs regulations of the State, which may require that they shall be kept under customs supervision
(b) Spare parts and equipment imported into the territory of a contracting State for incorporation in or use on an aircraft of another contracting State engaged in international air navigation shall be admitted free of customs duty, subject to compliance with the regulations of the State concerned, which may provide that the articles shall be kept under customs supervision and control.

Article 25 Aircraft in distress

Each contracting State undertakes to provide such measures of assistance to aircraft in distress in its territory as it may find practicable, and to permit, subject to control by its own authorities, the owners of the aircraft or authorities of the State in which the aircraft is registered to provide such measures of assistance as may be necessitated by the circumstances. Each contracting State, when undertaking search for missing aircraft, will collaborate in coordinated measures which may be recommended from time to time pursuant to this Convention.

Article 26 Investigation of accidents

In the event of an accident to an aircraft of a contracting State occurring in the territory of another contracting State, and involving death or serious injury, or indicating serious technical defect in the aircraft or air navigation facilities, the State in which the accident occurs will institute an inquiry into the

circumstances of the accident, in accordance, so far as its laws permit, with the procedure which may be recommended by the International Civil Aviation Organization. The State in which the aircraft is registered shall be given the opportunity to appoint observers to be present at the inquiry and the State holding the inquiry shall communicate the report and findings in the matter to that State.

Article 27 – Exemption from seizure on patent claims

(a) While engaged in international air navigation, any authorized entry of aircraft of a contracting State into the territory of another contracting State or authorized transit across the territory of such State with or without landings shall not entail any seizure or detention of the aircraft or any claim against the owner or operator thereof or any other interference therewith by or on behalf of such State or any person therein, on the ground that the construction, mechanism, parts, accessories or operation of the aircraft is an infringement of any patent, design, or model duly granted or registered in the State whose territory is entered by the aircraft, it being agreed that no deposit of security in connection with the foregoing exemption from seizure or detention of the aircraft shall in any case be required in the State entered by such aircraft.
(b) The provisions of paragraph (a) of this Article shall also be applicable to the storage of spare parts and spare equipment for the aircraft and the right to use and install the same in the repair of an aircraft of a contracting State in the territory of any other contracting State, provided that any patented part or equipment so stored shall not be sold or distributed internally in or exported commercially from the contracting State entered by the aircraft.
(c) The benefits of this Article shall apply only to such States, parties to this Convention, as either (1) are parties to the International Convention for the Protection of Industrial Property and to any amendments thereof; or (2) have enacted patent laws which recognize and give adequate protection to inventions made by the nationals of the other States parties to this Convention.

Article 28 Air navigation facilities and standard systems

Each contracting State undertakes, so far as it may find practicable, to:
(a) Provide, in its territory, airports, radio services, meteorological services and other air navigation facilities to facilitate international air navigation, in accordance with the standards and practices recommended or established from time to time, pursuant to this Convention;
(b) Adopt and put into operation the appropriate standard systems of communications procedure, codes, markings, signals, lighting and other operational practices and rules which may be recommended or

established from time to time, pursuant to this Convention;
(c) Collaborate in international measures to secure the publication of aeronautical maps and charts in accordance with standards which may be recommended or established from time to time, pursuant to this Convention.

CHAPTER V CONDITIONS TO BE FULFILLED WITH RESPECT TO AIRCRAFT

Article 29 Documents carried in aircraft

Every aircraft of a contracting State, engaged in international navigation, shall carry the following documents in conformity with the conditions prescribed in this Convention:
(a) Its certificate of registration;
(b) Its certificate of airworthiness;
(c) The appropriate licenses for each member of the crew;
(d) Its journey log book;
(e) If it is equipped with radio apparatus, the aircraft radio station license;
(f) If it carries passengers, a list of their names and places of embarkation and destination;
(g) If it carries cargo, a manifest and detailed declarations of the cargo.

Article 30 Aircraft radio equipment

(a) Aircraft of each contracting State may, in or over the territory of other contracting States, carry radio transmitting apparatus only if a license to install and operate such apparatus has been issued by the appropriate authorities of the State in which the aircraft is registered. The use of radio transmitting apparatus in the territory of the contracting State whose territory is flown over shall be in accordance with the regulations prescribed by that State
(b) Radio transmitting apparatus may be used only by members of the flight crew who are provided with a special license for the purpose, issued by the appropriate authorities of the State in which the aircraft is registered.

Article 31 Certificates of airworthiness

Every aircraft engaged in international navigation shall be provided with a certificate of airworthiness issued or rendered valid by the State in which it is registered.

Article 32 – Licenses of personnel

(a) The pilot of every aircraft and the other members of the operating crew of every aircraft engaged in international navigation shall be provided with certificates of competency and licenses issued or rendered valid by the State in which the aircraft is registered

(b) Each contracting State reserves the right to refuse to recognize, for the purpose of flight above its own territory, certificates of competency and licenses granted to any of its nationals by another contracting State.

Article 33 – Recognition of certificates and licenses

Certificates of airworthiness and certificates of competency and licenses issued or rendered valid by the contracting State in which the aircraft is registered, shall be recognized as valid by the other contracting States, provided that the requirements under which such certificates or licenses were issued or rendered valid are equal to or above the minimum standards which may be established from time to time pursuant to this Convention.

Article 34 Journey log books

There shall be maintained in respect of every aircraft engaged in international navigation a journey log book in which shall be entered particulars of the aircraft, its crew and of each journey, in such form as may be prescribed from time to time pursuant to this Convention.

Article 35 Cargo restrictions

(a) No munitions of war or implements of war may be carried in or above the territory of a State in aircraft engaged in international navigation, except by permission of such State. Each State shall determine by regulations what constitutes munitions of war or implements of war for the purposes of this Article, giving due

consideration, for the purposes of uniformity, to such
recommendations as the International Civil Aviation Organization may from time to time make
(b) Each contracting State reserves the right, for reasons
of public order and safety, to regulate or prohibit the carriage in or
above its territory of articles other than those enumerated in
paragraph (a): provided that no distinction is made in this respect
between its national aircraft engaged in international navigation and
the aircraft of the other States so engaged; and provided further that
no restriction shall be imposed which may interfere with the
carriage and use on aircraft of apparatus necessary for the
operation or navigation of the aircraft or the safety of the personnel
or passengers.

Article 36 Photographic apparatus

Each contracting State may prohibit or regulate the use of photographic apparatus in aircraft over its territory.

CHAPTER VI INTERNATIONAL STANDARDS AND RECOMMENDED PRACTICES

Article 37 Adoption of international standards and procedures

Each contracting State undertakes to collaborate in securing the highest practicable degree of uniformity in regulations, standards, procedures, and organization in relation to aircraft, personnel, airways and auxiliary services in all matters in which such uniformity will facilitate and improve air navigation.
To this end the International Civil Aviation Organization shall adopt and amend from time to time, as may be necessary, international standards and recommended practices and procedures dealing with:
(a) Communications systems and air navigation aids, including ground marking;
(b) Characteristics of airports and landing areas;
(c) Rules of the air and air traffic control practices;
(d) Licensing of operating and mechanical personnel;

(e) Airworthiness of aircraft;
(f) Registration and identification of aircraft;
(g) Collection and exchange of meteorological information;
(h) Log books;
(i) Aeronautical maps and charts;
(j) Customs and immigration procedures;
(k) Aircraft in distress and investigation of accidents;
and such other matters concerned with the safety, regularity, and efficiency of air navigation as may from time to time appear appropriate.

Article 38 Departures from international standards and procedures

Any State which finds it impracticable to comply in all respects with any such international standard or procedure, or to bring its own regulations or practices into full accord with any international standard or procedure after amendment of the latter, or which deems it necessary to adopt regulations or practices differing in any particular respect from those established by an international standard, shall give immediate notification to the International Civil Aviation Organization of the differences between its own practice and that established by the international standard. In the case of amendments to international standards, any State which does not make the appropriate amendments to its own regulations or practices shall give notice to the Council within sixty days of the adoption of the amendment to the international standard, or indicate the action which it proposes to take. In any such case, the Council shall make immediate notification to all other states of the difference which exists between one or more features of an international standard and the corresponding national practice of that State.

Article 39 Endorsement of certificates and licenses

(a) Any aircraft or part thereof with respect to which there
exists an international standard of airworthiness or performance, and which failed in any respect to satisfy that standard at the time of its certification, shall have endorsed on or attached to its airworthiness certificate a complete enumeration of the details in respect of which it so failed
(b) Any person holding a license who does not satisfy in
full the conditions laid down in the international standard relating
to the class of license or certificate which he holds shall have

endorsed on or attached to his license a complete enumeration of
the particulars in which he does not satisfy such conditions

Article 40 Validity of endorsed certificates and licenses

No aircraft or personnel having certificates or licenses so endorsed
shall participate in international navigation, except with the permission of the State or States whose territory is entered. The registration or use of any such aircraft, or of any certificated aircraft part, in any State other than that in which it was originally certificated shall be at the discretion of the State into which the aircraft or part is imported.

Article 41 Recognition of existing standards of airworthiness

The provisions of this Chapter shall not apply to aircraft and aircraft equipment of types of which the prototype is submitted to the appropriate national authorities for certification prior to a date three years after the date of adoption of an international standard of airworthiness for such equipment.

Article 42 Recognition of existing standards of competency of personnel

The provisions of this Chapter shall not apply to personnel whose
licences are originally issued prior to a date one year after initial adoption of an international standard of qualification for such personnel; but they shall in any case apply to all personnel whose licenses remain valid five years after the date of adoption of such standard.

PART II THE INTERNATIONAL CIVIL AVIATION ORGANIZATION

CHAPTER VII THE ORGANIZATION

Article 43 Name and composition

An organization to be named the International Civil Aviation Organization is formed by the Convention. It is made up of an Assembly, a Council, and such other bodies as may be necessary.

Article 44 Objectives

The aims and objectives of the Organization are to develop the principles and techniques of international air navigation and to foster the planning and development of international air transport so as to:
(a) Insure the safe and orderly growth of international civil aviation throughout the world;
(b) Encourage the arts of aircraft design and operation for peaceful purposes;
(c) Encourage the development of airways, airports, and air navigation facilities for international civil aviation;
(d) Meet the needs of the peoples of the world for safe, regular, efficient and economical air transport;
(e) Prevent economic waste caused by unreasonable competition;
(f) Insure that the rights of contracting States are fully respected and that every contracting State has a fair opportunity to operate international airlines;
(g) Avoid discrimination between contracting States;
(h) Promote safety of flight in international air navigation;
(i) Promote generally the development of all aspects of international civil aeronautics.

Article 45 Permanent seat

The permanent seat of the Organization shall be at such place as shall be determined at the final meeting of the Interim Assembly of the Provisional International Civil Aviation Organization set up by the Interim Agreement on International Civil Aviation signed at Chicago on December 7, 1944. The seat may be temporarily transferred elsewhere by decision of the Council, and otherwise than temporarily by decision of the Assembly, such decision to be taken by the number of votes specified by the Assembly.The number of votes so specified will not be less than three-fifths of the total number of contracting States.

Article 46 First meeting of Assembly

The first meeting of the Assembly shall be summoned by the
Interim Council of the above-mentioned Provisional Organization as soon as the Convention has come into force, to meet at a time and place to be decided by the Interim Council.

Article 47 Legal capacity

The Organization shall enjoy in the territory of each contracting

State such legal capacity as may be necessary for the performance of its functions. Full juridical personality shall be granted wherever compatible with the constitution and laws of the State concerned.

CHAPTER VIII THE ASSEMBLY

Article 48 Meetings of the Assembly and voting

(a) The Assembly shall meet not less than once in three years and shall be convened by the Council at a suitable time and place. An extraordinary meeting of the Assembly may be held at any time upon the call of the Council or at the request of not less than one-fifth of the total number of contracting States addressed to the Secretary General.
(b) All contracting States shall have an equal right to be represented at the meetings of the Assembly and each contracting State shall be entitled to one vote. Delegates representing contract- ing States may be assisted by technical advisers who may partici- pate in the meetings but shall have no vote.
(c) A majority of the contracting States is required to constitute a quorum for the meetings of the Assembly. Unless otherwise provided in this Convention, decisions of the Assembly shall be taken by a majority of the votes cast.

Article 49 Powers and duties of the Assembly

The powers and duties of the Assembly shall be to:
(a) Elect at each meeting its President and other officers;
(b) Elect the contracting States to be represented on the Council, in accordance with the provisions of Chapter IX;
(c) Examine and take appropriate action on the reports of the Council and decide on any matter referred to it by the Council;
(d) Determine its own rules of procedure and establish such subsidiary commissions as it may consider to be necessary or desirable;
(e) Vote annual budgets and determine the financial arrangements of the Organization, in accordance with the provisions of Chapter XII;
(f) Review expenditures and approve the accounts of the Organization;
(g) Refer, at its discretion, to the Council, to subsidiary commissions, or to any other body any matter within its sphere of action;

(h) Delegate to the Council the powers and authority necessary or desirable for the discharge of the duties of the Organization and revoke or modify the delegations of authority at any time;
(i) Carry out the appropriate provisions of Chapter XIII;
(j) Consider proposals for the modification or amendment of the provisions of this Convention and, if it approves of the proposals, recommend them to the contracting States in accordance with the provisions of Chapter XXI;
(k) Deal with any matter within the sphere of action of the Organization not specifically assigned to the Council.

CHAPTER IX THE COUNCIL

Article 50 Composition and election of Council

(a) The Council shall be a permanent body responsible to the Assembly. It shall be composed of thirty-three contracting States elected by the Assembly. An election shall be held at the first meeting of the Assembly and thereafter every three years, and the members of the Council so elected shall hold office until the next following election.
(b) In electing the members of the Council, the Assembly shall give adequate representation to (1) the States of chief importance in air transport; (2) the States not otherwise included which make the largest contribution to the provision of facilities for international civil air navigation; and (3) the States not otherwise included whose designation will insure that all the major geographic areas of the world are represented on the Council. Any vacancy on the Council shall be filled by the Assembly as soon as possible; any contracting State so elected to the Council shall hold office for the unexpired portion of its predecessor s term of office.
(c) No representative of a contracting State on the Council shall be actively associated with the operation of an international air service or financially interested in such a service.

Article 51 President of Council

The Council shall elect its President for a term of three years. He may be reelected. He shall have no vote. The Council shall elect from among its members one or more Vice Presidents who shall retain their right to vote when serving as acting President. The President need not be selected from among the representatives of the members of the Council but, if a representative is elected, his seat shall be deemed

vacant and it shall be filled by the State which he represented. The duties of the President shall be to:
(a) Convene meetings of the Council, the Air Transport Committee, and the Air Navigation Commission;
(b) Serve as representative of the Council; and
(c) Carry out on behalf of the Council the functions which the Council assigns to him.

