Chapter Two

Aviation Safety and Security
This chapter is divided into two parts, part I deals with problems of air safety and security and part II deals with the legal regime related to aviation safety and security

**PART I - PROBLEMS**

I. Problems Relating To Aviation Safety And Security

"Aviation in itself is not inherently dangerous. But to even greater degree than the sea, it is terribly unforgiving of any carelessness, incapability or neglect." - Anonymous

Foremost among the chief priorities for aviation administrations and airlines is the safety and security of passengers, general public, ground personnel and property. Indeed, the improvements in technology, which restored safety to modern aircraft, have also contributed to a great risk of loss to passengers as evident in a number of disasters in recent years. Fundamentally, governments cannot divest themselves of the responsibility to ensure an optimum level of safety, security and efficiency in civil aviation. Casualties have remained high due to the total destruction of aircraft in flight. Safety and security assurances are absolutely necessary if international tourism and the airline industry are to thrive.

The objective of this chapter is to highlight the various difficulties in regulating air safety and security and the measures taken by international organizations, particularly the ICAO, in this direction. This chapter will study the causes of aircraft accidents, their
investigation, liability issues involved in air disasters and evolution of security law through various international conventions.

Air safety is of paramount importance in air transport. The aircraft designer, the manufacturer, the operator and government (controlling authority) - all strive to achieve greater air safety. The phrase "air safety" generally connotes the minimisation of dangers, risks and hazards during aircraft operation, bearing chiefly on safety standards established by aviation technology and the competence of personnel involved in aircraft operation. In other words, air safety presupposes precautions against accidents of any kind, either by preventing their recurrence or by trying to minimize their effect. A set of internationally agreed standards, rules and regulations has been developed by the ICAO, through its Annexes, to achieve an optimum level of air safety. Most Annexes aim to maintain and improve safety cover. A wide range of factors—personnel licensing, airworthiness of aircraft, standardization of aircraft operations, air traffic services, aeronautical information and telecommunication services, meteorological services and airport security -- collectively ensure the highest degree of air safety on a worldwide basis.¹

Aviation security involves the protection of persons and cargo in carriage by air facilities and related auxiliary support activities. Annexe 17 of the Chicago Convention defines aviation security as a "combination of measures and human and material resources intended to safeguard civil aviation against acts of unlawful interference". It contains standards and recommended practices (SARPs) for

safeguarding international civil aviation operations worldwide.\textsuperscript{2} Aviation security requires incessant precautions and effective security controls and procedures to be implemented by governments, airports authorities and airlines.

A. Problems Relating to Aviation Safety

At every stage of aerial operations and in every element of its support infrastructure, aviation is more exposed and vulnerable to risks today than in the past.\textsuperscript{3} The recent concern about safety record signals a fundamental change in approach to international civil aviation in the coming years. As air transport activity continues to grow, there are fears of an unacceptable spurt in air accidents.

Aviation accidents are caused by a culmination of several concurrent failures in mechanical, human and/or technological components in the air transport system. The total number of air accidents in 1996 was 57, one more than in 1995, which was the previous record year. There were 1,840 fatalities, exceeding the previous peak of 1,801. At the current rate of accidents and traffic growth, industry estimates show, there could be a major loss every seven-ten days somewhere in the world by 2015 AD.\textsuperscript{4} Accident rates indicate two elements: the number of accidents occurring, and the number of air traffic movements, or hours flown. To extrapolate the present data

over the next few years we need to look at air traffic forecasts. The latest forecasts for global air traffic growth give rates in the order of 5.2 per cent a year between 1994-2013, which approximates to a tripling of air traffic over the period. Another forecast by Airbus and Boeing jets estimates the average yearly growth of world traffic at 5.1 per cent up to 2015 A.D. The inevitable consequence of a substantially flat accident rate and air traffic growth is more accidents.

The challenge to the aviation industry and government is to determine how accidents should be minimized and safety improved further, in order to maintain the public confidence in air travel. In fact, safety is the minimisation of dangers, risks and hazards during aircraft operations. The concept of aviation safety is broad, embracing both life and property of those engaged in aviation activities and third parties as well. Broadly stated, the five basic parameters determining air safety are: safe aircraft, safe airmen, safe navigational aids, safe air traffic system and safe airports.

The operation of aircraft presents the greatest safety challenge yet in the history of air transport. Safety has been the prime concern since the days of Kitty-Hawk, when the first aircraft made its maiden flight. All facets of aviation community are involved in this endeavour -

---


airlines, manufacturers, pilots, mechanics, flight attendants, dispatchers, regulatory authorities, suppliers and insurance firms. The international aviation community should work together, collecting, analysing and disseminating aviation safety information and collaborating to develop new tools, which would improve aviation safety worldwide.  

Safety is based on co-operative and co-ordinated network of diverse agencies. The safety of international air transport is governed primarily by two main endeavours - the development and implementation of sound regulatory standards and implementation of non-regulatory accident prevention measures.  

Aviation is a complex system and requires a precise co-ordination of human and mechanical elements for its functioning. It possesses, as a system, elaborate safety defences. Accidents in such systems are the result of crucial factors, each necessary to the outcome, but not sufficient in itself to break the safety defence. The crucial factors determining safety in aerial navigation are: human error on the part of pilots, introduction of new types of aircraft with which pilots and ground crew are unfamiliar, air space congestion caused by swelling aviation activity, lack of air navigation and air traffic control services, aerial violence such as hijacking and the flight of military aircraft in air space reserved for civil use, resulting in conflict between civil and

---

9See 33rd Conference of DGs, n. 40, Paper by the USA on Global Analysis and Information Network, DGCA-97/OP/C7/3, p.2.
10See Corrie, n. 7.
military regulations. 12

The majority of air accidents, the investigations reveal, are the result of human errors. Human errors in aircraft accidents are primarily caused by inadequate response to emergency situations: weather or technical defects in aircraft machinery. Human error on the part of pilots arises from heavy stress and strain imposed by the responsibility of flying. 13 Air crashes often result from communication problems between pilots and controllers, due to the misunderstanding or misinterpretation of messages. The introduction of newer technologies offering safety improvements and performance gains has raised questions about the effectiveness of traditional training approaches, or human ability to absorb the training required for the newer equipment. 14

To overcome this problem at all levels of the organization - company, board members, senior management, flight operation management and flight crew themselves - there must be appropriate attitudes and organization structures/functions to sustain human factors awareness and promote a programme to reinforce human knowledge, understanding and skills. Organizations need to consider the ICAO Annex 1, which establishes standards for human factors licensing and the revision of the Annexes - including requirements for the promotion of human factors training. 15

13 Ibid.
Better air safety, devoid of human errors, demands advance planning for disaster prevention. This implies, first, an operational job analysis, better to familiarize the pilots, ground crew and controllers with the job tools. Second, it implies a functional concept of accident, anticipatable in the light of past experiences. The third aspect is, of course, the human limitation in air safety.\textsuperscript{16}

A conflict is bound to arise in the operation of aerial safety rules, which calls for a greater integration of the air safety law in both civil and military spheres. Civil rules are far too often violated on the grounds of military necessity, resulting in crashes between civil and military aircraft. This requires strategic and tactical air space management on a regional basis, taking account of the needs of airspace users and national security considerations. To this end, information on the planned movements of civil aircraft and their intended flight paths has to be made available in time to military units. Air defence is premised on the ability of military units to identify air traffic and verify that the right paths do not infringe on air space for which no entry authorization has been given.\textsuperscript{17}

With the advent of supersonic aircraft, flight separation limits have increased in order to enhance safety. Moreover, air space over an airport for the arrival/departure or en route phase is getting increasingly congested. The congestion results from a number of factors, impending take-off and landing capacity: limitations of ground infrastructure and aircraft equipment limitations, and limitations forced by the interface

\textsuperscript{16}See Bhatt, n. 12, p. 389.

\textsuperscript{17}Marinus C.F. Heijl, "Infrastructuur for Free Flight", in \textit{Air Traffic Technology International} 1998, pp. 115-17, at 116.
with 

Congestion threatens to cause danger in the air and to vehicular traffic on the ground. Congestion is a serious obstruction to the growth of air transport and underinvestment in aviation infrastructure is robbing billions of dollars from the world economy. A recent analysis suggests that the delay resulting from on-ground holding, indirect routing and inefficient flight levels could cost the airlines industry as much as £4 billion (US $6 billion) a year by the next millennium. In order to improve this situation a number of options are under consideration: reconstruction of airspace, associated changes and improvement to existing ATC, increased automation and development of new and better infrastructure and facilities.

