

International civil
aviation organisation
icao engineering
essay



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The term aviation means the art or science of flying. In the earlier centuries, developments in the field of aviation technology were minimal. In fact, after the 1900s, the developments in aviation technology took a new turn and dimension. As a result of this, each new phase in aviation development was rather short-lived as inventions lined up rapidly and created newer phases.

In India, the aviation industry is rapidly growing with the private airlines owning more than 75 percent of the domestic market.

Aviation Laws

A conference was held at Chicago (Chicago Convention) in 1944 with 54 nations participating in it. The main objective of this conference was to make arrangements for the immediate establishment of provisional world air routes. This convention established the International Civil Aviation Organisation (ICAO), a specialised agency of the United Nations charged with coordinating and regulating international air travel.

Due to the nature of travel, an aviation law is considered as a matter of international law. In the United States, the Federal Aviation Administration (FAA) rules the applied aspects of the flight. Whereas in the international domain it is the ICAO that provides general rules regarding the aviation law.

The basic principles of the international air law are:

Territorial sovereignty: Every State has the right to permit or deny entry into its territory. It also has the rights to control all the movements within the territory.

National airspace: The territory of a sovereign State is three dimensional. It includes the airspace above its national lands, its internal and territorial waters.

Freedom of the seas: It is free to navigate on the surface of the high seas.

Nationality of aircraft: Aircraft have the characteristic of nationality.

Articles

The Chicago Conventions contain many articles that state the various rules and regulations. Some of them are:

Article 1: Every state has complete and exclusive sovereignty over airspace above its territory.

International Civil Aviation Organisation ICAO

ICAO nurtures the planning and development of international air transport to ensure safe and orderly growth. It adopts standards and practices regarding:

Air navigation

Infrastructure

Flight inspection

Prevention of illegal interference

Assistance of border-crossing procedures for international civil aviation

The main objective of ICAO is to regulate civil aviation matters throughout the world. It includes nationality registration of aircraft, documentation

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certification, standardisation of procedures, financial, technical and statistical services and lastly the freedoms of the air.

The ICAO functions through 18 annexes covering different areas in the International Air transport business.

Annex 1 - Personnel Licensing

This annex provides standards and recommended practices for the licensing of flight crew members such as pilots, flight navigators and flight engineers. It also provides standards for air traffic controllers, aeronautical station operators, maintenance technicians and flight dispatchers.

Annex 2 - Rules of the Air

A set of internally agreed rules of air makes air travel safe and efficient. This annex contains visual flight rules (VFR) and instrument flight rules (IFR) developed by ICAO. These rules can be applied without exception over the high seas and national territories to the extent that they do not conflict with the rules of the State being overflown. The aircraft pilot is responsible for compliance with these rules.

Annex 3 - Meteorological Service for International Air Navigation

While flying pilots need to be regularly updated about the meteorological conditions. This annex outlines the meteorological services in order to contribute 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.

Annex 4 - Aeronautical Charts

Maps or charts play an important role in the field of aviation. Charts are used as a navigational aid for the safe performance of air operations. The aeronautical charts provide a convenient medium for supplying this information in a manageable, condensed and coordinated manner.

Annex 5 - Units of Measurement to be Used in Air and Ground Operations

This annex speaks about the units used in communication between the aircraft and the ground stations. It contains an ICAO table of units essentially based on the metric system. It also contains four additional interim tables of units for use by those States unable to use the primary table.

Annex 6 - Operation of Aircraft

To ensure highest levels of safety and efficiency in international air transport all the operations should be standardised. The purpose of this annex is to provide criteria for safe operating practices in order to have safe international air navigation. It also encourages 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.

Annex 7 - Aircraft Nationality and Registration Marks

This annex deals with an aircraft's nationality and registration marks. It also classifies aircraft based on for how long they can maintain sustained flight in the air.

Annex 8 - Airworthiness of Aircraft

An aircraft should be designed, constructed and operated keeping in mind the requirements of the State of Registry of the aircraft. Every aircraft fit to fly is issued with a Certificate of Airworthiness.

This annex contains standards 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.

Annex 9 - Facilitation

The Chicago Convention derives several provisions for the Standards and Recommended Practices (SARPs) on Facilitation (FAL).

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. It provides reference for planners and managers of international airport operations, describing maximum limits on obligations of industry and minimum facilities to be provided by governments.

Annex 10 - Aeronautical Telecommunications

This annex covers the aeronautical communications, navigation and surveillance elements of International Civil Aviation.

Annex 11 - Air Traffic Services

This annex defines the air traffic services and specifies the worldwide standards and recommended practices applicable in the provision of these services.

Annex 12 - Search and Rescue

This Annex provides a set of internationally agreed Standards and Recommended Practices to rapidly locate and rescue survivors of aircraft accidents.

Annex 13 - Aircraft Accident and Incident Investigation

Detection of the cause of an aircraft accident or serious incident is a must in order to prevent repeated occurrences. A properly conducted investigation helps to identify the causal factor. This annex states that the main objective of the investigation of an accident or incident is prevention. It provides international requirements for the investigation of aircraft accidents and incidents, which are written in a simple format so that it can be understood by all participants in an investigation.

Annex 14 - Aerodromes

This annex extends from planning of airports and helicopters to details of 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. This annex changes rapidly due to the introduction of new aircraft models, increased aircraft

operations, operations in lower visibilities and technological advances in airport equipment.

Annex 15 - Aeronautical Information Services

The Aeronautical Information Service (AIS) plays an important role in supporting the International Civil Aviation. The main objective of the AIS is to ensure the flow of information necessary for the safety, regularity and efficiency of international air navigation.

This annex 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.

Annex 16 - Environmental Protection

This annex deals with the protection of the environment from the effect of aircraft noise and aircraft engine emission.

Annex 17 - Security

This annex speaks about the ICAO civil aviation security programme and seeks to safeguard civil aviation and its facilities against acts of unlawful interference. The annex is primarily concerned with the administrative and coordination aspects, as well as with technical measures for the protection of the security of international air transport. It also seeks to coordinate the activities of those involved in security programmes.

Annex 18 - The Safe Transport of Dangerous Goods by Air

This annex specifies the standards and recommended practices to be followed for the transportation of dangerous goods. Dangerous cargo that may be explosive, corrosive, flammable, toxic and even radioactive is transported world wide for a variety of industrial, commercial, medical and research requirements and processes. ICAO recognises the importance of this type of cargo and has taken steps to ensure that such cargo is carried safely.