Article 52 Voting in Council

Decisions by the Council shall require approval by a majority of its members. The Council may delegate authority with respect to any particular matter to a committee of its members. Decisions of any committee of the Council may be appealed to the Council by any interested contracting State

Article 53 Participation without a vote

Any contracting State may participate, without a vote, in the consideration by the Council and by its committees and commissions of any question which especially affects its interests. No member of the Council shall vote in the consideration by the Council of a dispute to which it is a party

Article 54 Mandatory functions of Council

The Council shall:
(a) Submit annual reports to the Assembly;
(b) Carry out the directions of the Assembly and discharge the duties and obligations which are laid on it by this Convention;
(c) Determine its organization and rules of procedure;
(d) Appoint and define the duties of an Air Transport Committee, which shall be chosen from among the representatives of the members of the Council, and which shall be responsible to it;
(e) Establish an Air Navigation Commission, in accordance with the provisions of Chapter X;
(f) Administer the finances of the Organization in accordance with the provisions of Chapters XII and XV;
(g) Determine the emoluments of the President of the Council;

(h) Appoint a chief executive officer who shall be called the Secretary General, and make provision for the appointment of such other personnel as may be necessary, in accordance with the provisions of Chapter XI;
(i) Request, collect, examine and publish information relating to the advancement of air navigation and the operation of international air services, including information about the costs of operation and particulars of subsidies paid to airlines from public funds;
(j) Report to contracting States any infraction of this Convention, as well as any failure to carry out recommendations or determinations of the Council;
(k) Report to the Assembly any infraction of this Convention where a contracting State has failed to take appropriate action within a reasonable time after notice of the infraction;
(l) Adopt, in accordance with the provisions of Chapter VI of this Convention, international standards and recommended practices; for convenience, designate them as Annexes to this Convention; and notify all contracting States of the action taken;
(m) Consider recommendations of the Air Navigation Commission for amendment of the Annexes and take action in accordance with the provisions of Chapter XX;
(n) Consider any matter relating to the Convention which any contracting State refers to it.

Article 55 Permissive functions of Council

The Council may:
(a) Where appropriate and as experience may show to be desirable, create subordinate air transport commissions on a regional or other basis and define groups of states or airlines with or through which it may deal to facilitate the carrying out of the aims of this Convention;
(b) Delegate to the Air Navigation Commission duties additional to those set forth in the Convention and revoke or modify such delegations of authority at any time;
(c) Conduct research into all aspects of air transport and air navigation which are of international importance, communicate the results of its research to the contracting States, and facilitate the exchange of information between contracting States on air transport and air navigation matters;
(d) Study any matters affecting the organization and operation of international air transport, including the international ownership and operation of international air services on trunk routes, and submit to the Assembly plans in relation thereto;
(e) Investigate, at the request of any contracting State, any situation which may appear to present avoidable obstacles to the development of international air navigation; and, after such investigation, issue such reports as may appear to it desirable.

CHAPTER X THE AIR NAVIGATION COMMISSION

Article 56 Nomination and appointment of Commission

The Air Navigation Commission shall be composed of fifteen members appointed by the Council from among persons nominated by contracting States. These persons shall have suitable qualifications and experience in the science and practice of aeronautics. The Council shall request all contracting States to submit nominations. The President of the Air Navigation Commis- sion shall be appointed by the Council.

Article 57 Duties of Commission

The Air Navigation Commission shall:

(a) Consider, and recommend to the Council for adoption, modifications of the Annexes to this Convention;

(b) Establish technical subcommissions on which any contracting State may be represented, if it so desires;

(c) Advise the Council concerning the collection and communication to the contracting States of all information which it considers necessary and useful for the advancement of air navigation.

CHAPTER XI PERSONNEL

Article 58 Appointment of personnel

Subject to any rules laid down by the Assembly and to the provisions of this Convention, the Council shall determine the method of appointment and of termination of appointment, the training, and the salaries, allowances, and conditions of service of the Secretary General and other personnel of the Organization, and may employ or make use of the services of nationals of any contracting State.

Article 59 International character of personnel

The President of the Council, the Secretary General, and other personnel shall not seek or receive instructions in regard to the discharge of their responsibilities from any authority external to the Organization. Each contracting State undertakes fully to respect the international character of the responsibilities of the personnel and not to seek to influence any of its nationals in the discharge of their responsibilities.

Article 60 Immunities and privileges of personnel

Each contracting State undertakes, so far as possible under its constitutional procedure, to accord to the President of the Council, the Secretary General, and the other personnel of the Organization, the immunities and privileges which are accorded to corresponding personnel of other public international organizations. If a general international agreement on the immunities and privileges of international civil servants is arrived at, the immunities and privileges accorded to the President, the Secretary General, and the other personnel of the Organization shall be the immunities and privileges accorded under that general international agreement.

CHAPTER XII FINANCE

Article 61 Budget and apportionment of expenses

The Council shall submit to the Assembly annual budgets, annual statements of accounts and estimates of all receipts and expenditures. The Assembly shall vote the budgets with whatever modification it sees fit to prescribe, and, with the exception of assessments under Chapter XV to States consenting thereto, shall apportion the expenses of the Organization among the contracting States on the basis which it shall from time to time determine.

Article 62 Suspension of voting power

The Assembly may suspend the voting power in the Assembly and in the Council of any contracting State that fails to discharge within a reasonable period its financial obligations to the Organization.

Article 63 Expenses of delegations and other representatives

Each contracting State shall bear the expenses of its own delegation to the Assembly and the remuneration, travel, and other expenses of any person whom it appoints to serve on the Council, and of its nominees or representatives on any subsidiary committees or commissions of the Organization.

CHAPTER XIII OTHER INTERNATIONAL ARRANGEMENTS

Article 64 Security arrangements

The Organization may, with respect to air matters within its competence directly affecting world security, by vote of the Assembly enter into appropriate arrangements with any general organization set up by the nations of the world to preserve peace.

Article 65 Arrangements with other international bodies

The Council, on behalf of the Organization, may enter into agreements with other international bodies for the maintenance of common services and for common arrangements concerning personnel and, with the approval of the Assembly, may enter into such other arrangements as may facilitate the work of the Organization.

Article 66 – Functions relating to other agreements

(a) The Organization shall also carry out the functions placed upon it by the International Air Services Transit Agreement and by the International Air Transport Agreement drawn up at Chicago on December 7, 1944, in accordance with the terms and conditions therein set forth

(b) Members of the Assembly and the Council who have not accepted the International Air Services Transit Agreement or the International Air Transport Agreement drawn up at Chicago on December 7, 1944 shall not have the

right to vote on any questions referred to the Assembly or Council under the provisions of the relevant Agreement.

PART III INTERNATIONAL AIR TRANSPORT

CHAPTER XIV INFORMATION AND REPORTS

Article 67 File reports with Council

Each contracting State undertakes that its international airlines shall, in accordance with requirements laid down by the Council, file with the Council traffic reports, cost statistics and financial statements showing among other things all receipts and the sources thereof.

CHAPTER XV AIRPORTS AND OTHER AIR NAVIGATION FACILITIES

Article 68 Designation of routes and airports

Each contracting State may, subject to the provisions of this Convention, designate the route to be followed within its territory by any international air service and the airports which any such service may use.

Article 69 Improvement of air navigation facilities

If the Council is of the opinion that the airports or other air navigation facilities, including radio and meteorological services, of a contracting State are not reasonably adequate for the safe, regular, efficient, and economical operation of international air services, present or contemplated, the Council shall consult with the State directly concerned, and other States affected, with a view to finding means by which the situation may be remedied, and may make recommendations for that purpose. No contracting State shall be guilty of an infraction of this Convention if it fails to carry out these recommendations.

Article 70 Financing of air navigation facilities

A contracting State, in the circumstances arising under the provisions of Article 69, may conclude an arrangement with the Council for giving effect to such recommendations. The State may elect to bear all of the costs involved in any such arrangement. If the State does not so elect, the Council may agree, at the request of the State, to provide for all or a portion of the costs.

Article 71 Provision and maintenance of facilities by Council

If a contracting State so requests, the Council may agree to provide, man, maintain, and administer any or all of the airports and other air navigation facilities including radio and meteorological services, required in its territory for the safe, regular, efficient and economical operation of the international air services of the other contracting States, and may specify just and reasonable charges for the use of the facilities provided.

Article 72 — Acquisition or use of land

Where land is needed for facilities financed in whole or in part by the Council at the request of a contracting State, that State shall either provide the land itself, retaining title if it wishes, or facilitate the use of the land by the Council on just and reasonable terms and in accordance with the laws of the State concerned.

Article 73 Expenditure and assessment of funds

Within the limit of the funds which may be made available to it by the Assembly under Chapter XII, the Council may make current expenditures for the purposes of this Chapter from the general funds of the Organization. The Council shall assess the capital funds required for the purposes of this Chapter in previously agreed proportions over a reasonable period of time to the contracting States consenting thereto whose airlines use the facilities. The Council may also assess to States that consent any working funds that are required.

Article 74 Technical assistance and utilization of revenues

When the Council, at the request of a contracting State, advances funds or provides airports or other facilities in whole or in part, the arrangement may provide, with the consent of that State, for technical assistance in the supervision and operation of the airports and other facilities, and for the payment, from the revenues derived from the operation of the airports and other facilities, of the operating expenses of the airports and the other facilities, and of interest and amortization charges.

Article 75 Taking over of facilities from Council

A contracting State may at any time discharge any obligation into which it has entered under Article 70, and take over airports and other facilities which the Council has provided in its territory pursuant to the provisions of Articles 71 and 72, by paying to the Council an amount which in the opinion of the Council is reasonable in the circumstances. If the State considers that the amount fixed by the Council is unreasonable it may appeal to the Assembly against the decision of the Council and the Assembly may confirm or amend the decision of the Council.

Article 76 Return of funds

Funds obtained by the Council through reimbursement under Article 75 and from receipts of interest and amortization payments under Article 74 shall, in the case of advances originally financed by States under Article 73, be returned to the States which were originally assessed in the proportion of their assessments, as determined by the Council.

CHAPTER XVI JOINT OPERATING ORGANIZATIONS AND POOLED SERVICES

Article 77 Joint operating organizations permitted

Nothing in this Convention shall prevent two or more contracting States from constituting joint air transport operating organizations or international operating agencies and from pooling their air services on any routes or in any regions, but such organizations or agencies and such pooled services shall be subject to all the provisions of this Convention, including those relating to the registration of agreements with the Council. The Council shall determine in what manner the provisions of this Convention relating

to nationality of aircraft shall apply to aircraft operated by international operating agencies.

Article 78 Function of Council

The Council may suggest to contracting States concerned that they form joint organizations to operate air services on any routes or in any regions.

Article 79 Participation in operating organizations

A State may participate in joint operating organizations or in pooling arrangements, either through its government or through an airline company or companies designated by its government. The companies may, at the sole discretion of the State concerned, be stateowned or partly stateowned or privately owned.

PART IV FINAL PROVISIONS

CHAPTER XVII OTHER AERONAUTICAL AGREEMENTS AND ARRANGEMENTS

Article 80 Paris and Habana Conventions

Each contracting State undertakes, immediately upon the coming into force of this Convention, to give notice of denunciation of the Convention relating to the Regulation of Aerial Navigation signed at Paris on October 13, 1919 or the Convention on Commercial Aviation signed at Habana on February 20, 1928, if it is a party to either. As between contracting States, this Convention supersedes the Conventions of Paris and Habana previously referred to.

Article 81 Registration of existing agreements

All aeronautical agreements which are in existence on the coming into force of this Convention, and which are between a contracting State and any other State or between an airline of a contracting State and any other State or the airline of any other State, shall be forthwith registered with the Council.

Article 82 Abrogation of inconsistent arrangements

The contracting States accept this Convention as abrogating all obligations and understandings between them which are inconsistent with its terms, and undertake not to enter into any such obligations and understandings. A contracting State which, before becoming a member of the Organization has undertaken any obligations toward a non-contracting State or a national of a contracting State or of a non-contracting State inconsistent with the terms of this Convention, shall take immediate steps to procure its release from the obligations. If an airline of any contracting State has entered into any such inconsistent obligations, the State of which it is a national shall use its best efforts to secure their termination forthwith and shall in any event cause them to be terminated as soon as such action can lawfully be taken after the coming into force of this Convention.

Article 83 Registration of new arrangements

Subject to the provisions of the preceding Article, any contracting State may make arrangements not inconsistent with the provisions of this Convention. Any such arrangement shall be forthwith registered with the Council, which shall make it public as soon as possible.

CHAPTER XVIII DISPUTES AND DEFAULT

Article 84 Settlement of disputes

If any disagreement between two or more contracting States relating to the interpretation or application of this Convention and its Annexes cannot be settled by negotiation, it shall, on the application of any State concerned in the disagreement, be decided by the Council. No member of the Council shall vote in the consideration by the Council of any dispute to which it is a party. Any contracting State may, subject to Article 85, appeal from the decision of the Council to an ad hoc arbitral tribunal agreed upon with the other parties to the dispute or to the Permanent Court of International Justice. Any such appeal shall be notified to the Council within sixty days of receipt of notification of the decision of the Council.

Article 85 Arbitration procedure

If any contracting State party to a dispute in which the decision of the Council is under appeal has not accepted the Statute of the Permanent Court of International Justice and the contracting States parties to the dispute cannot agree on the choice of the arbitral tribunal, each of the contracting States parties to the dispute shall name a single arbitrator who shall name an umpire. If either contracting State party to the dispute fails to name an arbitrator within a period of three months from the date of the appeal, an arbitrator shall be named on behalf of that State by the President of the Council from a list of qualified and available persons maintained by the Council. If, within thirty days, the arbitrators cannot agree on an umpire, the President of the Council shall designate an umpire from the list previously referred to. The arbitrators and the umpire shall then jointly constitute an arbitral tribunal. Any arbitral tribunal established under this or the preceding Article shall settle its own procedure and give its decisions by majority vote, provided that the Council may determine procedural questions in the event of any delay which in the opinion of the Council is excessive.

Article 86 Appeals

Unless the Council decides otherwise any decision by the Council on whether an international airline is operating in conformity with the provisions of this Convention shall remain in effect unless reversed on appeal. On any other matter, decisions of the Council shall, if appealed from, be suspended until the appeal is decided. The decisions of the Permanent Court of International Justice and of an arbitral tribunal shall be final and binding.

Article 87 Penalty for non-conformity of airline

Each contracting State undertakes not to allow the operation of an airline of a contracting State through the airspace above its territory if the Council has decided that the airline concerned is not conforming to a final decision rendered in accordance with the previous Article.

Article 88 Penalty for non-conformity by State

The Assembly shall suspend the voting power in the Assembly and in the Council of any contracting State that is found in default under the provisions of this Chapter.