Airspace congestion is causing inexorable problems to traffic controllers. It has almost become a nightmare for them, who sometimes fail to penetrate the time barrier and delay the arrival or departure of aircraft. The stress is enormous on the controllers during high traffic intensity hours, when pilots ask for control clearance. Some airports in the world have already limited the number of flights which operate daily. It has been necessitated by horizontal and vertical congestion in air space.

When the Chicago Convention was negotiated in 1944 the parties did not envision two safety-related issues: safety oversight responsibilities and the safety of civil aircraft in flight. By 1980, it was

---

21See Bhatt, n. 12, p. 389.
clear that a substantial increase in the lease, charter and movement of operational bases of aircraft across national boundaries had posed real safety oversight problems. Article 83 bis of the Chicago Convention was adopted in 1980 to end these problems and was enforced on 20 June 1997; it will solve many problems of regulation and air safety oversight, which are experienced when an aircraft registered in one state is operated by an operator based in another state.\(^{22}\)

Another factor affecting the safety of civil aircraft in flight is interception and other coercive measures directed at civil aircraft. In 1984, a protocol amending the Chicago Convention of 1944 under Article 3 bis was adopted, recognizing the principle that states must refrain from the use of weapons against civil aircraft in flight and that the lives of persons on board the flight, and aircraft safety, must not be endangered while intercepting civil aircraft.\(^{23}\)

Improvements in aviation safety, until the last decade or so, were achieved largely by investigations into accidents or wreckage, and the resultant evidence. This knowledge and statistical data have resulted in design changes, reliable manufacturing procedures, improved and focussed training for flight crews, improvements in air traffic procedures, equipment and training and better weather information.\(^{24}\)

\(^{22}\)See Address by the President of the Council of the ICAO, Dr Assad Kotaite, to the 33rd Conference of the Directors General of Civil Aviation, Asia and Pacific Regions, New Delhi, 27-31 October 1997, p. 4.

\(^{23}\)Ibid., p. 5.

B. Problems Relating to Aviation Security

Civil aviation has been greatly affected by social unrest for the past four decades in various forms: hijacking, shooting down, sabotage-like explosions in aircraft, missile attacks against aircraft, armed attacks on airports, passengers and aviation property and bombings. The motives range from political ideology to extortion and murders. The targets, besides aircraft themselves, include "aviation facilities" - air terminals, cargo buildings, maintenance hangars, passenger buses, airline offices and travel agencies. These acts are committed by individuals, organizations, groups, or members of a community. 25

The President of the ICAO Council, Assad Kotaite, cautioned the world against this danger in 1985: "...the last two decades witnessed the emergency (sic) of an alarming wide scale of a new type of danger to international civil aviation. This new type of danger is man-made and is manifested in violent human acts against the safety of civil aviation, use of threat or force, unlawful seizure of aircraft and other forms of unlawful interference with civil aviation. These violent acts that constitute a worldwide problem, are not limited by (sic) geographic or political boundaries and no nation or no airline of the world is immune to such acts." 26

25 Ian Awford, "Civil Liability Concerning Unlawful Interference with Civil Aviation", Air Law, vol. 12, no. 3, 1987, pp. 120-142, at p. 120.

The fallout of these acts of unlawful interference in terms of human casualties, air services disruption and adverse economic impact is incalculable. The acts of unlawful interference diminish and undermine the civil aviation system and can be resisted only by a systematic worldwide vigilance and enhancement of security measures.27

Protection of international civil aviation against acts of unlawful interference has been a grave concern to the United Nations and its specialized agencies, the ICAO and the IATA, for the past three decades. The year 1968 is widely recognized to have begun the modern era of international terrorism. The new terrorist era started by a wave of aerial hijackings, bombings, kidnappings, assassinations and murders shocked the world nations. Hijacking became one of the most serious threats to global aviation safety and security.28 From 1968 through 1970 some 200 aircraft hijackings occurred. That the perpetrators were mostly criminals, political militants or mentally unstable persons made the problem more alarming.29

Earlier in the past, commercial air travel was generally safe, certainly not vulnerable to hijackings and sabotage. But with the occurrence of unlawful aircraft seizures and criminal acts against civil aviation, the world began to experience the evolution of a new civil aviation security regime. This regime, now enforced by all countries of the world where air travel is a mode of transport, encompasses a series

27R.G. Sutherland, "Well-Trained Staff are Key to Effective Security Programme", ICAO Journal, April 1992, pp. 6 and 7, at p. 6.
29Duane Freer, "ICAO at 50 Years : Riding the Flywheel of Technology", in ICAO Journal, September 1994, pp. 19-32, at p. 31.
of measures and procedures designed to prevent unlawful interference and protect airport ground facilities and air navigational aids.\(^{30}\)

The increasing use of sophisticated weapons, explosive devices and other equipment by terrorists, criminals and anti-social elements has thrown up fresh challenges to law-enforcing agencies and underscores the need to understand aviation terrorism in different perspectives. Three types of attacks-hijacking, bombing and missile attacks - have, of late, dominated the crime against civil aviation. Aircraft have been destroyed, both in the air and on the ground, with an enormous loss of life.\(^{31}\) In certain countries, the continuing deaths and injuries to passengers and crew caused by the indiscriminate use of surface-to-air missiles or ground-to-air missiles or ground-to-air fire are of grave concern. Information provided by governments highlight that weapons, ammunition and explosives have recently been stolen from military armouries in countries undergoing political instability.\(^{32}\)

Hijacking or aerial piracy was first recorded in Peru way back in 1930, when an aircraft was seized and used to drop political leaflets. People, more often than not, identify hijacking with piracy. It is imperative, however, to distinguish hijacking from piracy. Hijacking connotes commandeering or seizure of an aircraft, but piracy implies


robery, pillage, or degradation for personal ends. The penalties for pirates have long been established and effectively enforced; the pirate commits a crime against all states indiscriminately. So, of course, does a hijacker, but, unfortunately, some states have offered and are still offering the hijacker refugee. 33

Seventeen years later, in 1947, one of the flight crew was killed when a Rumanian aircraft was hijacked to Turkey while on an internal flight. In 1948, a pilot and two of the flight crew were themselves members of a 17-member strong hijacking team, which forced a Czechoslovakian airliner to the then US zone of Germany. Apart from a four-year break, between 1954 and 1957, there have been acts of hijacking every year, reaching their peak in the late 1970s. In spite of stringent clamp down at airports, terrorists have continued to find loopholes in the security system and subvert the airport vigil. There is no single remedy to curb hijacking. While those charged with maintaining airport security have achieved much technical success, a great deal of work in devising effective countermeasures remains unfinished. 34

Air travel today encounters a more serious and faceless threat - hitch bomb, no bigger than a paper book, Hijackers do invariably have demands: freeing comrades from prison, political concession, or simply ransom. But bombers make no demands, nor seek negotiations nor claim responsibility. Terrorism necessarily involves the use of violence to


evoke fear, with a view to promoting a particular political and ideological aim. Terrorism, whatever the motivation, involves certain common techniques to execute. The observation that "terrorism is a threat" to gain mass publicity holds very true in bombings and sabotage. The destruction of four aircraft following the Leilakhalad hijack attempt in 1970, the Pan Am 747 mid-air explosion, while on its approach to Honolulu, in 1982, the recovery of a bomb from a Pan Am 747 in Rio, the same year, and the 1984 explosion of an Air France 747 after it left for Karachi, all testify to this technique.\textsuperscript{35}

The most devastating of terrorist acts, in recent times, are: the Air India Boeing 747 explosion en route to Delhi from Montreal, in 1985; the bomb explosion on board TWA Boeing 727 en route from Rome to Athens; the Airlink Tristar blowing up at Colombo airport prior to departure, in 1986; the crash of Korean Airlines Boeing 707 into the sea, in 1987; Pan Am Boeing 747 explosion over Lockerbie on London-New York flight, in 1986; the France's UTA DC-10 jetliner, in 1989, over Niger's Enere Desert; and the Colombian Avianca Airline Boeing 727 detonation minutes after take-off at Botota, with bomb planted near the fuel tanks, in 1989. In the last decade nearly 1,800 people have been killed in airtliner bombings, while 800 were killed in hijacking over the past 50 years.\textsuperscript{36}

More recently attacks at Heathrow, Britain's busiest airport, thrice within a short span of five days, demonstrates the killer instinct, determination and capacity of intruders to act by meticulous planning:

\textsuperscript{35} Skyways (Bombai), June 1990, p.10.
\textsuperscript{36} Singh, n. 31, p. 14.
survey of the existing security system, an indepth knowledge of surroundings, the selection of appropriate locations to conceal mortars and the sensing of timing with built-in intervals to strike. Airport security programmes are sadly lacking at most busy air traffic centres across the world.  