CHAPTER XIX WAR

Article 89 War and emergency conditions

In case of war, the provisions of this Convention shall not affect the freedom of action of any of the contracting States affected, whether as belligerents or as neutrals. The same principle shall apply in the case of any contracting State which declares a state of national emergency and notifies the fact to the Council.

CHAPTER XX ANNEXES

Article 90 Adoption and amendment of Annexes

(a) The adoption by the Council of the Annexes described in Article 54, subparagraph (l), shall require the vote of two-thirds of the Council at a meeting called for that purpose and shall then be submitted by the Council to each contracting State. Any such Annex or any amendment of an Annex shall become effective within three months after its submission to the contracting States or at the end of such longer period of time as the Council may prescribe, unless in the meantime a majority of the contracting States register their disapproval with the Council.
(b) The Council shall immediately notify all contracting States of the coming into force of any Annex or amendment thereto.

CHAPTER XXI RATIFICATIONS, ADHERENCES, AMENDMENTS, AND DENUNCIATIONS

Article 91 Ratification of Convention

(a) This Convention shall be subject to ratification by the signatory States. The instruments of ratification shall be deposited in the archives of the Government of the United States of America, which shall give notice of the date of the deposit to each of the signatory and adhering States.
(b) As soon as this Convention has been ratified or adhered to by twenty-six States it shall come into force between them on the thirtieth day after deposit of the twenty-sixth instrument. It shall come into

force for each State ratifying thereafter on the thirtieth day after the deposit of its instrument of ratification.
(c) It shall be the duty of the Government of the United States of America to notify the government of each of the signatory and adhering States of the date on which this Convention comes into force.

Article 92 Adherence to Convention

(a) This Convention shall be open for adherence by members of the United Nations and States associated with them, and States which remained neutral during the present world conflict.
(b) Adherence shall be effected by a notification addressed to the Government of the United States of America and shall take effect as from the thirtieth day from the receipt of the notification by the Government of the United States of America, which shall notify all the contracting States.

Article 93 Admission of other States

States other than those provided for in Articles 91 and 92 (a) may, subject to approval by any general international organization set up by the nations of the world to preserve peace, be admitted to participation in this Convention by means of a four-fifths vote of the Assembly and on such conditions as the Assembly may prescribe: provided that in each case the assent of any State invaded or attacked during the present war by the State seeking admission shall be necessary.

Article 93 bis

(a) Notwithstanding the provisions of Articles 91, 92 and 93 above:
(1) A State whose government the General Assembly of the United Nations has recommended be debarred from membership in international agencies established by or brought into relationship with the United Nations shall automatically cease to be a member of the International Civil Aviation Organization;
(2) A State which has been expelled from membership in the United Nations shall automatically cease to be a member of the International Civil Aviation Organization unless the General Assembly of the United Nations attaches to its act of expulsion a recommendation to the contrary.
(b) A State which ceases to be a member of the International Civil Aviation Organization as a result of the provisions of paragraph (a) above may, after approval by the General Assembly of the United Nations, be readmitted to the International Civil Aviation Organization upon application and upon

approval by a majority of the Council.
(c) Members of the Organization which are suspended from the exercise of the rights and privileges of membership in the United Nations shall, upon the request of the latter, be suspended from the rights and privileges of membership in this Organization.

Article 94 Amendment of Convention

(a) Any proposed amendment to this Convention must be approved by a two-thirds vote of the Assembly and shall then come into force in respect of States which have ratified such amendment when ratified by the number of contracting States specified by the Assembly. The number so specified shall not be less than two-thirds of the total number of contracting States.
(b) If in its opinion the amendment is of such a nature as to justify this course, the Assembly in its resolution recommending adoption may provide that any State which has not ratified within a specified period after the amendment has come into force shall thereupon cease to be a member of the Organization and a party to the Convention.

Article 95 Denunciation of Convention

(a) Any contracting State may give notice of denunciation of this Convention three years after its coming into effect by notification addressed to the Government of the United States of America, which shall at once inform each of the contracting States.
(b) Denunciation shall take effect one year from the date of the receipt of the notification and shall operate only as regards the State effecting the denunciation.

CHAPTER XXII DEFINITIONS

Article 96 For the purpose of this Convention the expression:

(a) "Air service" means any scheduled air service performed by aircraft for the public transport of passengers, mail or cargo.
(b) "International air service" means an air service which passes through the air space over the territory of more than one State.
(c) "Airline" means any air transport enterprise offering or operating an international air service.

(d) "Stop for non-traffic purposes" means a landing for any purpose other than taking on or discharging passengers, cargo or mail.

SIGNATURE OF CONVENTION

IN WITNESS WHEREOF, the undersigned plenipotentiaries, having been duly authorized, sign this Convention on behalf of their respective governments on the dates appearing opposite their signatures.

DONE at Chicago the seventh day of December 1944, in the English language. A text drawn up in the English, French, Spanish languages, each of which shall be of equal authenticity, shall be open for signature at Washington D.C. Both texts shall be deposited in the archives of the Government of the United States of America, the certified copies shall be transmitted by that Government to the governments of all the States which may sign or adhere to this Convention.

ANNEX 1

to the Convention on International Civil Aviation

Personnel Licensing

As long as air travel cannot do without pilots and other air and ground personnel, their competence, skills and training will remain the essential guarantee for efficient and safe operations. Adequate personnel training and licensing also instill confidence between States, leading to international recognition and acceptance of personnel qualifications and licences and greater trust in aviation on the part of the traveller.

Standards and Recommended Practices for the licensing of flight crew members (pilots, flight engineers and flight navigators), air traffic controllers, aeronautical station operators, maintenance technicians and flight dispatchers , are provided by Annex 1 to the Convention on International Civil Aviation. Related training manuals provide guidance to States for the scope and depth of training curricula which will ensure that the confidence in safe air navigation, as intended by the Convention and Annex 1, is maintained. These training manuals also provide guidance for the training of other aviation personnel such as aerodrome emergency crews, flight operations officers, radio operators and individuals involved in other related disciplines.

Today s aircraft operations are so diverse and complex that protection must be provided against the possibility, however remote, of total system breakdown due to either human error or failure of a system component.

The human being is the vital link in the chain of aircraft operations but is also by nature the most flexible and variable. Proper training is necessary so as to minimize human error and provide able,

skilful, proficient and competent personnel. Annex 1 and ICAO training manuals describe the skills necessary to build proficiency at various jobs, thereby contributing to occupational competency. The medical standards of the Annex, in requiring periodic health examinations, serve as an early warning for possible incapacitating medical conditions and contribute to the general health of flight crews and controllers.

The Human Factors programme addresses known human capabilities and limitations, providing States with basic information on this vital subject as well as the material necessary to design proper training programmes. ICAO s objective is to improve safety in aviation by making States more aware of, and responsive to, the importance of human factors in civil aviation operations.

Licensing is the act of authorizing defined activities which should otherwise be prohibited due to the potentially serious results of such activities being performed improperly. An applicant for a licence must meet certain stated requirements proportional to the complexities of the task to be performed. The licensing examination serves as a regular test of physical fitness and performance ensuring independent control. As such, training and licensing together are critical for the achievement of overall competency.

One of ICAOâ€™s main tasks in the field of personnel licensing is to foster the resolution of differences in licensing requirements and to ensure that international licensing standards are kept in line with current practices and probable future developments. This is ever more crucial as the flight crew will be exposed to increasing traffic density and airspace congestion, highly complicated terminal area patterns and more sophisticated equipment. To accomplish this task, Annex I is regularly amended to reflect the rapidly changing environment.

ANNEX 2

to the Convention on International Civil Aviation

Rules of the Air

Air travel must be safe and efficient; this requires, among other things, a set of internationally agreed rules of the air. The rules developed by ICAO - which consist of general rules, visual flight rules and instrument flight rules contained in Annex 2 - apply without exception over the high seas, and over national territories to the extent that they do not conflict with the rules of the State being overflown. The pilot-in-command of an aircraft is responsible for compliance with the rules of the air.

An aircraft must be flown in accordance with the general rules and either the visual flight rules (VFR) or the instrument flight rules (IFR). Flight in accordance with visual flight rules is permitted if a flight crew is able to remain clear of clouds by a distance of at least 1 500 m horizontally and at least 300 m (1 000 ft) vertically and to maintain a forward visibility of at least 8 km. For flights in some portions of the airspace and at low altitudes, and for helicopters, the requirements are less stringent. An aircraft cannot be flown under VFR at night or above 6 100 m (20 000 ft) except by special permission. Balloons are

classified as aircraft, but unmanned free balloons can be flown only under specified conditions detailed in the Annex.

Instrument flight rules must be complied with in weather conditions other than those mentioned above. A State may also require that they be applied in designated airspaces regardless of weather conditions, or a pilot may choose to apply them even if the weather is good.

Most airliners fly under IFR at all times. Depending upon the type of airspace, these aircraft are provided with air traffic control service, air traffic advisory service or flight information service regardless of weather conditions. To fly under IFR, an aircraft must be equipped with suitable instruments and navigation equipment appropriate to the route to be flown. When operating under air traffic control the aircraft must maintain precisely the route and altitude that have been assigned to it and keep air traffic control informed about its position.

A flight plan must be filed with air traffic services units for all flights that will cross international borders, and for most other flights that are engaged in commercial operations. The flight plan provides information on the aircraft s identity and equipment, the point and time of departure, the route and altitude to be flown, the destination and estimated time of arrival, and the alternate airport to be used should landing at destination be impossible. The flight plan must also specify whether the flight will be carried out under visual or instrument flight rules.

Regardless of the type of flight plan, the pilots are responsible for avoiding collisions when in visual flight conditions, in accordance with the principle of see-and-avoid. However, flights operating under IFR are either kept separated by air traffic control units or provided with collision hazard information.

Right-of-way rules in the air are similar to those on the surface, but, as aircraft operate in three dimensions, some additional rules are required. When two aircraft are converging at approximately the same level, the aircraft on the right has the right of way except that aeroplanes must give way to airships, gliders and balloons, and to aircraft which are towing objects. An aircraft which is being overtaken has the right of way and the overtaking aircraft must remain clear by altering heading to the right. When two aircraft are approaching each other head on they must both alter heading to the right.

As interceptions of civil aircraft are, in all cases, potentially hazardous, the Council of ICAO has formulated special recommendations in Annex 2 which States are urged to implement through appropriate regulatory and administrative action. These special recommendations are contained in Attachment A to the Annex

All these rules, when complied with by all concerned, help make for safe and efficient flight.

ANNEX 3

to the Convention on International Civil Aviation

Meteorological Service for International Air Navigation

Pilots need to be informed about meteorological conditions along the routes to be flown and at their destination aerodromes.

The object of the meteorological service outlined in Annex 3 is to contribute to the safety, efficiency and regularity of air navigation. This is achieved by providing necessary meteorological information to operators, flight crew members, air traffic services units, search and rescue units, airport management and others concerned with aviation. Close liaison is essential between those supplying meteorological information and those using it.

At international aerodromes the meteorological information is normally supplied to aeronautical users by a meteorological office. Suitable telecommunications facilities are made available by States to permit those aerodrome meteorological offices to supply information to air traffic services and search and rescue services. Telecommunications between the meteorological office and control towers or approach control offices should be such that the required points may normally be contacted within 15 seconds.

Aerodrome reports and forecasts are required by aeronautical users to carry out their functions. Aerodrome reports include surface wind, visibility, runway visual range, present weather, cloud, air and dew-point temperature and atmospheric pressure, and are issued either half-hourly or hourly. These reports are complemented by special reports whenever any parameter changes beyond pre-fixed limits of operational significance. Aerodrome forecasts include surface wind, visibility, weather, cloud and temperature, and are issued every three or six hours for a validity period of 9 to 24 hours. Aerodrome forecasts are kept under continuous review and amended by the meteorological office concerned, as necessary.

Landing forecasts are prepared for some international aerodromes to meet requirements of landing aircraft. They are appended to the aerodrome reports and have a validity of two hours. Landing forecasts contain expected conditions over the runway complex in regard to surface wind, visibility, weather and cloud.

To assist pilots with their flight planning, most States provide meteorological briefings which are increasingly carried out using automated systems. Briefings comprise details of en-route weather, upper winds and upper-air temperatures, often given in the form of meteorological charts, warnings related to hazardous phenomena en-route, and reports and forecasts for the destination aerodrome and its alternates.

To provide aircraft in flight with information about significant changes in weather, meteorological watch offices are maintained. They prepare warnings of hazardous weather conditions, including thunderstorms, tropical cyclones, severe squall lines, heavy hail, severe turbulence, severe icing, mountain waves, sandstorms, duststorms and volcanic ash clouds. Moreover, these offices issue aerodrome warnings of meteorological conditions that could adversely affect aircraft or facilities on the

ground: for example, warnings of expected snowstorms. They also issue warnings for wind shear for the climb-out and approach paths. Furthermore, aircraft in flight are required to report severe weather phenomena encountered en route. These reports are disseminated by the air traffic services units to all aircraft concerned.

On most international routes routine observations are made by aircraft of upper winds and temperatures. They are transmitted by aircraft in flight to provide observational data that can be used in the development of forecasts. These aircraft observations of winds and temperatures are being automated using the air-ground data link communications.

As far as route forecasts are concerned, all flights require advance and accurate meteorological information so as to chart a course that will permit them to make use of the most favourable winds and conserve fuel. With rising fuel costs, this has become increasingly important. Therefore, ICAO has implemented the World Area Forecast System (WAFS). The purpose of this system is to provide States and aviation users with standardized and high-quality forecasts on upper-air temperature, humidity and winds and on significant weather. The WAFS is based on two world area forecast centres which use the most up-to-date computers and satellite telecommunications (ISCS and SADIS) to prepare and disseminate global forecasts in digital form directly to States and users.

During the past few years a number of incidents have occurred due to aircraft encounters with volcanic ash clouds following volcanic eruptions. In order to provide for the observation and reporting of volcanic ash clouds and the issuance of warnings to pilots and airlines, ICAO, with the assistance of other international organizations, has established an international airways volcano watch (IAVW). The corner stones of the IAVW are nine volcanic ash advisory centres which issue advisory information on volcanic ash globally, both to aviation users and meteorological offices concerned.

Automated observing systems are becoming increasingly useful at aerodromes and currently are considered to meet the aeronautical requirements as far as the observation of the surface wind, visibility, runway visual range and height of the cloud base, air and dew-point temperature and atmospheric pressure are concerned. In view of the improved performance of fully automated systems, they may now be used, without any human intervention, during non-operational hours of the aerodrome.