These incidents have added an urgency for evolving an extremely stringent system of "security control", leading to new acts, regulations and policies on security for airport managements, air carriers and airport police. The legislative machinery of many states and international organizations has, over the past few years, been busy establishing effective means to combat hijackings. More and more agreements are showing deeper interest in internationally agreed regulations to be implemented by airport and airline managements. New and improved hitech equipment is being continually tested and marketed.  

II. The ICAO and Air Safety and Security

The emergence of aeroplane as a major means of transport has brought in its wake international problems: the co-ordination of techniques and laws and the dissemination of technical and economic information was far beyond the ability of individual governments. Safety and security regulations in air transport involve the creation of aerodromes, navigational aids, effective communication networks and weather reporting systems. The standardization of operational

---


38 See Singh, n. 31, p. 15.

practices for international services is of fundamental importance, enabling elimination of error caused by misunderstanding or inexperience. The establishment of standards for air traffic control, personnel licensing, aerodrome design and infrastructure development, etc. all require more than a national action.40

Doubtless, it is the responsibility of each individual sovereign state to provide an effective system of aviation security for flights leaving its territory, but aviation security is essentially an international issue affecting each state which operates international flights. An international forum is, thus, deemed crucial to develop and implement effective measures, standards and recommended practices.41

The Chicago Convention 1944 established the ICAO as the competent watchdog to deal with all problems relating to civil aviation safety and security. The ICAO's main function is to effect standardization - the establishment of international SARPs and procedures covering the whole technical needs of civil aviation: the licensing of personnel, rules of aeronautical meteorology, aeronautical charts, measurement units, operation of aircraft, nationality and registration marks, aircraft airworthiness, aeronautical telecommunications, aircraft noise and its impact on the environment and the security and safe transport of dangerous goods by air.42 No less than 185 states are members of the ICAO. The SARPs prescribed by the

40 See Krishnan, n. 8, p. 10
41 Alan Pangborn, "How far has Europe Come since Pan Am 103?" INTERSEC (Surrey, UK), vol. 6, Issue 5, May 1996, p. 195.
ICA O are enforced by each member state, which makes its own regulations. These are regularly updated as aviation technology continues to grow. The ICAO, thus, assists in the promotion of safety and security for air transport.

A. State Sovereignty

One of the major issues of air law since the beginning has been sovereignty in airspace. Sovereignty in the relations between states signifies independence. Independence in regard to a portion of the globe is the right to exercise therein, to the exclusion of any other state, the functions of a state. In early times the question arose over the right of balloons and aircraft to cross national borders safely. In the beginning of the 20th century several scholars propounded theories on sovereignty and jurisdiction over airspace. One group supported the freedom of air, and the other national sovereignty over airspace. The impetus for a public international law to tackle the issue of airspace rights was given by the August 1904 aerial incident, when Russian guards shot down the German balloon Tschudi while flying outside Russian territory. Two other unrelated but similar incidents occurred in 1908 and 1910 respectively.

---


44 There are four theories: (1) Free Air Theory - States claimed and acquired rights in the interest of self-preservation and national safety - was propounded by Fauchille; (2) The Complete Sovereignty Theory was supported by English lawyers, notably Coke and Blackstone; (3) Every state has absolute sovereignty in the air up to, but not beyond certain height; (4) A state has sovereign rights in the superjacent air space subject to a right of free passage of all foreign non-military aircraft.

The Paris Convention 1910, for the first time, recognized airspace as belonging to individual states on the basis that the upper airspace was a national heritage common to all people, and that its reasonable use ought not to be hampered by an ancient artificial maxim of law (i.e. *cujus est solum ejus est usque ad caelum et ad inferos*).46

A consensus of European states followed in 1910, offer a landmark US court decision in the Erickson vs Crookston case in 1907. "Common law rules", the US Court declared, "are sufficiently flexible to adapt themselves to new conditions arising out of modern progress and it is within the legitimate province of the court to so construe and apply them."47

Thus, the 1919 Paris Convention recognized two basic principles of sovereignty:

(a) The principle of the full and absolute sovereignty of each state over the air above its territory and territorial waters, carrying with it the right to exclude foreign aircraft and impose its jurisdiction over the air.

(b) The recognition of the greatest freedom of international air navigation subject to the principle of sovereignty insofar as the freedom is consistent with the security of the state, enforcement of reasonable regulations relative to the admission of the aircraft of contracting states, and the domestic legislation of the state.48


47 100 Minn (1907) at p. 484, cited in Abeyratne, n. 45, p.22.

48 See Groeneweg, n. 1, p. 39.
National sovereignty was equally the dominant consideration in matters of aviation safety in the Chicago Convention 1944. Today, the Chicago Convention virtually regulates all the safety aspects of international civil aviation, laying down standards and recommended practices in its Annexes. The state where an aircraft is registered is responsible for the safety and conduct of that aircraft. The Chicago Conference had also drafted two other multilateral agreements: the international air services transit agreement and the international air transport agreement. The first one - a technical and operational agreement dealing with safety aspects of civil aviation - was successful.49

Other issues on the safety of civil aviation of the convention included standardization of human resources and equipment by certificates and licences - whether for aircraft or their crew - to be granted by the state of aircraft registry and required to be recognized by all other member states. The rules of air traffic control in air space were to be those established by that state. Accidents occurring in the airspace of a state were to be investigated by that state, even in cases involving foreign registered aircraft.50

How could different national states ensure sufficient uniformity in international civil aviation necessary for safety? Would there be a nightmare of different and possibly conflicting requirements applied as an aircraft entered the airspace of a state? This dilemma was resolved due to the voluntary acceptance by the member states of the technical


Annexes to the Chicago Convention adopted by the ICAO Council in accordance with Articles 37, 38 and 54(1). These Articles established a sound and workable progress of (1) collaboration by states working in the ICAO to establish international standards and procedures; (2) the incorporation by sovereign states of such standards and procedures into their national legislation and regulations; and (3) an immediate notification to the ICAO of any departure from such international standards and procedures. Each sovereign state is, moreover, expected to establish and follow its own oversight procedures related to safety.\textsuperscript{51}

Professor Bin Cheng addresses the principles governing post-war sovereignty over airspace as enunciated in Article 1 of the Chicago Convention and concludes: "Now firmly established rule of law that each state possesses complete and exclusive sovereignty over the airspace above its territory means that international civil aviation today rests on the tacit acquiescence or express agreement of state flown over."\textsuperscript{52}

Shawcross and Beaumont define sovereignty in international law as "the right to exercise the function of a state to the exclusion of all other states in regard to a certain area of the world". In international aviation the concept of sovereignty is the fundamental postulate on which other norms and virtually the whole of air law are based. The post-1944 attitudes towards sovereignty in airspace and the philosophy of air law range between the unlimited public right of a state to

\textsuperscript{51}Assad Kotaite, "Is there a Lessening of State Sovereignty or a Real Will to Co-operate Globally?", \textit{Air and Space Law}, vol. 20, no. 6, 1995, pp. 288-92, at p. 289.

exercise sovereignty over its air space and the idea of free air traffic movement.\textsuperscript{53}

Professor Lissitzyn analyses the sovereignty concept in its modern development in terms of three basic principles: each state has exclusive sovereignty over its air space; each state has complete discretion on the admission of any aircraft into its air space, and air space over the high seas and other areas is not subject to a state's jurisdiction in \textit{res nullius} and is freely accessible to the aircraft of all states.\textsuperscript{54}

B. The ICAO and Aviation Safety and Security

Fifty-two states met in Chicago from 1 November through 7 December 1944 and produced six important documents forming the core of the Chicago Convention.\textsuperscript{55} The Chicago Convention laid the foundation for the development of international civil aviation and established principles, structures and procedures for the working of the International Civil Aviation Organization (ICAO). Under Article 44 of the Convention, the ICAO aims to develop the principles and techniques of international air navigation and air transport so as to:

(a) ensure a safe and orderly growth of international civil aviation throughout the world;


(b) encourage the art 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 world for safe, regular, efficient and economical air transport;

(e) prevent economic waste caused by unreasonable competition;

(f) ensure 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 the contracting states;

(h) promote flight safety in international air navigation; and

(i) promote generally the development of all aspects of international civil aeronautics.

The ICAO seeks to develop regulations for international air transport. In so doing, it guides the development of aircraft technology and has set standards for international civil aviation safety and efficiency. The ICAO has harmonized technical requirements imposed on aeroplanes, developed air transport rules and resolved customs-related issues.

1. **The ICAO Air Safety Regulations**

Air safety is of paramount importance in air transport. A set of internationally agreed standards, rules and regulations have been developed by the ICAO, as manifest in the Chicago Convention 1944, to achieve the optimum level of safety.
The Chicago Convention serves as the main repository of principles for the development of international civil aviation. The convention states in its preamble that the abuse of international civil aviation can become a threat to the general security and recognises the desirability to develop international civil aviation in a safe and orderly manner. The ICAO derives its legitimacy and legal sustenance from the Chicago Convention, which sets the ICAO's chief objective as the safe and orderly development of international civil aviation throughout the world. The Chicago Convention also stipulates two other objectives for the ICAO:

(a) that the ICAO promotes flight safety in international civil aviation, and

(b) that the ICAO, through the development of its standards and recommended practices (SARPs), meets the needs of safe, regular, efficient and economical air transport.

Article 54 entrusts the amendment of these Annexes to the ICAO Council. Article 90(a) further prescribes a special meeting of the Council followed by a two-thirds vote for the adoption of new annexes.

The ICAO Annexes, most of which aim to maintain and improve safety, cover personnel licensing, airworthiness of aircraft, aircraft operations, air traffic services, aeronautical information, telecommunications, meteorological services and airport security. They collectively ensure the highest degree of air safety on a worldwide basis. These technical specifications are kept up-to-date in the 18 Annexes of the Chicago Convention, covering all the specialized sectors of air navigation. The Annexes are supplemented by procedures of worldwide
or regional application and technical manuals. The ICAO also establishes regional plans, specifying ground facilities and services required for international air navigation.\(^{56}\)

The ICAO continually works towards improving every aspect of civil aviation safety. The ICAO involves in active search to eliminate hazards in aviation - whether in equipment, operational conditions or methods and procedures. Prevention is the cornerstone of its air safety policy. The ICAO's policy includes safety surveys and rigorous training programmes for crew and ground personnel conducted across the world. It has also published an Accident Prevention Manual, which sets out proven prevention techniques. The databank and the manual are highly valuable for developing countries, which lack resources to set up major training programmes.\(^{57}\)

The President of the ICAO Council, Assad Kotaite, presenting the annual report of the Council for 1992-95, said: Safety is always uppermost in our minds as we work to build an even better future for international civil aviation. In scheduled air services over the entire

---

\(^{56}\)See Walter Binaghi, "The Role of ICAO" in McWhinny, ed, The Freedom of the Air (Leyden, 1961), p. 17. The Final Act of the Chicago Convention contains the drafts of technical Annexes. It did not require signature. It covers the different phases of technical fields of civil aviation, which include (1) personnel licensing; (2) rules of the air; (3) meteorological services for international air navigation; (4) aeronautical charts; (5) units of measurement to be used in air and ground operation; (6) operation of aircraft; (7) aircraft nationality and registration marks; (8) airworthiness of aircraft; (9) facilitation; (10) aeronautical telecommunications; (11) air traffic services; (12) search and rescue; (13) aircraft accident investigation; (14) aerodromes; (15) aeronautical information services; (16) environmental protection; (17) security - safeguarding international civil aviation against acts of unlawful interference; and (18) the safe transport of dangerous goods by air.

world there were 28 fatal aircraft accidents last year. However, for each tragic loss of life, an average of two billion revenue passenger kilometers flown safely. We are striving to increase the safety of flight even more.\textsuperscript{58}

The ICAO is further developing its Airworthiness Manual. It is developing a comprehensive programme to prevent controlled flight into terrain, a repetitive accident type, which results in more fatalities and destroyed aircraft in air transportation than any other. ICAO is helping to develop criteria for the evaluation and qualification of flight stimulators for training purposes. World Area Forecast Centres produce global upperwind, temperature and significant weather forecasts for transmission directly to states by satellites. It is publishing guidance on aircraft ground de-icing and anti-icing operations; and the ICAO established a programme for the oversight of states on a voluntary bases by an ICAO team.\textsuperscript{59}

Given the projected growth of aviation worldwide and forecast on aircraft accident rates, the need for increased global aviation safety has become greater. The ICAO has taken the lead in encouraging all the contracting states not only to enhance their current safety efforts but also to identify and develop new safety initiatives.\textsuperscript{60}

Directors of civil aviation from the ICAO contracting states were invited to ICAO headquarters in Montreal from 10-12 November 1997

\textsuperscript{58}See Assad Kotaite in the ICAO Assembly, 31st Session (Plenary meeting), Montreal, 19 September to 4 October 1995. See ICAO, Doc. 9661, A 31 min P/1-11, p. 89.

\textsuperscript{59}The chief delegate of the USA to the 29th Assembly Session (Plenary Meeting), Montreal, 22 September-8 October 1992, ICAO Doc. 9601, A29-Min P11-14, p. 47.

\textsuperscript{60}33rd DGs Conference, n. 4. Paper by the USA on "Implementation of the ICAO Safety Action Plan", See DGCA-97/1p/c7/4.
to discuss the enhancement of the organization's safety oversight programme. This first-ever world conference of the ICAO, devoted exclusively to the issue of air safety, produced specific conclusions and recommendations to reduce airline accidents worldwide and maintain civil aviation as the safest mode of transport, while reaffirming the ICAO's leadership role in air safety. Under the safety oversight programme, assessments evaluate the degree of implementation of SARPs stated in the Chicago Convention and its Annexes. They also recommended action plans to remedy deficiencies. The current programme is limited to assessing the licensing of personnel, air worthiness of aircraft and operation.

The conference made five recommendations: 61

(a) that regular, mandatory, systematic and harmonized safety audits should be introduced, which involve all contracting states and are carried out by the ICAO;

(b) that greater transparency should be ensured and that assessed states should have reasonable time to remedy deficiencies before such information is disclosed;

(c) that the ICAO safety oversight programme should be expanded to all areas of civil aviation which have an impact on safety, initially including ATS, aerodromes and support facilities and services;

(d) that safety oversight activities of countries or regions should be co-ordinated with the ICAO safety oversight programme; and

61See *Vayu Aerospace Review* (New Delhi), vol. 6, 1997, pp. 16-17.
(e) that donors and funding organizations should be encouraged to co-operate with the ICAO in utilizing the ICAO's technical services and implement their assistance programme for civil aviation.

Another major achievement of the Conference was a memorandum of understanding (MoU) signed between the ICAO and European Civil Aviation Conference. The MoU formalizes a longstanding co-operation between the two bodies in safety oversight and services as a model for other regions.62

a. The ICAO and Safety Oversight Programme

Safe and efficient international civil aviation requires a heightened commitment of the ICAO contracting states to implement effective safety oversight systems based on the ICAO standards and is dependent on the concerted efforts of the global aviation industry as a whole. The contracting states, individually or as a group, have the responsibility to ensure that an effective and efficient safety oversight system prevailed worldwide. This can be best achieved through the adequate harmonization and pooling of individual and regional safety oversight initiatives and the implementation of a global strategy for safety oversight. The ICAO's vision of safety oversight is a uniform, internationally standardized programme, aimed at ensuring the adequacy of each state's oversight of civil aviation. It is founded on the premise of an expanded safety oversight programme, properly implemented,

62 Ibid.
harmonized and supported by safety audits of the states.\textsuperscript{63}

Article 83bis of the Chicago Convention, unanimously approved by the ICAO Assembly at the 23rd session, in Montreal, on 6 October 1980, and being enforced from 20 June 1997, will materially advance the cause of global aviation safety. It will facilitate the transfer of responsibility for the regulation and oversight of air safety, when an aircraft registered in one state is operated by an operator based in another state. This amendment was necessiated by aviation deregulation, air traffic growth and high costs involved in aircraft purchasing, particularly for many developing countries. It was clear by 1980 that a substantial increase in the lease, charter and movement of operational bases of aircraft across national boundaries posed a real problem. The ICAO has taken up the task of developing an action plan for global aviation safety in view of increasing airline disasters and negative public perception. In October 1994, the ICAO Council established the ICAO safety oversight programme to confirm and ensure that all civil aviation authorities provided the aviation safety oversight of their carriers as set out in the ICAO Annexes.\textsuperscript{64} Article 83bis is a milestone in ensuring the safety of leased aircraft by solving regulatory and legal problems. It is the first substantive amendment to the Chicago Convention, giving a basis and legal framework for bilateral agreements on transferring responsibilities under the following articles


\textsuperscript{64}See 33rd DGs Conference, Paper by the USA on "Transfer of Oversight Responsibilities for Leased aircraft will yield significant Safety Benefits", See DGCA-97/1p/A1/4.
Article 12 - The Rules of the Air - makes the states responsible for (1) ensuring that every aircraft flying over or manoeuvring within its territory shall comply with the rules and regulations relating to the flight and manoeuvre of aircraft there in force; and (2) ensuring that an aircraft carrying its nationality mark, wherever such aircraft may be, shall comply with the rules and regulations relating to the flight and manoeuvre of aircraft there in force.