ANNEX 4

to the Convention on International Civil Aviation

Aeronautical Charts

The world of aviation, which by its very nature knows no geographical or political boundaries, requires maps that are unlike those used in ground transportation. For the safe performance of air operations it is essential that a current, comprehensive and authoritative source of navigation information be made available at all times, and aeronautical charts provide a convenient medium for supplying this

information in a manageable, condensed and coordinated manner. It is often said that a picture is worth a thousand words, however, todayâ€™s often complex aeronautical charts may be worth much more. Aeronautical charts not only provide the two dimensional information common in most maps, but also often portray three dimensional air traffic service systems. Almost all ICAO States produce aeronautical charts and most segments of aviation make reference to them for planning, air traffic control and navigation purposes. Without the global standardization of aeronautical charts it would be difficult for pilots and other chart users to effectively find and interpret important navigation information. The safe and efficient flow of air traffic is facilitated by aeronautical charts drawn to accepted ICAO Standards. The Standards, Recommended Practices and explanatory notes contained in Annex 4 define the obligations of States to make available certain ICAO aeronautical chart types, and specify chart coverage, format, identification and content including standardized symbology and colour use. The goal is to satisfy the need for uniformity and consistency in the provision of aeronautical charts that contain appropriate information of a defined quality. When a published aeronautical chart contains "ICAO" in its title, this indicates that the chart producer has conformed to both general Annex 4 Standards and those pertaining to a particular ICAO chart type.

The ICAO Council first adopted the original Standards and Recommended Practices in 1948. Annex 4 has its origins in "Annex J - Aeronautical Maps and Charts" of the Draft Technical Annexes adopted by the International Civil Aviation Conference in Chicago in 1944. Since the adoption of the first edition which provided specifications for seven ICAO chart types, there have been fifty-three amendments to update the Annex to accommodate the rapid advances in air navigation and cartographic technology. The ICAO series of aeronautical charts now consists of twenty-one types, each intended to serve specialized purposes. They range from detailed charts for individual aerodromes/heliports to small-scale charts for flight planning purposes and include electronic aeronautical charts for cockpit display.

There are three series of charts available for planning and visual navigation, each with a different scale. The Aeronautical Navigation Chart â€” ICAO Small Scale charts cover the largest area for a given amount of paper; they provide a general purpose chart series suitable for long-range flight planning. The World Aeronautical Chart â€” ICAO1 : 1 000 000 charts provide complete world coverage with uniform presentation of data at a constant scale, and are used in the production of other charts. The Aeronautical Chart â€” ICAO 1:500 000 series supplies more detail and provides a suitable medium for pilot and navigation training. This series is most suitable for use by low-speed, short- or mediumrange aircraft operating at low and intermediate altitudes.

The vast majority of scheduled flights take place along routes defined by radio and electronic navigation systems that make visual reference to the ground unnecessary. This type of navigation is conducted under instrument flight rules and the flight is required to comply with air traffic control services

procedures.The Enroute Chart â€” ICAO portrays the air traffic service system, radio navigation aids and other aeronautical information essential to en-route navigation under instrument flight rules. It is designed for easy handling in the crowded space of an aircraft flight deck, and the presentation of information is such that it can easily be read in varying conditions of natural and artificial light. Where flights cross extensive oceanic and sparsely settled areas, the Plotting Chart â€” ICAO provides a means of maintaining a continuous flight record of aircraft position and is sometimes produced to complement the more complex enroute charts.

As a flight approaches its destination, more detail is required about the area around the aerodrome of intended landing.

The Area Chart â€” ICAO provides pilots with information to facilitate the transition from en-route phase to final approach phase, as well as from take-off to en-route phases of the flight. The charts are designed to enable pilots to comply with departure and arrival procedures and holding pattern procedures, all of which are coordinated with the information on the instrument approach charts. Frequently, air traffic services routes or position reporting requirements are different for arrivals and for departures and these cannot be shown with sufficient clarity on the area chart. Under these conditions a separate Standard Departure Chart â€” Instrument (SID) â€” ICAO and Standard Arrival Chart â€”Instrument (STAR) â€” ICAO are produced. The area chart may also be supplemented by a Radar Minimum Altitude Chart â€” ICAO which is designed to provide the information to enable flight crews to monitor and cross-check altitudes assigned while under radar control.

The Instrument Approach Chart â€” ICAO provides the pilot with a graphic presentation of instrument approach procedures, and missed approach procedures to be followed should the crew be unable to carry out a landing. This chart type contains a plan and profile view of the approach with full details of associated radio navigation aids and necessary aerodrome and topographical information. When a visual-type approach is flown, the pilot may refer to a Visual Approach Chart â€” ICAO which illustrates the basic aerodrome layout and surrounding features easily recognizable from the air. As well as providing orientation, these charts are designed to highlight potential dangers such as obstacles, high terrain and areas of hazardous airspace.

The Aerodrome/Heliport Chart â€” ICAO provides an illustration of the aerodrome or heliport which allows the pilot to recognize significant features, rapidly clear the runway or heliport touchdown area after landing and follow taxiing instructions. The charts show aerodrome/heliport movement areas, visual indicator locations, taxiing guidance aids, aerodrome/heliport lighting, hangars, terminal buildings and aircraft/heliport stands, various reference points required for the setting and checking of navigation systems and operational information such as pavement strengths and radio communication facility frequencies. At large aerodromes where all the aircraft taxiing and parking information cannot be clearly

shown on the Aerodrome/Heliport Chart â€” ICAO, details are provided by the supplementary Aerodrome Ground Movement Chart â€” ICAO and the Aircraft Parking/Docking Chart â€” ICAO.
The heights of obstacles around airports are of critical importance to aircraft operations. Information about these are given in detail on the Aerodrome Obstacle Charts â€” ICAO, Types A, B, and C. These charts are intended to assist aircraft operators in making the complex take-off mass, distance and performance calculations required, including those covering emergency situations such as engine failure during takeoff. Aerodrome obstacle charts show the runways in plan and profile, take-off flight path areas and the distances available for take-off run and accelerate-stop, taking obstacles into account; this data is provided for each runway which has significant obstacles in the take-off area. The detailed topographical information provided by some aerodrome obstacle charts includes coverage of areas as far as 45 km away from the aerodrome itself.
Recent developments associated with "glass cockpit technologies", the availability and exchange of electronic aeronautical information, and the increased implementation of navigation systems with high positional accuracies and continuous position fixing, have created an environment well suited to the rapid development of viable electronic charts for display in the cockpit. A fully developed electronic aeronautical chart display has the potential for functionality that extends well beyond paper charts and could offer significant benefits such as continuous plotting of the aircraftâ€™s position and customization of the chart display depending on the phase of flight and other operational considerations.
Annex 4, Chapter 20 Electronic Aeronautical Chart Display â€” ICAO provides basic requirements aimed at standardizing electronic aeronautical chart displays while not unduly limiting the development of this new cartographic technology.
Annex 4 provisions have evolved considerably from the seven original ICAO chart types adopted in 1948. To ensure that aeronautical charts meet the technological and other requirements of modern aviation operations, ICAO is constantly monitoring, improving and updating aeronautical chart specifications.

ANNEX 5

to the Convention on International Civil Aviation

Units of Measurement to be Used in Air and Ground Operations

The question of the units of measurement to be used in international civil aviation goes back as far as the origin of ICAO itself. At the International Civil Aviation Conference held at Chicago in 1944, the importance of a common system of measurements was realized and a resolution was adopted calling on States to make use of the metric system as the primary international standard.
A special committee was established to look into the question and as a result the First Assembly of ICAO in 1947 adopted a resolution (A1-35) recommending a system of units to be issued as an ICAO

Standard as soon as possible. Stemming from this resolution, the first edition of Annex 5 was adopted in 1948. This contained an ICAO table of units based essentially on the metric system, but it also contained four additional interim tables of units for use by those States unable to use the primary table. It was evident from the beginning that the achievement of standardization in units of measurement would not be easy, and Annex 5 was initially applicable only to those units used in communications between aircraft and ground stations.

Many attempts to improve the level of standardization were made in the following years and a number of amendments to Annex 5 were introduced. By 1961 the number of tables of units in the Annex had been reduced to two, which remained until Amendment 13 was adopted in March 1979. Amendment 13 extended considerably the scope of ICAO s role in standardizing units of measurements to cover all aspects of air and ground operations and not just air-ground communications. It also introduced the International System of Units, known as SI from the "SystÃ¨me International dâ€™UnitÃ©s", as the basic standardized system to be used in civil aviation.

In addition to the SI units the amendment recognized a number of non-SI units which may be used permanently in conjunction with SI units in aviation. These include the litre, the degree Celsius, the degree for measuring plane angle, etc. The amendment also recognized, as do the relevant ICAO Assembly Resolutions, that there are some non-SI units which have a special place in aviation and which will have to be retained, at least temporarily. These are the nautical mile and the knot, as well as the foot when it is used in the measurement of altitude, elevation or height only. Some practical problems arise in the termination of the use of these units and it has not yet been possible to fix a termination date.

Amendment 13 to Annex 5 represented a major step forward in the difficult process of standardizing units of measurement in international civil aviation. Although complete standardization is still some time away, the foundation has been laid for resolving a problem which has been recognized by ICAO since its inception. With this amendment a very large degree of standardization has been achieved between civil aviation and other scientific and engineering communities.

Amendments 14 and 15 to Annex 5 introduced a new definition of the metre, and references to temporary non-SI units were deleted.

ANNEX 6

to the Convention on International Civil Aviation

Operation of Aircraft (Parts I, II and III)

The essence of Annex 6, simply put, is that the operation of aircraft engaged in international air transport must be as standardized as possible to ensure the highest levels of safety and efficiency.

In 1948 the Council first adopted Standards and Recommended Practices for the operation of aircraft engaged in international commercial air transport. They were based on recommendations of States

attending the first session of the Operations Divisional Meeting held in 1946, and are the basis of Part I of Annex 6.

In order to keep pace with a new and vital industry, the original provisions have been and are being constantly reviewed. For instance, a second part to Annex 6, dealing exclusively with international general aviation, became applicable in September 1969. Similarly, a third part to Annex 6, dealing with all international helicopter operations, became applicable in November 1986. Part III originally addressed only helicopter flight recorders, but an amendment completing the coverage of helicopter operations in the same comprehensive manner as aeroplane operations covered in Parts I and II was adopted for applicability in November 1990.

It would be impractical to provide one international set of operational rules and regulations for the wide variety of aircraft which exist today. Aircraft range from commercial airliners to the one-seat glider, all of which cross national boundaries into adjacent States. In the course of a single operation, a long-range jet may fly over many international borders. Each aircraft has unique handling characteristics relative to its type and, under varying environmental conditions, may have specific operational limitations. The very international nature of commercial aviation, and of general aviation to a lesser degree, requires pilots and operators to conform to a wide variety of national rules and regulations.

The purpose of Annex 6 is to contribute to the safety of international air navigation by providing criteria for safe operating practices, and to contribute to the efficiency and regularity of international air navigation by encouraging ICAO s Contracting States to facilitate the passage over their territories of commercial aircraft belonging to other countries that operate in conformity with these criteria.

ICAO Standards do not preclude the development of national standards which may be more stringent than those contained in the Annex. In all phases of aircraft operations, minimum standards are the most acceptable compromise as they make commercial and general aviation viable without prejudicing safety. The Standards accepted by all Contracting States cover such areas as aircraft operations, performance, communications and navigation equipment, maintenance, flight documents, responsibilities of flight personnel and the security of the aircraft.

The advent of the turbine engine and associated high performance aircraft designs necessitated a new approach to civil aircraft operation. Aircraft performance criteria, flight instruments, navigation equipment and many other operational aspects required new techniques, and they in turn created the need for international regulations to provide for safety and efficiency.

The introduction of high-speed, long- and short-range aircraft, for example, created problems associated with endurance at relatively low altitudes, where fuel consumption becomes a major factor. The fuel policies of many of the international civil aviation carriers are required to take into account the need for possible diversions to an alternate aerodrome when adverse weather is forecast at the intended

destination.

Clearly defined International Standards and Recommended Practices exist in respect of operating minima based on the aircraft and the environmental factors found at each aerodrome. Subject to the State of the Operator s approval, the aircraft operator has to take into account the type of aeroplane or helicopter, the degree of sophistication of equipment carried on the aircraft, the characteristics of the approach and runway aids and the operating skill of the crew in carrying out procedures involved in operations in all weather conditions.

Another development has been the introduction of provisions (generally referred to as ETOPS) to ensure safe operations by twinengined aeroplanes operating over extended ranges, often over water. This type of operation has arisen because of the attractive economics of the large twin-engined aeroplanes now available.

The human factor is an essential component for the safe and efficient conduct of aircraft operations. Annex 6 spells out the responsibilities of States in supervising their operators, particularly in respect of flight crew. The main provision requires the establishment of a method of supervising flight operations to ensure a continuing level of safety. It calls for the provision of an operations manual for each aircraft type, and places the onus on each operator to ensure that all operations personnel are properly instructed in their duties and responsibilities, and in the relationship of such duties to the airline operation as a whole.

The pilot-in-command has the final responsibility to make sure that flight preparation is complete and conforms to all requirements, and is required to certify flight preparation forms when satisfied that the aircraft is airworthy, and that other criteria are met in respect to instruments, maintenance, mass and load distribution (and the securing of the loads), and operating limitations of the aircraft.

Another important aspect covered in Annex 6 is the requirement for operators to establish rules limiting the flight time and flight duty periods for flight crew members. The same Standard also calls for the operator to provide adequate rest periods so that fatigue occurring either on a flight, or successive flights over a period of time, does not endanger the safety of a flight. An alert flight crew must be capable of dealing not only with any technical emergencies but with other crew members and must react correctly and efficiently in case of an evacuation of the aircraft. Rules such as this must be included in the operations manual.

Critical to safe aircraft operations is the knowledge of the operating limits of each particular type of aircraft. The Annexsets out minimum performance operating limitations, with respect to aircraft in use today. These Standards take into account a significant number of factors which can affect the performance of a wide range of aircraft: mass of the aircraft, elevation, temperature, weather conditions and runway conditions, and include take-off and landing speeds under conditions which involve the

failure of one or more power-units.

A detailed example is included in Attachment C to Annex 6, Part I, in which a level of performance has been calculated and found to apply over a wide range of aeroplane characteristics and atmospheric conditions. ICAO is actively engaged in efforts to foresee the requirements of future operations such as the recent acceptance of a new set of procedures which revise the obstacle clearance requirements and instrument approach procedures for all categories of international civil commercial aviation.

Hijacking of civil aircraft has placed an additional burden on the pilot-in command. The various safety precautions that such acts necessitate, in addition to precautions of a purely technical nature, have been studied by ICAO and made to cover as many emergency situations as possible.

Part II of Annex 6 deals with aeroplanes in international general aviation. International commercial in transport operations and general aviation operations in helicopters is covered in Part III. Some international general aviation operations may be performed by crews less experienced and less skilled than commercial civil aviation personnel. eEquipment installed in some general aviation aircraft may not meet the same standard as in commercial in transport aircraft, and general aviation operations are subject to less rigorous standards and conducted with a greater degree of freedom than is found in commercial air transport operations.