Article 30 - Aircraft Radio Equipment - provides that aircraft radios must be licensed by the state of registry if they are to be carried in or over the territory of other contracting states. The state of registry must ensure that the use of radio apparatus is in accordance with regulations of the state flown over, and that radios are to be used only by members of the flight crew licensed for that purpose by the state of registry.

Article 31 - Certificate of Airworthiness - provides that every aircraft engaged in international navigation must be provided with a certificate of airworthiness issued or rendered valid by the state of registry. Article 32(a) - Licences of personnel - stipulates that the pilot and crew of an aircraft engaged in international navigation must be provided with certificates of competence issued or rendered valid by the state of registry.

With Article 83 bis now in force, states of registry are, thus, free to transfer responsibility to operators' states ensuring compliance with
rules and regulations, licensing of aircraft radio, issuance and renewal of airworthiness certificates and licensing of pilots and crew.

When the Chicago Convention was negotiated in 1944 the parties did not envision the need to provide for an aircraft to be operated by an operator belonging to a state other than the state of registry. The licensing of aircraft used in international aviation has, however, become extensive. When an aircraft registered in one state is leased to an operator in another state, the state of registry may experience great difficulty in discharging its flight safety responsibilities under the Chicago Convention. The Convention vests safety oversight responsibilities with the state that is in a better situation to discharge them; in this case the state where the aircraft or operator is based will substantially improve flight safety. All parties involved - the state of registry, the state of operation, air carriers and the general public in any state in which an aircraft operates - will directly benefit by way of increased safety and renewed confidence in commercial air travel.66

Article 83 bis was adopted unanimously in 1980, and both the ICAO Council and the Assembly have since repeatedly urged all the states to ratify the amendment.67 The ratification of the amendment does not compel a state to bilaterally transfer oversight authority. Bilateral agreements for the transfer of oversight authority are possible without Article 83 bis, but a state or agency not party to the agreement is not obliged to recognise them. Article 83 bis guarantees that such

66Ibid.
67See the ICAO Assembly Resolutions A21-22 and A22-28 on lease, charter and interchange of aircraft in international operations adopted on 6 October 1980 at Montreal.
agreements shall be recognised by all the ICAO member states.

Article 83 bis has become an important feature of international aviation law. Now that it has received the necessary global endorsement, there are no uncertainties about its acceptance by the civil aviation world. The full implementation of this system has two components (1) altering the domestic regulatory framework as necessary and appropriate; and (2) developing a strategy for negotiating the bilateral transfer of safety oversight authority with significant trading partners. 68

2. The ICAO and Aviation Security

The basic aim of the ICAO, as stated above, is to ensure a safe and orderly growth of international civil aviation throughout the world and promote flight safety. The ICAO has formulated aviation security policies and implemented relevant programmes with the full support of its contracting states. Its aviation security programme was developed by its Assembly as well as by the Council, its standing committee on unlawful interference created in 1969, the Air Navigation Commission, the Air Transport Committee, the ICAO legal committee and its sub-committees, and ICAO diplomatic conference convened by the ICAO Council. 69

The tragic incident of the shooting down of a Korean Airlines flight by the then Soviet Union noted above, sparked a worldwide outcry and raised serious questions about the rules of international law.

68Ibid.
69Groenewege, n. 1, p. 250.
governing airspace. The UN Security Council could not take action on the KAL incident, as the Soviet Union had vetoed a resolution condemning the use of armed force against civil aviation as "incompatible with the norms governing international behaviour and elementary considerations of humanity". 70 This impelled the ICAO to take action.

The ICAO Council met on 15 and 16 September 1983 in an extraordinary session and adopted two resolutions. 71 The first resolution strongly deplored the destruction of the KAL aircraft, which resulted in the loss of 269 innocent lives. "Such use of armed force against international civil aviation is incompatible with the norms governing international behaviour and elementary considerations of humanity and with the rules, standards and recommended practices enshrined in the Chicago Convention and its Annexes and invokes generally recognized legal consequences." The resolution further reaffirmed the principle that states, when intercepting civil aircraft, should not use weapons against them. 72

The resolution directed the ICAO Secretary-General to institute an investigation into the facts and technical aspects of the flight and its destruction. It urged all parties to fully co-operate with the investigation. It directed the Secretary-General to report urgently to the Council on the adherence to and implementation of the Chicago Convention and its Annexes, as they bore upon the incident; and it asked the ICAO Air Navigation Commission to review the provisions of the Chicago

71 Ibid., pp. 1449-52.
72 Ibid., p. 1150.
Convention, its Annexes and related documents to consider possible amendments to prevent a reoccurrence of such tragic incidents. The Commission was told to examine the ways to improve the co-ordination of communication systems between military and civil aircraft and air traffic control services and to approve procedures in cases involving the interception of civil aircraft.\footnote{Ibid., p. 1157.}

In the second resolution, the Council instructed the Air Navigation Commission to undertake without delay technical tasks aimed at bringing about improvement in existing international rules and ensuring the safety of civil aircraft.\footnote{Ibid., p. 1152.} The ICAO Assembly endorsed the Council resolutions at its 24th session.\footnote{See ICAO Assembly Resolution A24-25, Doc. 9414 A24-Res p. 22.}

The ICAO Secretary-General addressed a letter\footnote{See ICAO state letter EC 2/65-91/6, dated 16 January 1991.} to all the contracting states in January 1991, informing them that the ICAO Council had identified major challenges facing international civil aviation. The threat of unlawful interference was identified by the ICAO's 27th Assembly session as the overriding priority in its work programme. The Secretary-General requested that all contracting states provide their views on priorities and action to be taken to meet the challenges.\footnote{The other challenges to civil aviation as identified in the state letter were: human factors in flight safety; environment; regulatory developments; commercial developments; airport and airspace congestion; legal issues; financial resources and human resources development.} The response of the states was consensual in that such measures as the implementation of the ICAO policy on unlawful
interference, the worldwide enhancing of security measures and aviation security assistance programmes were unanimously accepted as most desirable to combat the threats. A significant decision taken by ICAO Council was to proceed with the development of a comprehensive and detailed ICAO aviation security training programme.\textsuperscript{78}

The main objective of the ICAO's technical aviation security programme is to ensure the safety of passengers, crew, ground personnel, and members of the general public by denying offenders access to their primary target - the aircraft. The inspection and screening of passengers and their baggage is, thus, most important. Human error or lack of vigilance in the process of inspection and screening is the key lapse, which made it difficult to detect and prevent recent acts of unlawful interference.\textsuperscript{79}

The programme also proposes contingency measures to crack down on acts of unlawful interference. Several amendments were made to Annex 17, in September 1992, including the comprehensive security screening of checked baggage and security control over cargo. The ICAO is currently studying measures to recast the design and construction of aircraft for enhanced ability to withstand onboard explosives and help guard against acts of unlawful interference.\textsuperscript{80}

It is essential to continue developing and modernizing aviation security programmes together with the effective implementation of existing programmes. The ICAO provides advice and guidance to the


\textsuperscript{79}Groenewege, n. 1, p. 251.

\textsuperscript{80}Ibid.
member states on the implementation of aviation security standards and procedures, as decreed in Annexe 17 of the Chicago Convention. Many contracting states have benefited from the aid provided by donor states through a voluntary bilateral assistance programme for aviation security, set up in 1968. The ICAO has fielded aviation security experts in several states; over 360 aviation security training fellowships have been awarded as part of its technical co-operation activity by 1993 end.  

In the implementation of the ICAO planning mechanism, care has been taken to ensure co-ordination with other assistance initiatives: bilateral or multilateral assistance programmes from individual donor states and the United Nations Development Programme [UNDP]. A mechanism was launched in January 1990 for financial and technical assistance to the states on aviation security. The mechanism provides:

(a) advice to states, on request, on aviation security organization and techniques;
(b) international security surveys and assessments on a confidential basis, also on request;
(c) the co-ordination of an aviation security programme; and
(d) regional and sub-regional seminars and workshops.  

The ICAO Aviation Security branch has created a separate section to deal with requests by states seeking assistance as part of this mechanism. Initial technical evaluation surveys have been conducted in many of these states and confidential reports were provided to

---

81Ibid.

the respective governments recommending action for security enhancement.

On airport security, the ICAO provides optimal security in developed and developing countries. It has provided the developing countries with technical, financial and material assistance. It launched training programmes and helped develop expertise in the maintenance of aviation security equipment and security exercises. A. Kotaite is confident that the organization's efforts will "go a long way towards eliminating the threat to civil aviation proposed by acts of unlawful interference". 83

A. Annex 17 - Security - Safeguarding International Civil Aviation Against Acts of Unlawful Interference

A dramatic increase in crime and violence, adversely affecting the safety of civil aviation in the late 1960s, led to an extraordinary ICAO Assembly session in 1970. The Assembly, in a resolution, called for specifications in either new or existing Annexes to tackle the unlawful seizure of aircraft. Annex 17 [Security - Safeguarding international civil aviation against acts of unlawful interference] was, as a result, adopted by the ICAO Council on 22 March 1974 under Article 37 of the Chicago Convention. This Annex is primarily concerned with administrative and technical measures for the security of international civil air transport. 84

Annexe 17 is divided into five chapters. Chapter one defines terms like air side, security, security control and security programme.

84 Ibid.
The aims and objectives of Annex 17 are stated in chapter two: to safeguard international civil aviation against acts of unlawful interference; safety of passengers, crew and ground personnel, and development plans and their implementation procedures for the operation of international flights.\textsuperscript{85}

Chapter three of Annex 17 embodies detailed provisions for the organization of security. Each contracting state has a right to establish its own civil aviation security programme to ensure the safety, regularity and efficiency of international civil aviation against acts of unlawful interference. It emphasizes the designation of an appropriate authority responsible for the development, implementation, maintenance and constant review of national aviation security programmes. The co-ordination and implementation of activities between various national agencies, establishment of airport security programmes, airport security committees, staff training, supporting facilities and resources are other important matters relating to the organisation of security. International co-operation in aviation security proposed under the security clauses of bilateral agreements and exchange of information on training programmes between countries are also covered in this chapter.\textsuperscript{86}

Chapter four mentions various preventive security measures for the contracting states: the prevention of weapons, explosives or dangerous devices, which may be used to commit acts of unlawful interference against civil aviation; special authorization from states


\textsuperscript{86}Ibid., p. 3.
concerned for the carriage of weapons; the carriage of weapons by authorized and duly qualified persons; pre-flight checks; established procedures for concealed weapons, explosives or other dangerous devices; arrangements for surveys; and inspection of security measures. The measures relating to passengers include the adequate control, transfer and transit of passengers and their cabin baggage to prevent unauthorized articles being taken on-board aircraft; and the security inspection/screening of checked baggage, crew and other goods.\(^{87}\)

Chapter five describes the management of response to acts of unlawful interference. The contracting states shall take adequate measures for the safety of passengers and aircraft crew, provide air traffic services to aircraft, ensure assistance to an aircraft under unlawful seizure, exchange information with other states when an aircraft is in distress and also notify to the state of aircraft registry and help free hostages.\(^{88}\)

On airport design, Annex 17 requires airport operators to follow security measures when designing new or expanding facilities. The process could gather momentum, however, as the present facilities have to be modified to comply with new security measures.\(^{89}\)

The Attachment to Annex 17 provides the officials of states, responsible for implementing national programmes, with all relevant specifications appearing in other annexes as well as related procedures.

\(^{87}\)Ibid., pp. 4 and 5.

\(^{88}\)Ibid., p. 6.

\(^{89}\)See Oris W. Dunham Jr., "ACI - The Voice of the World's Airports", in Blacklock, n. 57, pp. 303-309 at p. 307.
appearing in and the PANS documents. The material provides the officials with a summary of all security-related standards and recommended practices and procedures in a single document.

New problems and perspectives have resulted in the enactment of nine amendments to Annex 17. The amendment, adopted in September 1992, proposes the comprehensive security screening of checked in baggage, security control over cargo, courier and express parcels and mail, pre-flight checks of international aircraft and the incorporation of security considerations into airport design.\textsuperscript{90} Amendment 9 to Annex 17, adopted by the ICAO Council on 12 November 1996, and effective on 31 March 1997 and applicable on 1 August 1997, envisages the introduction of new provisions in relation to: pre-employment checks and capabilities of persons engaged in implementing security controls; baggage accountability and authorization; measures to be applied to catering supplies; tests for programme effectiveness; and the notification to the state of known or presumed destination of an aircraft under seizure.\textsuperscript{91}

Following the decision of the 17th (extraordinary) session of the ICAO assembly in 1970, the ICAO Council developed a security manual for the prevention of unlawful acts against civil aviation. The manual provides guidance and procedures on all aspects of aviation security and was designed to assist the states in the implementation of their own national aviation programmes. The manual was first published in 1971 and subsequently amended in 1974 and 1977; it underwent its first major

\textsuperscript{90}Ibid.

\textsuperscript{91}See Annual Report of the ICAO Council, 1996, ICAO Doc. 9685, p. 52.
revision in 1982.\textsuperscript{92}

The increased severity and frequency of acts of unlawful interference in mid-1985 forced the ICAO Council to appoint an \textit{ad hoc} group of experts to assist the committee on unlawful interference with a review of the ICAO security programme. The president of the council appointed 18 aviation security experts from various states and international organisations. The \textit{ad hoc} group's meetings were held at the ICAO headquarters, in Montreal, that year and again in July 1986, planning numerous new and tightened standards, recommended practices and procedures. There was, it became apparent, sufficient justification for the creation of a panel to carry out the work of the experts. So, the aviation security panel came into being in late 1986. The panel revised the security provisions in 1987 and further amended them in 1989.\textsuperscript{93}

Following the publication of the fourth edition of Annex 17 in October 1989 and in the light of changes in the methods and level of sophistication and technologies used by terrorists, it was considered timely for a comprehensive revision of the manual. The Aviation Security Branch began revising the security manual in close co-operation with security experts from around the globe, following a recommendation by the committee on unlawful interference.\textsuperscript{94}


\textsuperscript{93}ICAO \textit{Journal}, April 1992, p.5.

\textsuperscript{94}Ibid.
PART II - LEGAL REGIME

III. Air Safety: Some Legal Issues

Aviation safety and liability are interrelated because strict safety measures enhance the confidence in air travel and reduce accidents involving liability to damages. Of the different aspects of aviation liability - the carrier’s liability, the operator’s liability, the liability to third persons in case of collusion’s on the surface, and the liability of air traffic controllers and manufacturers—the main focus shall be on the passengers liability as under the Warsaw system.

Phenomenal rise in aerial navigation, globalization of air transport, privatization of government air services, liberalization of economic regulations and increasing environmental controls have significant implications for safety and security. Added to these, profound changes in aircraft design, engineering and speed, and the surging competition among airlines all point to an inexorable need for legal and other measures for safety in the air.95

Civil aviation rests on the solid foundation of laws and regulations, mainly aimed at maintaining or improving safety. In the interest of public safety, all activities of civil aviation, right from its inception - aircraft design, manufacture, airworthiness, performance, operation, and maintenance - have come under the close control and supervision of governments all over the world. Every country has its

own legislation to regulate and codify different facets of civil aviation.\textsuperscript{96}

The Civil Aviation Authority's safety responsibilities cover all the aspects of flying - men, machine and environment. Its basic safety role is to set standards and satisfy itself that aircraft operators are competent, adequately trained and physically fit and that the aircraft are designed, constructed, operated and maintained in a continuous state of airworthiness i.e. fit to fly. The policies and procedures adopted by the manufacturers and airline operators are expected to follow government regulations rigidly.\textsuperscript{97}

A. Aircraft Accidents

In the jet age, air travel has quietly overshadowed other modes of transport. Luxury liners, which were the pride of yester years, have been replaced by Boeings, Airbus and Concords. Increase in air traffic has also resulted in the incidence of air disaster, although percentage wise, it is minimal and less alarming. Nevertheless, in view of the costs in terms of death toll and loss of aircraft, it is necessary to study the problems involved in air disasters and make suggestions, which further help reduce air disasters. The disasters are caused due to a number of factors, which include operators' lapses, the negligence of airport and air traffic controlling authorities, unlawful interference with aircraft, environmental hazards and original mechanical defects by manufacturers.\textsuperscript{98}

\textsuperscript{96}Krishnan, n. 8, p. 10.
\textsuperscript{97}Ibid.
Several influences which have contributed to this trend are visible. First, air traffic is one of the major growth industries in many parts of the world. Airbus and Boeing estimate the average yearly growth of world air traffic at 5.1 per cent up to 2015 AD. But the necessary growth in infrastructure does not always keep pace with the traffic in the air and on the ground. Airports - especially the major hubs - increasingly are congested. As ramp congestion increases, the potential for accidents also grows.