Because of this, ICAO recognizes that international general aviation pilots and their passengers may not necessarily enjoy the same level of safety as the farepaying passenger in commercial air transport. Part II of the Annex, however, was designed specifically to ensure an acceptable level of safety to third parties (persons on the ground and persons in the air in other aircraft). Thus, operations involving commercial and general aviation aircraft in a common environment are required to adhere to the minimum safety standards.

ANNEX 7

to the Convention on International Civil Aviation

Aircraft Nationality and Registration Marks

How are aircraft classified and identified, and how can you tell aircraft nationality?

These are but two of the questions answered in the briefest ICAO Annex, which deals with aircraft nationality and registration marks, and, in a separate table, classifies aircraft by how they maintain sustained flight in the air.

The Annex is based on Articles 17 to 20 of the Chicago Convention. The ICAO Council adopted the first Standards concerning this issue in February 1949, based on recommendations from the first and second sessions of the Airworthiness Division, held in 1946 and 1947 respectively. Since then only four amendments have been made to the Annex. The latest edition is the fifth one, issued in 2003.

The first amendment introduced the definition of a "rotorcraft", and modified requirements related to the

location of nationality and registration marks on wings. The second amendment redefined the word "aircraft", the use of which became effective in 1968; it also implemented a decision that all air-cushion-type vehicles, such as hovercraft and other ground-effect machines, should not be classified as aircraft.

Since Article 77 of the Convention permits joint operating organizations, Amendment 3 was introduced to define "Common Mark", "Common Mark Registering Authority" and "International Operating Agency", to enable aircraft of international operating agencies to be registered on other than a national basis. The determining principle of the related provisions is that each international operating agency must be assigned a distinctive common mark by ICAO, this being selected from a series of symbols included in the radio call signs allocated by the International Telecommunication Union (ITU).

The fourth amendment, adopted in 1981, introduces provisions related to registration and nationality marks for unmanned free balloons.

The fifth amendment, adopted in 2003, introduces a new requirement for the Certificate of Registration to carry an English translation if issued in a language other than English.

The Annex sets out procedures for selection by ICAO Contracting States of nationality marks from the nationality symbols included in the radio call signs allocated to the States of Registry by the ITU.

It sets standards for the use of letters, numbers and other graphic symbols to be used in the nationality and registration marks, and spells out where these characters will be located on different types of airborne vehicles, such as lighter-than-air aircraft and heavier-than-air aircraft.

This Annex also calls for the registration of the aircraft, and provides a sample of this certificate for use by ICAO Contracting States. This certificate must be carried in the aircraft at all times, and an identification plate, bearing at least the aircraft s nationality, or common mark and registration mark, must be affixed in a prominent position to the main entrance.

Years of considerable effort permit the classification of aircraft to be as simple as possible, and yet encompass as many types of flying machines as the human mind can devise.

ANNEX 8

to the Convention on International Civil Aviation

Airworthiness of Aircraft

In the interest of safety, an aircraft must be designed, constructed and operated in compliance with the appropriate airworthiness requirements of the State of Registry of the aircraft. Consequently, the aircraft is issued with a Certificate of Airworthiness declaring that the aircraft is fit to fly.

To facilitate the import and export of aircraft, as well as the exchange of aircraft for lease, charter or interchange, and to facilitate operations of aircraft in international air navigation, Article 33 of the Convention on International Civil Aviation places the burden on the State of Registry to recognize and

render valid an airworthiness certificate issued by another Contracting State, subject to the condition that the airworthiness requirements under which such a certificate is issued or rendered valid are equal to or above the minimum standards which may be established by ICAO from time to time pursuant to the Convention. These minimum standards are contained in Annex 8, the first edition of which was adopted by the Council on 1 March 1949.

Annex 8 includes broad standards which define, for application by the national airworthiness authorities, the minimum basis for the recognition by States of Certificates of Airworthiness for the purpose of flight of aircraft of other States into and over their territories, thereby achieving, among other things, protection of other aircraft, third parties and property. It is recognized that ICAO Standards would not replace national regulations and that national codes of airworthiness containing the full scope and extent of detail considered necessary by individual States would be required as the basis for the certification of individual aircraft. Each State is free to develop its own comprehensive and detailed code of airworthiness or to select, adopt or accept a comprehensive and detailed code established by another Contracting State. The level of airworthiness required to be maintained by a national code is indicated by the broad standards of Annex 8 supplemented, where necessary, by guidance material provided in ICAO s Airworthiness Technical Manual (Doc 9760).

Annex 8 is divided into four parts. Part I includes definitions; Part II deals with procedures for certification and continuing airworthiness of aircraft; Part III includes technical requirements for the certification of new large aeroplane designs; Part IV deals with helicopters.

One of the supporting clauses in the definitions used in the Annex defines the environment in which an aircraft is expected to perform as "anticipated operating conditions". These are conditions which are known from experience or which can be reasonably envisaged to occur during the operational life of the aircraft, taking into account the operations for which the aircraft is made eligible. They also include conditions relative to the weather, terrain surrounding the aerodromes from which the aircraft is expected to operate, functioning of the aircraft, efficiency of personnel and other factors affecting safety in flight. Anticipated operating conditions do not include those extremes which can be effectively avoided by operating procedures and those extremes which occur so infrequently that higher levels of airworthiness to meet them would render aircraft operations impracticable.

Under the provisions related to continuing airworthiness of aircraft, the State of Registry must inform the State of Design when it first enters in its register an aircraft of the type certified by the latter. This is to enable the State of Design to transmit to the State of Registry any generally applicable information it has found necessary for the continuing airworthiness and for the safe operation of the aircraft. The State of Registry must also transmit to the State of Design all continuing airworthiness information originated by it for transmission, as necessary, to other Contracting States known to have on their registers the

same type of aircraft.

To assist States in establishing contact with appropriate national airworthiness authorities, necessary information has been provided in an ICAO circular (Circ 95) which is available on the ICAO-Net.

The technical standards dealing with certification of aeroplanes are limited at present to multi-engined aeroplanes of over 5 700 kg maximum certificated takeoff mass. These standards include requirements related to performance, flying qualities, structural design and construction, engine and propeller design and installation, systems and equipment design and installation, and operating limitations including procedures and general information to be provided in the aeroplane flight manual, crashworthiness of aircraft and cabin safety, operating environment and human factors and security in aircraft design.

The performance standards require that the aeroplane shall be capable of accomplishing the minimum performance specified in the Annex at all phases of flight, in the event that the critical power-unit has failed and the remaining power-units are operated within their take-off power limitations, be capable of safely continuing or abandoning its take-off. After the initial take-off phase, the aeroplane must be capable of continuing climb up to a height at which the aeroplane can continue safe flight and landing, while the remaining power-units are operating within their continuous power limitations.

The aeroplane must be controllable and stable under all anticipated operating conditions without exceptional skill, alertness or strength on the part of the pilot, even in the event of failure of any power-unit. Furthermore, the stall characteristics of the aeroplane must be such as to give the pilot clear warning, and it should be possible for the pilot to maintain full control of the aeroplane without altering engine power.

Requirements for detailed design and construction provide for a reasonable assurance that all aeroplane parts will function reliably and effectively. Functioning of all moving parts essential to safe operation must be demonstrated by suitable tests, and all materials used must conform to approved specifications. Methods of fabrication and assembly must produce a consistently sound structure which must be protected against deterioration or loss of strength due to weathering, corrosion, abrasion or other causes, which could pass unnoticed. Means must be provided which will automatically prevent emergencies or enable the crew to deal with them effectively, and design should minimize the possibility of in-flight fires, cabin depressurization and toxic gases in the aeroplane and the aircraft against lightning and static electricity.

Special consideration is given to requirements dealing with design features which affect the ability of the flight crew to maintain controlled flight. The layout of the flight crew compartment must be such as to minimize the possibility of incorrect operation of controls due to confusion, fatigue or interference. It should allow a sufficiently clear, extensive and undistorted field of vision for the safe operation of the aeroplane.

Aeroplane design features also provide for the safety, health and well being of occupants by providing an adequate cabin environment during the anticipated flight and ground and water operating conditions, the means for rapid and safe evacuation in emergency landings and the equipment necessary for the survival of the occupants following an emergency landing in the expected external environment for a reasonable time-span.

Requirements for the certification of engines and accessories are designed to ensure that they function reliably under the anticipated operating conditions. An engine of the type must be tested to establish its power or thrust from characteristics, to ensure that operating parameters are satisfactory and to demonstrate adequate margins of freedom from detonation, surge or other detrimental conditions. Tests must be of sufficient duration and must be conducted at such power and other operating conditions as are necessary to demonstrate the reliability and durability of the engine.

Following the recent events of highjacking and terrorist acts on board aircraft, special security features have been included in aircraft design to improve the protection of the aircraft. These include special features in aircraft systems, identification of a least-risk bomb location, and strengthening of the cockpit door, ceilings and floors of the cabin crew compartment.

ANNEXE 9

to the Convention on International Civil Aviation

Facilitation

The Standards and Recommended Practices (SARPs) on Facilitation (FAL) are derived from several provisions of the Chicago Convention. Article 37 obliges ICAO to adopt and amend from time to time international standards and recommended practices and procedures dealing with, inter alia, customs and immigration procedures. Article 22 obliges each Contracting State to adopt all practicable measures to facilitate and expedite navigation by aircraft between the territories of Contracting States, and to prevent unnecessary delays to aircraft, crews, passengers, and cargo, especially in the administration of the laws relating to immigration, quarantine, customs and clearance. Article 23 of the Convention expresses the undertaking of each Contracting State to establish customs and immigration procedures affecting international air navigation in accordance with the practices established or recommended pursuant to the Convention.

A number of other articles have special pertinence to the provisions of the FAL Annex and have been taken into account in its preparation. These include: Article 10, which requires all aircraft entering the territory of a Contracting State to land at, and depart from, an airport designated by that State for customs and other examination; Article 13, which require compliance of a Contracting Stateâ€™s entry, clearance, immigration, passports, customs and quarantine laws and regulations, by or on behalf of

passengers, crew or cargo; Article 14, which obliges each Contracting State to take effective measures to prevent the spread by means of air navigation of communicable diseases; and Article 24 (customs duty), Article 29 (documents carried in aircraft) and Article 35 (cargo restrictions).

These provisions of the Convention find practical expression in the SARPs of Annex 9, the first edition of which was adopted in 1949. The SARPs pertain specifically to facilitation of landside formalities for clearance of aircraft and commercial traffic through the requirements of customs, immigration, public health and agriculture authorities. The Annex is a wide-ranging document which reflects the flexibility of ICAO in keeping pace with international civil aviation. ICAO is recognized as being the first international body to make a real start on facilitation by developing Standards which bind its Contracting States.

The Annex provides a frame of reference for planners and managers of international airport operations, describing maximum limits on obligations of industry and minimum facilities to be provided by governments. In addition, Annex 9 specifies methods and procedures for carrying out clearance operations in such a manner as to meet the twin objectives of effective compliance with the laws of States and productivity for the operators, airports and government inspection agencies involved.

Initially, the main thrust of the Annex consisted of efforts to reduce paperwork, standardize internationally the documents that were to accompany traffic between States, and simplify the procedures required to clear aircraft, passengers and cargo. It wasâ€”as it still isâ€”recognized that delays due to cumbersome formalities must be reduced, not just because they are unpleasant but, in practical terms, because they are costly to all of the "customer groups" in the community and because they interfere with the success of everyone.

Over the years, traffic volumes grew. States resources for inspection regimes could not keep pace. The facilitation of landside clearance formalities became a much more complex issue. The focus of Annex 9 therefore changed. In its 11th edition (2002), the Annex 9 retained its original strategies, carried forward in all editions since the first, of reducing paperwork, standardizing documentation and simplifying procedures. However, it shifted its focus to inspection techniques based on risk management, with the objectives to increase efficiency, reduce congestion in airports and enhance security; to control abuses such as narcotics trafficking and travel document fraud; and to support the growth of international trade and tourism. In addition, new SARPs and guidance material were introduced to address certain high-profile issues of public interest such as the treatment of persons with disabilities.

More recently, the face of facilitation has been further shaped by major developments in the civil aviation environment which have occurred during the last ten years (the mid-1990s and beyond). These phenomena include: technological progress, with the universal proliferation of the use of computers and electronic data interchange systems; massive increases in illegal migration which have become

worldwide immigration and national security problems, with civil aviation the transport mode of choice and passport fraud a frequent tactic; and ongoing political and social upheaval, which has given rise to increased use of terrorism, in which unlawful interference with civil aviation is still a powerful technique for pursuing an objective.

These topics formed the basis of the agenda of the 12th Session of the Facilitation Division that was held in Cairo in early 2004 with the theme, "Managing Security Challenges to Facilitate Air Transport Operations." Discussions on the essential role that facilitation measures play in the improvement of security led to the Division making recommendations on the security of travel documents and border control formalities, on modernized provisions for facilitation and security in air cargo service operations, on controlling travel document fraud and illegal migration and on international health regulations and hygiene and sanitation in aviation.

The consequent 12th edition of Annex 9 (expected publication: 2005) reflects ICAOâ€™s contemporary FAL strategy. This is to advocate and support action by Contracting States in three principal areas: the standardization of travel documents, the rationalization of border clearance systems and procedures, and international cooperation to tackle security problems related to passengers and cargo. While the primary motivation of Annex 9 will continue to carry out the mandate in Article 22 of the Chicago Convention, "...to prevent unnecessary delays to aircraft, passengers and cargo....", numerous provisions, developed with the intent to increase efficiency in control processes, support also the objective to raise the level of general security.

Enhancing the security of travel documents and tackling illegal migration are among the major changes introduced into Annex 9 through its 12th edition. Most of the existing Chapters and Appendices of the Annex remain more-or-less unchanged from the 11th edition. Two Chapters, in particular, have been substantially amended to reflect new international realities.

Chapter 3, which deals with the entry and departure of persons and baggage, now contains a Standard obliging Contracting States to regularly update security features in new versions of their travel documents, to guard against their misuse and to facilitate detection of cases where such documents have been unlawfully altered, replicated or issued. Another Standard requires States to establish controls on the lawful creation and issuance of travel documents. States are also now obliged to issue separate passports to all persons, regardless of age, and to issue them in machine readable form, in accordance with ICAOâ€™s specifications. States and airlines are required to collaborate in combatting travel document fraud. As for crew members, States are obliged to place adequate controls on the issuance of crew member certificates and other official crew identity documents.

Finally, an entirely new Chapter 5 is devoted to the growing problem of inadmissible persons and deportees. The SARPs of this Chapter set out in clear terms the obligations of States and airlines

vis-Ã -vis transport of potentially illegal migrants and similar "problem" cases that the international air transport industry comes across in ever greater numbers daily. Strict adherence by Contracting States of the obligations to remove from circulation fraudulent travel documents or genuine documents used fraudulently will greatly help to constrict the flow of illegal migrants the world over.

ANNEX 10

to the Convention on International Civil Aviation

Aeronautical Telecommunications (Volumes I, II, III, IV and V)

Three of the most complex and essential elements of international civil aviation are aeronautical communications, navigation and surveillance. These elements are covered by Annex 10 to the Convention.

Annex 10 is divided into five volumes:

Volume I â€" Radio Navigation Aids

Volume II â€" Communications Procedures including those with PANS status

Volume III â€" Communication Systems

Part 1 â€" Digital Data Communication Systems

Part 2 â€" Voice Communication Systems

Volume IV â€" Surveillance Radar and Collision Avoidance Systems

Volume V â€" Aeronautical Radio Frequency Spectrum Utilization

The five volumes of this Annex contain Standards and Recommended Practices (SARPs), Procedures for Air Navigation Services (PANS) and guidance material on aeronautical communication, navigation and surveillance systems.

Volume I of Annex 10 is a technical document which defines for international aircraft operations the systems necessary to provide radio navigation aids used by aircraft in all phases of flight. The SARPs and guidance material of this volume list essential parameter specifications for radio navigation aids such as the global navigation satellite system (GNSS), instrument landing system (ILS), microwave landing system (MLS), very high frequency (VHF) omnidirectional radio range (VOR), non-directional radio beacon (NDB) and distance measuring equipment (DME). The information contained in this volume includes aspects of power requirements, frequency, modulation, signal characteristics and monitoring needed to ensure that suitably equipped aircraft will be able to receive navigation signals in all parts of the world with the requisite degree of reliability.

Volumes II and III cover two general categories of voice and data communications that serve international civil aviation. They are the ground-ground communication between points on the ground and the air-ground communication between aircraft and points on the ground. The air-ground communication provides aircraft with all necessary information to conduct flights in safety, using both

voice and data. An important element of the ground-ground communication is the aeronautical fixed telecommunications network (AFTN), a worldwide network organized to meet the specific requirements of international civil aviation. Within the AFTN category, all significant ground points, which include airports, air traffic control centres, meteorological offices and the like, are joined by appropriate links designed to serve aircraft throughout all phases of flight. Messages originated at any point on the network are routed as a matter of routine to all points required for the safe conduct of flight.

In Volume II of Annex 10, general, administrative and operational procedures pertaining to aeronautical fixed and mobile communications are presented.

Volume III of Annex 10 contains SARPs and guidance material for various air-ground and ground-ground voice and data communication systems, including aeronautical telecommunication network (ATN), aeronautical mobile-satellite service (AMSS), secondary surveillance radar (SSR) Mode S air-ground data link, very high frequency (VHF) airground digital link (VDL), aeronautical fixed telecommunication network (AFTN), aircraft addressing system, high frequency data link (HFDL), aeronautical mobile service, selective calling system (SELCAL), aeronautical speech circuits and emergency locator transmitter (ELT).

Volume IV of Annex 10 contains SARPs and guidance material for secondary surveillance radar (SSR) and airborne collision avoidance systems (ACAS), including SARPs for SSR Mode A, Mode C and Mode S, and the technical characteristics of ACAS.

In Volume V of Annex 10, SARPs and guidance material on the utilization of aeronautical frequencies are defined. The International Telecommunication Union (ITU) has set up a framework in which the demands for radio spectrum from individual States are balanced with the interests of different radio service users to produce a planned radio environment incorporating interference-free, effective and efficient radio spectrum use. Volume V contains information on the assignment planning of individual aeronautical radio stations operating or planned to operate in different frequency bands.

ANNEX 11

to the Convention on International Civil Aviation

Air Traffic Services

Control of air traffic was almost unknown in 1944. Today, air traffic control, flight information and alerting services, which together comprise air traffic services, rank high among the indispensable ground support facilities which ensure the safety and efficient operation of air traffic throughout the world.

Annex 11 to the Chicago Convention defines air traffic services and specifies the worldwide Standards and Recommended Practices applicable in the provision of these services.

The world s airspace is divided into a series of contiguous flight information regions (FIRs) within which air traffic services are provided. In some cases, the flight information regions cover large oceanic

areas with relatively low air traffic density, within which only flight information service and alerting service are provided. In other flight information regions, large portions of the airspace are controlled airspace within which air traffic control service is provided in addition to flight information and alerting services.

The prime objective of air traffic services, as defined in the Annex, is to prevent collisions between aircraft, whether taxiing on the manoeuvring area, taking off, landing, en route or in the holding pattern at the destination aerodrome. The Annex also deals with ways of expediting and maintaining an orderly flow of air traffic and of providing advice and information for the safe and efficient conduct of flights and alerting service for aircraft in distress. To meet these objectives, ICAO provisions call for the establishment of flight information centres and air traffic control units.

All aircraft fly in accordance with either instrument flight rules (IFR) or visual flight rules (VFR). Under IFR, the aircraft fly from one radio aid to the next or by reference to self-contained airborne navigation equipment from which the pilot can determine the aircraft s position at all times. IFR flights are conducted through all but the severest of weather conditions, while aircraft flying under VFR must remain clear of cloud and operate in visibility conditions which will permit the pilot to see and avoid other aircraft. Chapter 3 specifies the types of service to be provided to these flights - for example, IFR flights are provided with air traffic control service when operating in controlled airspace. When operating in uncontrolled airspace, flight information service, which includes known traffic information, is provided and the pilot is responsible for arranging the flight to avoid other traffic. Control service is normally not provided to VFR flights, unless in specific areas, in which case VFR flights are separated from IFR flights but no separation service is provided between VFR flights, unless specifically required by the ATC authority. However, not all aircraft are provided with air traffic services. If an aircraft is operating entirely outside of controlled airspace in an area where a flight plan is not required, the flight may not even be known to air traffic services.

Safety is the overriding concern of international civil aviation and air traffic management contributes substantially to safety in aviation. Annex 11 contains an important requirement for States to implement systematic and appropriate air traffic services (ATS) safety management programmes to ensure that safety is maintained in the provision of ATS within airspaces and at aerodromes. Safety management systems and programmes will serve as an important contribution toward ensuring safety in international civil aviation.

Air traffic control service consists of clearances and information issued by air traffic control units to achieve longitudinal, vertical or lateral separation between aircraft, in accordance with the provisions set out in Chapter 3 of the Annex. This chapter also deals with the contents of clearances, their coordination between ATC units and the co-ordination of transfer of responsibility for control as a flight progresses

from the area of one control unit to another. An orderly transfer process requires that an aircraft must be under the control of only one air traffic control unit at any one time.

Air traffic control units are sometimes faced with a traffic demand beyond the capacity of a particular location or area, as occurs at busy aerodromes during peak periods.

Annex 11 provides for ATC units to specify restrictions to the traffic flow, when required, for the purpose of avoiding excessive delays to aircraft in flight.

Annex 11 also specifies the requirements for coordination between the civil air traffic control units and military authorities or other agencies responsible for activities that may affect flights of civil aircraft. Military units are provided with flight plan and other data concerning flights of civil aircraft to assist in establishing identification in the event that a civil aircraft approaches or enters a restricted area.

Flight information service is provided to aircraft operating in controlled airspace and to others known to the air traffic services units. The information includes significant meteorological (SIGMET) information, changes in the serviceability of navigation aids and in the condition of aerodromes and associated facilities and any other information likely to affect safety. IFR flights receive, in addition, information on weather conditions at departure, destination and alternate aerodromes, collision hazards to aircraft operating outside of control areas and control zones and, for flight over water, available information on surface vessels. VFR flights also receive information on weather conditions which would make visual flight impractical. Annex 11 also contains specifications for operational flight information service (OFIS) broadcasts, including automated terminal information service (ATIS) broadcasts.

Chapter 5 of Annex 11 is concerned with the alerting service, which provides for the alerting of rescue coordination centres when an aircraft is believed or known to be in a state of emergency, when it fails to communicate or to arrive on time or when information is received that a forced landing has been made or is imminent. Alerting service is automatically provided to all aircraft receiving air traffic control service and, as far as is practicable, to all other aircraft whose pilots have filed a flight plan or are otherwise known to air traffic services. It is also provided to aircraft known or believed to be subject to unlawful interference. The effect of the alerting service is to set in motion all appropriate rescue and emergency organizations which can provide assistance when and where required.

Subsequent chapters of the Annex cover ATS requirements for air-ground communications and for communications between ATS units and between those units and other essential offices. These chapters also specify the information required to be supplied to each type of air traffic services unit. Air-ground communications should permit direct, rapid and continuous static-free two-way radiotelephony communication, whenever practicable, while those between ATS units should permit exchange of printed messages and, in the case of air traffic control units, direct voice communications between controllers. Because of the importance of the information transmitted over air-ground radio channels and

that received from other units and offices, Annex 11 recommends that such communications should be recorded.

An Appendix to the Annex spells out the principles governing the identification of air traffic services routes to allow both pilots and ATS to make unmistakable reference to any route without resorting to geographical references. Another Appendix specifies the requirements for designators for significant points marked by a radio aid as well as those not marked by a radio aid. Annex 11 also contains a series of attachments with guidance material on a variety of subjects, from airspace organization to ATS requirements for air-ground channels to the establishment and naming of standard arrival and departure routes.

Contingency planning is an important responsibility of all States that provide air navigation services. An Attachment to Annex 11 contains concise guidance to assist States in providing for the safe and orderly flow of international air traffic in the event of disruptions of air traffic services and related supporting services and in preserving the availability of major world air routes in the event of disruptions.

The sky may be limitless but not for air traffic. As more aircraft fill the crowded air routes, air traffic control concepts, procedures, equipment and rules will continue to evolve as will the provisions of this Annex.

ANNEX 12

to the Convention on International Civil Aviation

Search and Rescue

Search and rescue services are organized to respond to persons apparently in distress and in need of help. Prompted by the need to rapidly locate and rescue survivors of aircraft accidents, a set of internationally agreed Standards and Recommended Practices has been incorporated in ICAO s Annex 12 - Search and Rescue (SAR).

The Annex, which is complemented by a three-part Search and Rescue Manual dealing with SAR organization, management and procedures, sets forth the provisions for the establishment, maintenance and operation of search and rescue services by ICAO Contracting States in their territories and over the high seas. Proposals for Annex 12 were originally made in 1946. By 1951, the proposals had been reviewed and revised to meet international civil aviation requirements, and were embodied as Standards and Recommended Practices in the first edition of Annex 12.

Containing five chapters, the Annex details the organization and cooperative principles appropriate to effective SAR operations, outlines required necessary preparatory measures and sets forth proper operating procedures for SAR services in actual emergencies.

One of the first aspects addressed in the organizational chapter is the requirement for States to provide SAR services within their territories and over those portions of the high seas or areas of undetermined

sovereignty as determined in regional air navigation agreements and approved by the Council of ICAO. This chapter also deals with the establishment of mobile SAR units, the means of communication for these units and the designation of other elements of public or private services suitable for search and rescue activity.

Provisions concerning equipment requirements of rescue units reflect the need to give adequate assistance at the scene of accidents, due regard being given to the number of passengers involved.

Cooperation between the SAR services of neighbouring States is essential to the efficient conduct of SAR operations. This important aspect is covered in depth in Chapter 3, which requires ICAO Contracting States to publish and disseminate all information needed for the expeditious entry into their territories of rescue units of other States. It is also recommended that persons qualified in the conduct of aircraft accident investigation accompany rescue units in order to facilitate accident investigation.

Chapter 4, which deals with preparatory measures, sets forth the requirements for collation and publication of information needed by SAR services. It specifies that detailed plans of operation must be prepared for the conduct of SAR operations and indicates the necessary information for inclusion in the plans.

Preparatory measures required to be undertaken by rescue units, training requirements and removal of aircraft wreckage are also covered. A search and rescue operation is a dynamic activity requiring uniformly comprehensive operating procedures that are sufficiently flexible to meet extraordinary needs. Beginning with the requirement to identify and categorize the emergency situation, Chapter 5 details action to be taken for each category of event.

Three distinct phases categorize emergency situations. The first is the "Uncertainty Phase" which is commonly declared when radio contact has been lost with an aircraft and cannot be re-established or when an aircraft fails to arrive at its destination. During this phase the Rescue Coordination Centre (RCC) concerned may be activated. The RCC collects and evaluates reports and data pertaining to the subject aircraft.

Depending on the situation, the uncertainty phase may develop into an "Alert Phase", at which time the RCC alerts appropriate SAR units and initiates further action.

The "Distress Phase" is declared when there is reasonable certainty that an aircraft is in distress. In this phase, the RCC is responsible for taking action to assist the aircraft and to determine its location as rapidly as possible. In compliance with a predetermined set of procedures, the aircraft operator, State of Registry, air traffic services units concerned, adjacent RCCs and appropriate accident investigation authorities are informed; a plan for the conduct of the search and rescue operation is drawn up and its execution is coordinated.

Procedures are detailed in Chapter 5 for SAR operations involving two or more RCCs, for authorities in

the field and for terminating or suspending SAR operations. Other procedures deal with actions to be taken at the scene of an accident and by a pilot-in-command intercepting a distress transmission.
An Appendix to the Annex provides three sets of signals, the first of which are signals for use by aircraft and surface craft during the conduct of a SAR operation. The second and third sets consist of ground-to-air visual signals for use by survivor and ground rescue units.

ANNEX 13

to the Convention on International Civil Aviation
Aircraft Accident and Incident Investigation

The causes of an aircraft accident or serious incident must be identified in order to prevent repeated occurrences. The identification of causal factors is best accomplished through a properly conducted investigation. To emphasise this point, Annex 13 states that the objective of the investigation of an accident or incident is prevention.
Annex 13 provides the international requirements for the investigation of aircraft accidents and incidents. It has been written in a way that can be understood by all participants in an investigation. As such, it serves as a reference document for people around the world who may be called on, often without any lead time, to deal with the many aspects involved in the investigation of an aircraft accident or serious incident. As an example, the Annex spells out which States may participate in an investigation, such as the States of Occurrence, Registry, Operator, Design and Manufacture. It also defines the rights and responsibilities of such States.
The ninth edition of Annex 13 consists of eight chapters, an appendix and four attachments. The first three chapters cover definitions, applicability and general information. Chapter 3 includes the protection of evidence and the responsibility of the State of Occurrence for the custody and removal of the aircraft. It also defines how that State must handle requests for participation in the investigation from other States.
All States that may be involved in an investigation must be promptly notified of the occurrence. Procedures for this notification process are contained in Chapter 4. The same chapter outlines the responsibilities for conducting an investigation depending on the location of the occurrence, eg. in the territory of an ICAO Contracting State, in the territory of a non-contracting State, or outside the territory of any ICAO State. Following the formal notification of the investigation to the appropriate authorities, Chapter 5 addresses the investigation process.
Responsibility for an investigation belongs to the State in which the accident or incident occurred. That State usually conducts the investigation, but it may delegate all or part of the investigation to another State. If the occurrence takes place outside the territory of any State, the State of Registry has the responsibility to conduct the investigation.