Second, the liberalization of air traffic has not only led to cheaper travel; it also points to the importance of cost control in all elements of the production chain. This results directly in a higher time pressure in combination with a growing risk for the operating staff on the ramp. Additionally, the direct and indirect costs of accidents and incidents are considered decisive in the profitability of the operation of routes and airports.

Third, liberalization and increased competitiveness of ramp handling are challenging the traditional concepts of "rampmanship" and raising the question of what level of professionalism training and experience is sufficient in a price-competitive environment to prevent the staff "producing" accidents.99

Accidents have commercial consequences, too. The overall annual cost of all aircraft damage in the world has been put at $ 20 billion. Average direct costs (repair, flight crew, passenger and charter costs) of each incident are estimated at around $ 75,000. In addition, indirect costs (capital costs, loss of production and revenue) can be four

99See Kerkloh, n. 6, p. 22.
to ten times as high. The mere foreign object damage (FOD) costs per departure in 1992 (1993) were calculated to be $30 ($21) in the US.\textsuperscript{100}

There is no doubt that numerous factors influence safety performance on the ramp; the "hard" factors include physical conditions [visual and weather conditions, ramp design and respective markings and signs on it], traffic volume, suitability of equipment, and equipment ergonomics. The "soft" factors comprise ramp management and organization, ground traffic management and resource management of human factors.\textsuperscript{101}

The ICAO Accident Prevention Manual provides guidance material to develop and maintain accident prevention programmes, which complement existing safety-related procedures in airworthiness, operations, personnel licensing, training, communications, etc. It covers accident prevention concepts and methods, examples of practical applications and emphasises the importance of actively searching for hazards to be eliminated. The prime objective of the manual is to enhance awareness, among aviation authorities of the ICAO contracting states and the aviation community as a whole, of the need for improved accident prevention efforts and to foster an exchange of accident prevention ideas.\textsuperscript{102}

B. Aircraft Accident Investigation

Every aerial accident is followed by an inquiry into its causes. Accident investigation has come a long way since aircrafts were built of

\begin{footnotesize}
\begin{enumerate}
\item \textsuperscript{100}Ibid.
\item \textsuperscript{101}Ibid.
\item \textsuperscript{102}See ICAO Doc. 9156 (1995).
\end{enumerate}
\end{footnotesize}
cloth and wire. As the flying machines have become more complex, so, too, have the means and methods of probing what goes wrong. The new state-of-the-art hardware and software technologies are vastly helping in accident investigation. Aircraft accident investigation may be seen on two aspects, the legal and technical. On the legal side most of the countries have their aerial codes, which envisage the mode of inquiry. The inquiry is normally held with the help of aviation experts, led by judicial or legal experts. A court examines air crash witnesses, air crew [if there are any survivors], operators' and manufacturers' representatives [over mechanical defects], the certifying authority which clears airworthiness, representatives of the air traffic control authority, other persons having personal knowledge about the accident, or technical experts whose evidence is relevant in the inquiry.

Aircraft accident investigation, from a data analysis perspective, requires a unique talent in analysing and integrating a variety of disparate sources, such as flight data recorders, quick access recorders, cockpit voice recorders, radar recordings air traffic control tapes, video tapes, and testimonies from witnesses. Expertise is needed in many fields, particularly in the areas of flight mechanics, aerodynamics, electronics, and digital data. The process used to sample the data, its storage in a recorder and extraction of information must also be well understood. An air safety investigator should be familiar with these technicalities and possess the qualifications and skills to make judgments on the quality of information.

103 Campbell and Salewicz, n. 57, p. 274.
104 See Hingorani, n. 98, p.102.
The 1919 Paris Convention does not contain any provision directly on the investigation of aircraft accidents. But the I.C.N.A. (Commission International de Nnavigation Aerienne), established by the convention, has adopted resolutions emphasizing the predominant role of the state in whose territory the accident occurs.\textsuperscript{106} The Chicago Convention of 1944, lays down under Article 26, the following procedures for aircraft accident investigation.

In the event, Article 26 states, of an accident to an aircraft of a contracting state occurring in 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 recommended by the ICAO. 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 to the state of registry.

In sum, Article 26 postulates that the inquiry is to be conducted subject to the laws of the state where the accident occurs. Due consideration is to be given to the procedures recommended by the ICAO. The state in which the aircraft is registered will be represented on the inquiry by its observers, and the state holding the inquiry shall communicate its findings to the state of aircrafts registry. As an international body overseeing the safe and efficient development of civil aviation, the ICAO has adopted Annex 13 - [Aircraft Accident

\textsuperscript{106}M. Milde, "Aircraft Accident Investigation in International Law", \textit{Air Law}, vol.9, no. 1, 1985, pp. 61-65.
Investigation\textsuperscript{107} under Article 37 of the Chicago Convention; it has become applicable since December 1, 1957. The foreword to Annex 13 asks the ICAO Council to study the possibility of initiating a uniform procedure for accident investigation, to make available promptly the reports of aircraft accident investigations and inquires for better dissemination to the contracting states, to study whether the state of manufacture could provide competent experts for service and consultation, and to give timely notification of aircraft accidents to the manufacturer. The foreword to Annex 13 also explains: "Article 26 does not preclude the taking of further action in the field of aircraft accident investigation and the procedures set forth in this Annex are not limited to an enquiry initiated under the requirements of Article 26."\textsuperscript{108}

The general recommendations for procedures to be adopted during an accident investigation are outlined in chapters 1 to 6 of Annex 13. These provisions state that the state in which an aircraft accident occurs shall take necessary measures to ensure the protection of evidence, including the safe custody of the aircraft (chapter 3). Chapter 4 stipulates: "...the state in which an accident occurs shall notify the state of registry and the state in which the aircraft was manufactured with the minimum delay and by the most suitable and quickest means available."\textsuperscript{109}

Chapter 5 of Annex 13 outlines the procedures for the inquiry covering the actual accident investigation, which must obviously begin in the state of accident site; that state usually conducts the investigation,


\textsuperscript{108}Ibid.

\textsuperscript{109}Ibid.
but may delegate all or part of its conduct to the state of registry, or the state of operator. These states can appoint representatives or advisors in the investigation process. Chapter 6 stipulates that a report on the findings of the inquiry, together with the substantiating information on which the conclusions are based, shall be sent with minimum delay by the state instituting the inquiry to the state of registry, the state in which the aircraft is manufactured and any other state that may have furnished information relating to the accident of aircraft.

In general, Annex 13 prescribes that the accident investigation authority shall have independence in the conduct of the investigation and have unrestricted authority over its conduct. The investigation is to include the gathering, recording and analysis of all the relevant information, if possible the determination of the cause, or causes, and the completion of the final report in the prescribed format followed by safety recommendations for the purpose of accident prevention. Annex 13 clarifies the distribution of responsibility, necessary notifications to different authorities, the form of the preliminary report, accident data report and the final report.

Accident investigation of aircraft incorporated into Annex 13 is a mandatory reporting system. It requires that states record all accidents and send the results of investigations to the ICAO. It has enabled the organization to amass the records of more than 20,000 accidents and investigators' recommendations in one of the most comprehensive databases in civil aviation. The information available to all the states

---

110 Ibid.
111 Ibid.
112 Milde, n. 106, p 62.
allows them to improve safety standards and incorporate measures into their own civil aviation programmes. In June 1995, the ICAO Assembly passed a resolution on improving accident prevention in civil aviation. The resolution calls on all the contracting states to reaffirm their commitment to the safety of civil aviation. The relatively unchanging trend might, it recognizes, lead to an increase in the number of accidents. The resolution goes on to urge the states to co-operate with the ICAO in the development and implementation of accident prevention measures designed to integrate skills and resources to achieve consistently high levels of safety.