States of Registry, Operator, Design and Manufacture who participate in an investigation are entitled to appoint an accredited representative to take part in the investigation. Advisers may also be appointed to assist accredited representatives. The State conducting the investigation may call on the best technical expertise available from any source to assist with the investigation.

The investigation process includes the gathering, recording and analysis of all relevant information; the determination of the causes; formulating appropriate safety recommendations and the completion of the final report.

Chapter 5 also includes provisions regarding: the investigator-in-charge, flight recorders, autopsy examinations, coordination with judicial authorities, informing aviation security authorities, disclosure of records, and re-opening of an investigation. States whose citizens have suffered fatalities in an accident are also entitled to appoint an expert to participate in the investigation.

Chapter 6 contains the Standards and recommended practices dealing with the development and publication of the final report of an investigation. The recommended format for the final report is contained in an Appendix to the Annex.

Computerized databases greatly facilitate the storing and analysing of information on accidents and incidents. The sharing of such safety information is regarded as vital to accident prevention. ICAO operates a computerized database known as the Accident/Incident Data Reporting (ADREP) system, which facilitates the exchange of safety information among Contracting States. Chapter 7 of Annex 13 addresses the reporting requirements of the ADREP system which is by means of Preliminary and Accident/Incident Data Reports.

Chapter 8 of Annex 13 deals with accident prevention measures. The provisions in this chapter cover incident reporting systems, both mandatory and voluntary, and the necessity for a non-punitive environment for the voluntary reporting of safety hazards. This chapter then addresses database systems and a means to analyse the safety data contained in such databases in order to determine any preventive actions required. Finally, it recommends that States promote the establishment of safety information sharing networks to facilitate the free exchange of information on actual and potential safety deficiencies. The processes outlined in this chapter form part of a safety management system aimed at reducing the number of accidents and serious incidents worldwide.

ANNEX 14

to the Convention on International Civil Aviation

Aerodromes (Volumes I and II)

A distinction of Annex 14 is the broad range of subjects it contains. It extends from the planning of airports and heliports to such details as switch-over times for secondary power supply; from civil engineering to illumination engineering; from provision of sophisticated rescue and fire fighting

equipment to simple requirements for keeping airports clear of birds. The impact of these numerous subjects on the Annex is compounded by the rapidly changing industry which airports must support. New aircraft models, increased aircraft operations, operations in lower visibilities and technological advances in airport equipment combine to make Annex 14 one of the most rapidly changing Annexes. In 1990, after 39 amendments the Annex was split into two volumes, Volume I dealing with aerodrome design and operations and Volume II dealing with heliport design.

Annex 14, Volume I, is also unique: it is applicable to all airports open to public use in accordance with the requirements of Article 15 of the Convention. Historically, it came to life in 1951 with 61 pages of Standards and Recommended Practices and 13 additional pages on guidance for their implementation. That edition included specifications for water aerodromes and aerodromes without runways; specifications that no longer appear. Today over 180 pages of specifications and additional pages of guidance material set forth the requirements for international airports around the world.

The contents of Volume I reflect, to varying extents, the planning and design, as well as operation and maintenance, of aerodromes.

The heart of the airport is the vast movement area extending from the runway, along the taxiways and onto the apron. Today s large modern aircraft require a more exacting design of these facilities. Specifications on their physical characteristics, i.e. width, surface slope and separation distances from other facilities, form a principal part of this Annex. Specifications for new facilities, unheard of at the beginning of ICAO, such as runway end safety areas, clearways and stopways, are all set forth. These facilities are the building blocks for airports which define its over-all shape and size and permit engineers to lay out the skeleton that forms the airport s basic structure.

Along with defining the ground environment of an airport, specifications are also required to define its airspace requirements. Airports must have airspace free from obstacles in order for aircraft to approach and depart safely from the airport. It is also important that the volume of this space be defined so that it may be protected to ensure the continued growth and existence of the airport or, as stated in the Annex, ". . . to prevent the aerodromes from becoming unusable by the growth of obstacles . . . by establishing a series of obstacle limitation surfaces that define the limits to which objects may project into the airspace". The requirements to provide a particular obstacle limitation surface and the dimensions of the surfaces are classified in the Annex by runway type. Six different types of runway are recognized: non-instrument approach runways, non-precision approach runways, precision approach runways categories I, II and III, and takeoff runways.

A striking feature of airports at night are the hundreds, sometimes thousands of lights used to guide and control aircraft movements. In contrast to flight, where guidance and control are done through radio aids, movements on the ground are primarily guided and controlled through visual aids. Annex 14, Volume I,

defines in detail numerous systems for use under various types of meteorological conditions and other circumstances.

As these visual aids must be immediately understandable by pilots from all over the world, standardization of their location and light characteristics is highly important. Recent advances in lighting technology have led to great increases in the intensity of lights. Also in recent years, the development of small light sources has facilitated the installation of lights in the surface of pavements that can be run over by aircraft. Modern high intensity lights are effective for both day and night operations and, in some day conditions, simple markings may be highly effective. Their uses are defined in the Annex as well. Airport signs are a third type of visual aid. At large airports and airports with heavy traffic it is important that guidance be provided to pilots to permit them to find their way about the movement area.

The objective of most specifications is to improve the safety of aviation. One section of Annex 14, Volume I, is devoted to improving the safety of equipment installed at airports. Particularly noteworthy are specifications concerning the construction and siting of equipment near runways. This is to reduce the hazard such equipment might pose to aircraft operations. Requirements for secondary power supply are also specified, along with the characteristics of light circuit design and the need to monitor the operation of visual aids.

In recent years more attention has been given to the operation of airports. The current edition of Annex 14, Volume I, includes specifications on maintenance of airports. Particular emphasis is given to pavement areas and visual aids. Attention is also given to eliminating features of airports which may be attractive to birds that endanger aircraft operation.

Of critical importance to the operation of any airport is the rescue and fire fighting service which, according to Annex 14, all international airports are required to have. The Annex sets forth the agents to be used, their amounts and the time limits in which they must be delivered to the scene of an aircraft accident.

To take off and land safely and routinely todayâ€™s aircraft require accurate information on the condition of facilities at airports. Annex 14, Volume I, sets forth: what information is to be provided; how it is to be determined; how it is to be reported; and to whom it is to be reported. (Specifications for the transmittal of this information through AIPs and NOTAMs are set out in Annex 15 â€” Aeronautical Information Services.) Typical of the type of information to be reported are elevation of different parts of the airport, strength of pavements, condition of runway surfaces and the level of airport rescue and fire fighting services.

Provisions for heliports are included in Volume II of Annex 14. These specifications complement those in Volume I which, in some cases, are also applicable to heliports. The provisions address the physical characteristics and obstacle limitation surfaces required for helicopter operations from surface level and

elevated on-shore heliports and helidecks, under both visual and instrument meteorological conditions. Material dealing with the marking and lighting of heliports, as well as rescue and fire fighting requirements for heliports, also have been included in Volume II. Although specifications on marking and lighting of heliports are only applicable to operations in visual meteorological conditions, work is under way on the development of appropriate visual aids for helicopter operations in instrument meteorological conditions.

ANNEX 15

to the Convention on International Civil Aviation

Aeronautical Information Services

One of the least known and most vital roles in support of international civil aviation is filled by the aeronautical information service (AIS). The object of the aeronautical information service is to ensure the flow of information necessary for the safety, regularity and efficiency of international air navigation. Annex 15 defines how an aeronautical information service shall receive and/or originate, collate or assemble, edit, format, publish/store and distribute specified aeronautical information/data. The goal is to satisfy the need for uniformity and consistency in the provision of aeronautical information/data that is required for the operational use by international civil aviation.

The ICAO Council first adopted the original Standards and Recommended Practices in 1953. Annex 15 has its origins in Article 37 of the Chicago Convention. The first requirements for the Annex were developed by the ICAO Air Navigation Committee (now the Air Navigation Commission), following recommendations from regional air navigation meetings, and were published by the authority of the Council as Procedures for International Notices to Airmen back in 1947.

"International notices to airmen" is a phrase which led to the birth of an early aeronautical acronym: NOTAM. In 1949, a special NOTAM meeting reviewed and proposed amendments to these procedures, which were later issued as Procedures for Air Navigation Services that became applicable in 1951. A total of 33 amendments updated Annex 15 over the years to meet the rapid changes brought about by air travel and associated information technology. In recent years, Annex 15 amendments have reflected the increased need for the timely provision of quality aeronautical information/data and terrain data as they have become critical components of data-dependant on-board navigation systems. The Annex now contains many provisions aimed at preventing corrupt or erroneous aeronautical information/data which can potentially affect the safety of air navigation.

The operator of any type of aircraft, be it small private aircraft or large transport aircraft, must have available a variety of information concerning the air navigation facilities and services that may be expected to be used. For example, the operator must know the regulations concerning entry into and transit of the airspace of each State in which operations will be carried out, as well as what aerodromes,

heliports, navigation aids, meteorological services, communication services and air traffic services are available and the procedures and regulations associated with them. The operator must also be informed, often on very short notice, of any change affecting the operation of these facilities and services and must know of any airspace restrictions or hazards likely to affect flights. While this information can nearly always be provided before take-off, it must, in some instances, be provided during flight.

The philosophy underlying Annex 15, which stems from Article 28 of the Convention on International Civil Aviation, is that each State is responsible for making available to civil aviation interests any and all information which is pertinent to and required for the operation of aircraft engaged in international civil aviation within its territory, as well as in areas outside its territory in which the State has air traffic control or other responsibilities.

The information handled by an AIS may vary widely in terms of the duration of its applicability. For example, information related to airports and its facilities may remain valid for many years while changes in the availability of those facilities (for instance, due to construction or repair) will only be valid for a relatively short period of time. Information may be valid for as short a time as days or hours.

The urgency attached to information may also vary, as well as the extent of its applicability in terms of the number of operators or types of operations affected. Information may be lengthy or concise or include graphics.

Therefore, aeronautical information is handled differently depending on its urgency, operational significance, scope, volume and the length of time it will remain valid and relevant to users. Annex 15 specifies that aeronautical information be published as an integrated aeronautical information package. It is composed of the following elements: the Aeronautical Information Publication (AIP), including amendment service, AIP supplements, NOTAM, pre-flight information bulletins (PIB), aeronautical information circulars (AIC), checklists and lists of valid NOTAM. Each element is used to distribute specific types of aeronautical information.

Information concerning changes in facilities, services or procedures, in most cases, requires amendments to be made to airline operations manuals or other documents and databases produced by various aviation agencies. The organizations responsible for maintaining these publications usually work to a pre-arranged production programme. If aeronautical information were published indiscriminately with a variety of effective dates, it would be impossible to keep the manuals and other documents and databases up to date. Since many of the changes to facilities, services and procedures can be anticipated, Annex 15 provides for the use of a regulated system, termed AIRAC (aeronautical information regulation and control), which requires significant changes to become effective and information to be distributed in accordance with a predetermined schedule of effective dates, unless operational considerations make it impracticable.

Annex 15 also specifies that pre-flight information must be made available at each aerodrome/heliport normally used for international operations and sets the content of aeronautical information provided for pre-flight planning purposes as well as requirements for the provision of that information through automated aeronautical information systems. Additionally, there are requirements to ensure that important post-flight information provided by aircrews (for example, the presence of a bird hazard) are relayed to the AIS for distribution as the circumstances necessitate.

The need, role and importance of aeronautical information/data have changed significantly with the evolution of the Communications, Navigation and Surveillance/Air Traffic Management (CNS/ATM) systems. The implementation of area navigation (RNAV), required navigation performance (RNP) and airborne computer-based navigation systems has brought about exacting requirements for the quality (accuracy, resolution and integrity) of aeronautical information/data and terrain data .

The usersâ€™ dependence on the quality of certain aeronautical information/data is evident from Annex 15, paragraph 3.2.8 a) which, when describing critical data, states: "There is a high probability when using corrupted critical data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe".

Since corrupt or erroneous aeronautical information/data can potentially affect the safety of air navigation because of the direct dependence upon it by both airborne and ground-based systems, it is imperative that each State ensure that users (aviation industry, air traffic services, etc.) receive timely and quality aeronautical information/data for the period of its intended use.

To achieve this, and to demonstrate to users the required information/data quality, Annex 15 provides that States must establish a quality system and put in place quality management procedures at all stages (receiving and/or originating, collating or assembling, editing, formatting, publishing, storing and distributing) of the aeronautical information/data process. The quality system must be documented and demonstrable for each function stage, ensuring that the organizational structure, procedures, processes and resources are in place in order to detect and remedy any information/data anomalies during the phases of production, maintenance and operational use. Explicit in such a quality management regime is the ability to trace all information/data from any point, back through the proceeding processes, to its origin.

Of all the activities in international civil aviation, the provision and sustaining of aeronautical information services may not rank among the most glamourous and indeed the complexity of AIS information supplying data-dependant on-board navigation systems may be transparent to the user, but without this service a pilot would be flying into the unknown.

ANNEX 16

to the Convention on International Civil Aviation

Environmental Protection (Volumes I and II)

Annex 16 (Volumes I and II) deals with the protection of the environment from the effect of aircraft noise and aircraft engine emissions - two topics hardly thought about when the Chicago Convention was signed.

Aircraft noise was already of concern during the formative years of ICAO, but it was then limited to the noise caused by propellers whose tips rotated at speeds approaching that of sound. This concern increased with the introduction of the first generation jet aeroplanes in the early 1960s and accelerated with the growth in the number of jet aircraft in international operations.

Aircraft noise is a function, among other things, of the power of the engines that propel aeroplanes through the atmosphere. Reduce the power and you reduce noise, but at the same time you may affect the safety characteristics of the jet aircraft.

In 1968, the ICAO Assembly adopted a resolution which conceded the seriousness of noise in the vicinity of airports, and instructed the ICAO Council to establish international specifications and associated guidance material to control aircraft noise. In 1971, the Assembly adopted another resolution recognizing the adverse environmental impact that may be related to aircraft activity. This resolution placed on ICAO the responsibility to guide the development of international civil aviation in such a manner as to benefit the people of the world and to achieve maximum compatibility between the safe and orderly development of civil aviation and the quality of the human environment.

Annex 16 dealing with various aspects of aircraft noise problems was adopted in 1971 on the basis of recommendations of the 1969 Special Meeting on Aircraft Noise in the Vicinity of Aerodromes. These aspects included: procedures for describing and measuring aircraft noise; human tolerance to aircraft noise; aircraft noise certification; criteria for establishment of aircraft noise abatement procedures; land use control; and ground run-up noise abatement procedures.

Shortly after this meeting, the Committee on Aircraft Noise (CAN) was established to assist ICAO in the development of noise certification requirements for different classes of aircraft.

The first meeting of this committee developed the first amendment to Annex 16, which became applicable in 1973 and included noise certification of future production and derived versions of subsonic jet aeroplanes.

During subsequent meetings, the Committee on Aircraft Noise developed noise certification standards for future subsonic jet aeroplanes and propeller-driven aeroplanes, and for future production of existing supersonic transport aeroplane types and helicopters. It also developed guidelines for noise certification of future supersonic and propellerdriven STOL (short take-off and landing) aeroplanes as well as installed APUs (auxiliary power-units) and associated aircraft systems when operating on the ground.

A resolution adopted by the ICAO Assembly in 1971 led to specific action on the question of engine

emissions and detailed proposals for ICAO Standards for the control of engine emissions from certain types of aircraft engines. The Committee on Aircraft Engine Emissions (CAEE) was subsequently established with a view to develop specific Standards for aircraft engine emissions.

These Standards, adopted in 1981, set limits for the emission of smoke and certain gaseous pollutants for large turbo-jet and turbofan engines to be produced in the future; they also prohibit the venting of raw fuels. The scope of the existing Annex 16 was widened to include engine emission provisions and the document was retitled Environmental Protection. Volume I of the reorganized Annex 16 contains provisions related to aircraft noise while Volume II contains provisions related to aircraft engine emissions.

In Volume I, different aircraft classifications form the basis of noise certification. These classifications include subsonic jet aeroplanes for which application for the certification of the prototype was accepted before 6 October 1977; for those accepted on or after that date; for propeller-driven aeroplanes over 5 700 kg; for those not exceeding this mass; for supersonic aeroplanes for which application for certification of the prototype was accepted before 1 January 1975; and for helicopters for which the application for certification of the prototype was accepted on or after 1 January 1980.

For each classification of aircraft type, a noise evaluation measure has been standardized. Except for propeller-driven aeroplanes not exceeding 5 700 kg maximum certificated take-off mass, the noise evaluation measure is the effective perceived noise level, expressed in EPNdB. The EPNdB is a single number indicator of the subjective effects of aircraft noise on people, taking into account the instantaneous perceived noise level and duration.

Various measurement points, maximum noise levels at lateral, approach and flyover noise measurement points, along with flight test procedures, have been designated for these types of aircraft.

Noise certification is granted by the State of Registry of an aircraft on the basis of satisfactory evidence that the aircraft complies with the requirements which are at least equal to the applicable Standards set out in this Annex.

In Volume II of Annex 16, there are Standards which prohibit the intentional venting of raw fuel to the atmosphere from all turbine engine powered aircraft manufactured after 18 February 1982.

There are also Standards which limit the emission of smoke from turbo-jet and turbofan engines intended for propulsion at subsonic speeds and manufactured after 1 January 1983. For engines intended for supersonic propulsion, similar limitations apply to engines manufactured after 18 February 1982.

Also included are Standards which limit the emission of carbon monoxide, unburned hydrocarbons and oxides of nitrogen from large turbo-jet and turbofan engines intended for subsonic propulsion and manufactured after 1 January 1986. These Standards are based on an aircraftâ€™s landing and take-off (LTO) cycle. In addition to these Standards, Volume II contains detailed measurement procedures and

instrument specifications and details the statistical methods to be used in assessing test results.
In 1983, the CAN and CAEE committees were amalgamated to form the Committee on Aviation Environment Protection (CAEP), as a Technical Committee of the ICAO Council. Since its establishment, CAEP has further developed the Standards in Annex 16 for both aircraft noise and aircraft engine emissions.
Concerning aircraft noise, on the basis of recommendations by CAEP, the Council of ICAO in 2001 adopted a new Chapter 4 noise standard, more stringent than that contained in Chapter 3. Commencing on 1 January 2006, the new standard will apply to newly certificated aeroplanes and to Chapter 3 aeroplanes for which re-certification to Chapter 4 is requested.
This new Standard was adopted at about the same time as the ICAO Assembly endorsed the concept of a "balanced approach to noise management" developed by CAEP that is comprised of four elements, namely reduction of noise at source, land-use planning, operational measures, and operation restrictions. For further details, see the Consolidated statement of continuing ICAO policies and practices related to environmental protection.
Concerning aircraft engine emissions, there has been a change in the focus of the Organizationâ€™s work. While it was initially based on concerns regarding air quality in the vicinity of airports, in the 1990s it was expanded to include global atmospheric problems to which aircraft engine emissions contribute, such as climate change. As a result, consideration is being given to further development of the ICAO emissions Standards to take account of emissions not only in the LTO cycle, but also during the cruise phase of operations.
In both 1993 and 1999, on the basis of CAEP recommendations, the Council of ICAO adopted more stringent Standards defining the emission limits for oxides of nitrogen. At the time of writing, a third revision of these limits was under consideration by the Council.
Environmental protection has become one of the biggest challenges to civil aviation in the twenty-first century. Since it was first adopted, Annex 16 has been further developed to meet new environmental concerns and to accommodate new technology. The Organization will continue to keep the Annex under review, consistent with its aim of achieving maximum compatibility between the safe and orderly development of civil aviation and the quality of the environment.

Annex 17

to the Convention on International Civil Aviation
Security - Safeguarding International Civil Aviation against Acts of Unlawful Interference
The dramatic increase in crimes of violence which adversely affected the safety of civil aviation during the late 1960 s, resulted in an Extraordinary Session of the ICAO Assembly in June 1970. One of the resolutions of that Assembly called for specifications in existing or new Annexes to the Chicago

Convention to specifically deal with the problem of unlawful interference, in particular with unlawful seizure of aircraft. Following the work of the Air Navigation Commission, the Air Transport Committee, and the Committee on Unlawful Interference, Standards and Recommended Practices on Security were adopted by the Council on 22 March 1974 and designated as Annex 17 â€“ Security. This Annex sets out the basis for the ICAO civil aviation security programme and seeks to safeguard civil aviation and its facilities against acts of unlawful interference. Of critical importance to the future of civil aviation and to the international community at large are the measures taken by ICAO to prevent and suppress all acts of unlawful interference against civil aviation throughout the world.

Annex 17 is primarily concerned with administrative and co-ordination aspects, as well as with technical measures for the protection of the security of international air transport, requiring each Contracting State to establish its own civil aviation security programme with such additional security measures as may be proposed by other appropriate bodies.

Annex 17 also seeks to co-ordinate the activities of those involved in security programmes. It is recognized that airline operators themselves have a primary responsibility for protecting their passengers, assets and revenues, and therefore States must ensure that the carriers develop and implement effective complementary security programmes compatible with those of the airports out of which they operate.

Some of the specifications in Annex 17 and the other Annexes recognize that it is not possible to achieve absolute security. States must ensure, nevertheless, that the safety of passengers, crew, ground personnel and the general public is a primary consideration in the safeguarding action which they initiate. States are also urged to adopt measures for the safety of the passengers and crew of unlawfully diverted aircraft until their journey can be continued.

The Annex is maintained under constant review to ensure that the specifications are current and effective. Because this document sets minimum standards for aviation security worldwide, it is subjected to careful scrutiny before undergoing any changes, additions or deletions. Since its publication, Annex 17 has been amended ten times in response to needs identified by States and is kept under review by the Aviation Security (AVSEC) Panel. This group of experts appointed by the Council includes representatives from Argentina, Australia, Belgium, Brazil, Canada, Ethiopia, France, Germany, Greece, India, Italy, Japan, Jordan, Mexico, Nigeria, the Russian Federation, Senegal, Spain, Switzerland, the United Kingdom and the United States, as well as international organizations such as the Airports Council International (ACI), the International Air Transport Association (IATA), the International Federation of Airlines Pilots Association (IFALPA) and the International Criminal Police Organization (ICPO-INTERPOL).

Prior to 1985, the significant threat to civil aviation was seen as the hijacking. As a result, the Standards

and Recommended Practices tended to focus on hijacking rather than sabotage, in-flight attack or facility attack. By modifying existing technology and applying agreed upon specifications and procedures, the worldwide aviation community established a reasonably effective screening system for passengers and their carry-on luggage.

Following the three-year cycle for Annex amendments, additional changes to Annex 17 were developed in 1988 which included specifications to further assist in fighting sabotage.

Some of the changes included in Amendment 7 to Annex 17 adopted in June 1989, provide for a further clarification of the Standards dealing with reconciliation of baggage with passengers, controls over items left behind on the aircraft by disembarking passengers, security controls for commercial courier services and controls over cargo and mail under certain situations.

The latest Amendment 10 to Annex 17 was adopted by the ICAO Council on 7 December 2001 in order to address challenges posed to civil aviation by the events of 11 September 2001. It became applicable on 1 July 2002. The amendment includes various definitions and new provisions in relation to the applicability of this Annex to domestic operations; international cooperation relating to threat information; national quality control; access control; measures related to passengers and their cabin and hold baggage; inflight security personnel and protection of the cockpit; code-sharing/collaborative arrangements; human factors; and management of response to acts of unlawful interference.

The Attachment to Annex 17 provides officials of States responsible for implementing national programmes with a verbatim extract of all relevant specifications appearing in the other Annexes as well as the related procedures appearing in the PANS documents (Procedures for Air Navigation Services - Rules of the Air and Air Traffic Services, and Procedures for Air Navigation Services -Aircraft Operations). This material provides officials with a summary of all security-related Standards, Recommended Practices and procedures in a single document.

The aviation security specifications in Annex 17 and the other Annexes are amplified by detailed guidance material contained in the Security Manual for Safeguarding Civil Aviation Against Acts of Unlawful Interference which was first published in 1971. This restricted document provides details of how States can comply with the various Standards and Recommended Practices contained in Annex 17. The Manual has since been developed for the purpose of assisting States to promote safety and security in civil aviation through the development of the legal framework, practices, procedures and material, technical and human resources to prevent and, where necessary, respond to acts of unlawful interference. The very existence of these documents highlights the intensive vigilance that the Contracting States of ICAO maintain to preserve the safety of international civil aviation from a threat which is non-operational in character or origin.

Although ICAO deals primarily in multilateral arrangements to establish an international framework,

much has been done to encourage States to assist each other on a bilateral basis. Annex 17 encourages States to have a security clause in their air transport agreements and a model clause has been made available.

Commencing in late 2002, ICAO s Universal Security Audit Programme is auditing the implementation of Annex 17 provisions by Contracting States. In addition to helping States improve their aviation security systems by identifying deficiencies and providing suitable recommendations, the audits are expected to provide useful feedback concerning the provisions in Annex 17.

ICAO and its Council continue to treat the subject of aviation security as a matter of the highest priority. However, acts of unlawful interference continue to pose a serious threat to the safety and regularity of civil aviation. The Organization has developed and continues to update legal and technical regulations and procedures to prevent and suppress acts of unlawful interference. Since Annex 17 is the principal document giving direction on the establishment of security measures, its uniform and consistent application is paramount if the aviation security system is to be successful.

ANNEX 18

to the Convention on International Civil Aviation

The Safe Transport of Dangerous Goods by Air

More than half of the cargo carried by all modes of transport in the world is dangerous cargo â€“ explosive, corrosive, flammable, toxic and even radioactive. These dangerous goods are essential for a wide variety of global industrial, commercial, medical and research requirements and processes. Because of the advantages of air transport, a great deal of this dangerous cargo is carried by aircraft. ICAO recognizes the importance of this type of cargo and has taken steps to ensure that such cargo can be carried safely. This has been done by adopting Annex 18, together with the associated document Technical Instructions for the Safe Transport of Dangerous Goods by Air. Other codes have existed for regulating the carriage of dangerous goods by air, but these did not apply internationally or were difficult to enforce internationally and, moreover, were not compatible with the corresponding rules of other transport modes.

Annex 18 specifies the broad Standards and Recommended Practices to be followed to enable dangerous goods to be carried safely. The Annex contains fairly stable material requiring only infrequent amendment using the normal Annex amendment process. The Annex also makes binding upon Contracting States the provisions of the Technical Instructions, which contain the very detailed and numerous instructions necessary for the correct handling of dangerous cargo. These require frequent updating as developments occur in the chemical, manufacturing and packaging industries, and a special procedure has been established by the Council to allow the Technical Instructions to be revised and reissued regularly to keep up with new products and advances in technology.

The ICAO requirements for dangerous goods have been largely developed by a panel of experts which was established in 1976. This panel continues to meet and recommends the necessary revisions to the Technical Instructions. As far as possible the Technical Instructions are kept aligned with the recommendations of the United Nations Committee of Experts on the Transport of Dangerous Goods and with the regulations of the International Atomic Energy Agency. The use of these common bases by all forms of transport allows cargo to be transferred safely and smoothly between air, sea, rail and road modes.

The ICAO requirements for the safe handling of dangerous goods firstly identify a limited list of those substances which are unsafe to carry in any circumstances and then show how other potentially dangerous articles or substances can be transported safely.

The nine hazard classes are those determined by the United Nations Committee of Experts and are used for all modes of transport. Class 1 includes explosives of all kinds, such as sporting ammunition, fireworks and signal flares. Class 2 comprises compressed or liquefied gases which may also be toxic or flammable; examples are cylinders of oxygen and refrigerated liquid nitrogen. Class 3 substances are flammable liquids including gasoline, lacquers, paint thinners, etc. Class 4 covers flammable solids, spontaneously combustible materials and materials which, when in contact with water, exit flammable gases (examples are some powdered metals, cellulose type film and charcoal). Class 5 covers oxidizing material, including bromates, chlorates or nitrates; this class also covers organic peroxides which are both oxygen carriers and very combustible. Poisonous or toxic substances, such as pesticides, mercury compounds, etc., comprise Class 6, together with infectious substances which must sometimes be shipped for diagnostic or preventative purposes. Radioactive materials are in Class 7; these are mainly radioactive isotopes needed for medical or research purposes but are sometimes contained in manufactured articles such as heart pacemakers or smoke detectors. Corrosive substances which may be dangerous to human tissue or which pose a hazard to the structure of an aircraft are dealt with in Class 8 (for example, caustic soda, battery fluid, paint remover). Finally, Class 9 is a miscellaneous category for other materials which are potentially hazardous in air transport, such as magnetized materials which could affect the aircraft s navigational systems.

Annex 18 and the Technical Instructions became effective on 1 January 1983 and applicable on I January 1984 when all of the Contracting States of ICAO were expected to conform to the ICAO requirements and to give them legislative recognition.

SIGNATURE OF CONVENTION

IN WITNESS WHEREOF, the undersigned plenipotentiaries, having been duly authorized, sign this

Convention on behalf of their respective governments on the dates appearing opposite their signatures. DONE at Chicago the seventh day of December 1944, in the English language. A text drawn up in the English, French and Spanish languages, each of which shall be of equal authenticity, shall be open for signature at Washington, D.C. Both texts shall be deposited in the archives of the Government of the United States of America, and certified copies shall be transmitted by that Government to the governments of all the States which may sign or adhere to this Convention.