More details on the procedures for investigation are given in the ICAO's Manual of Aircraft Accident Investigation. The manual states:

"...the fundamental purpose of the inquiry into an aircraft accident is to determine the facts, conditions and circumstances pertaining to the accident, with a view to establishing the probable cause thereof, so that appropriate steps may be taken to prevent a recurrence of the accident and the facts which led to it." The nature of the inquiry into an aircraft accident should not be accusatory, it states, as the object is to take remedial rather the punitive action. Similarly, the assessment of blame or responsibility should not be included in the duties or prerogative of the judicial authorities of the state concerned. The manual consists of five parts: Part 1 [general considerations and notification of accidents] covers the purpose of the inquiry and notification of accidents. Part - 2 [the organization of investigation] deals with the investigator, and

---

113 Campbell and Salewicz, n. 57, p. 276.
114 Smart, n. 5, p. 16.
magnitude and scope of the investigation. Part 3 [initial action at the scene of the accident] focuses on investigation into wreckage, operations, flight records, structures, power plants, systems, maintenance, human factors, evacuation, search, rescue and fire-fighting measures and sabotage explosives. Part 4 [reporting of occurrences] deals with the accident/incident data report and the summary of the final report. Part 5 [accident prevention] covers the study of accidents, safety publications and engineering aspects.116

C. Liability for Aviation Accidents

Aviation safety and liability are inter-related, for, tougher safety measures enhance the confidence in air travel and reduce accidents involving liability to damages. [The notion of air travel risks has made the law prefer absolute liability to fault liability]. The operator of an aircraft and agencies providing navigational aids are responsible for aircraft safety. They are also liable to damages if they failed to maintain minimum standards of air safety. Of the different aspects of aviation liability - they include the carrier's liability, the operator's liability, the liability to third persons in collisions on the surface, and the liability of air traffic controllers and manufacturers - the main focus shall be on the passenger's liability under the Warsaw system.117

The private international law rules applicable to accident compensation in commercial aviation govern the contractual relationship between carriers and passengers. Generally, the basic

116See ICAO Doc. 6920; also see William H. Tench, Safety is no Accident (London, 1985), p. 34.

interests involved in liability are (a) the interests of passengers or of their dependents to receive full financial compensation, (b) the carrier's interest to be protected against being forced into bankruptcy by the claims arising out of a catastrophic event, and (c) the public interest in maintaining and developing an economically sound and viable air transport industry. In other words, the objective of any compensation formula, whether national or international, is to provide (1) adequate, certain and prompt compensation to all accident victims, and (2) a fair distribution of the compensation costs among all the parties concerned, including operators and carriers, manufacturers, insurance underwriters, and government organizations.

With the blossoming of commercial air transport in the 1920s, governments and transport industry alike began to inquire into the ramifications of an aviation accident. The French government, in response to this concern, convened the first international conference on private air law, in 1925, primarily to consider the creation of a uniform system of aviation law. The second international conference on private air law was held in Warsaw from October 4 to 12, 1929. Its main purpose was to unify the rules on the international transport of persons and property by air, fix the damages for loss or injuries sustained and create a presumption of liability against the carrier on the happening of an injury to or death of a passenger, or damage to or loss of property.

---

120 See the Warsaw Convention 1929.
The Warsaw Convention of 1929, formally known as the Convention for the "unification of certain rules relating to international carriage by air", was signed in Warsaw on 12 October 1929 and came into force on 13 February 1933. This convention established the international liability of air carriers and the monetary limits of damage, delay or loss. The legal regime governing the liability of air carriers in the carriage of passengers, baggage and cargo comprised a number of international instruments, collectively known as the Warsaw system. The Warsaw system consists of the original Warsaw Convention of 1929, a series of protocols amending the Warsaw Convention provisions, as well as one supplementary convention to the Warsaw Convention, commonly known as the Guadalarjara supplementary convention of 1961. In its practical application, the Warsaw Convention has been amended de facto by a private agreement of air carriers operating to, from or via the territory of the US. Some components of the Warsaw system are in force for a considerable number of countries; the other instruments have not yet been enforced, although they were adopted by a diplomatic conference many years ago.

The Warsaw Convention of 1929 is a basic document on an air carrier's liability, although it has been amended by other subsequent treaties too. According to Article 17, an air carrier is liable to death or injury sustained in an accident on board the aircraft unless, under Article

---

122 For text of the Warsaw Convention, see 137 LNTS 11, ICAO Doc. 601.
123 ICAO Doc. 8181.
20, the carrier establishes that he has taken all necessary measures to avoid the damage, or that it is impossible for him to do so. A condition precedent to the carrier's responsibility to the passengers is that the damage must take place on board the aircraft, or in the course of any of the operations of embarking or disembarking ([Article 17(1)].

Under Article 21, if the carrier proves that the damage has been caused by or contributed to by the negligence of the injured person, Court may, in accordance with the provisions of its own law, exonerate the carrier wholly, or partly, from liability.

The central underpinning of the Warsaw Convention is Article 22, which places a maximum ceiling on the damages recoverable from an air carrier when a passenger has been injured, or killed, in an international air travel. The internationally established rule is that subscribing air carriers are liable to damage sustained by a passenger during the course of international transport up to an amount not exceeding 1,25,000 poincare francs (at that time equal to about $8,300).126

The wilful misconduct exception to the liability limitation, under Article 25 of the Warsaw Convention, has been a cause of concern and extensive debate since its promulgation. According to the original draft of the treaty written in French, the carrier cannot invoke liability limitation provisions if the damage has been caused by dol or by such default on the carrier's part as considered equivalent to dol (or "wilful misconduct" for French). However, even this translation does not seem

125 Articles 17 and 21 of the Warsaw Convention 1929.
126 Ibid., Article 22.
to conform to the original intent of the treaty draftsmen, who selected the word *dol*. Even so, the conflict emerging over the years in those Warsaw Convention cases, where "wilful misconduct" is alleged against a carrier, has not focused so much on the question of translation as it did on the case-by-case factual issues of what constitutes a "wilful misconduct". Special contracts, ticket conditions or other provisions designed to reduce or limit this liability were declared void by Article 23. Under Article 24 all sanctions arising out of the convention, were subject to the terms of the convention.

The Hague Protocol, 1955, has changed those provisions of the Warsaw Convention which were found incompatible with the changed situation of international air transport, or were unclear or subject to different interpretations. It doubles the original Warsaw limits of liability by amending Article 22, to increase the gold franc limit from 1,25,000 to 2,50,000 (approximately $16,000 in 1955). This was accompanied by a revision of Article 25. Under the original text, a claimant could recover unlimited damages if he established that the accident was the result of "wilful misconduct". (*Dol* in the original French text is an admittedly loose term, which has been subject to widely differing interpretations). The Hague Protocol changed this to a more precise standard, permitting unlimited recovery if the plaintiff could establish that "the damage resulted from an act or omission of the

---


carrier, his servants or agents done with intents to cause damage or recklessly and with knowledge that damage would probably result". It also simplified documentation, provided for more adequate "notice" to passengers and permitted the attorney's fees and other costs of litigation to be awarded separately from the limit if permitted by the law of the forum. 130

The so-called Montreal Agreement of 1966, which is not an intergovernmental agreement but only an arrangement on liability among air carriers operating passenger transport, to, from or with an agreed stopping place in the United States, was adopted on 13 May 1966. This was necessitated by the withdrawal of the denunciation of the Warsaw Convention by the US which was to take effect on 16 May 1966. By this agreement, the parties have de facto amended the application of the Warsaw Convention as changed by the Hague Protocol, 1955, by providing for a limit of liability for each passenger in the case of death, or bodily injury, of US$ 75,000, inclusive of legal fees and costs and $ 58,000 exclusive of legal fees and costs. 131

The rapidly changing nature of international air transport necessitated the Guatemala City Protocol in 1971, which effected a far-reaching revision of the Warsaw Convention, 1929, as amended by the Hague Protocol, 1955, particularly the provisions on the concept of liability and the limitation of the air carrier's liability. The Guatemala City protocol mainly provides for a regime of absolute liability of the air carrier, an unbreakable limit of the carrier's liability at the maximum

130See Groenewege, n. 1, p. 81.
amount of 1,50,000 poincare francs (US $ 100,000) per person; a
domestic system to supplement, subject to specified conditions, the
compensation payable to claimants under the convention in respect of
the death or personal injury of passengers; a settlement inducement
clause, conferences for the purpose of reviewing the passenger limit; and
an additional jurisdiction for suits pertaining to passengers and
baggage.132

The 1975 'diplomatic conference on air law' drafted and adopted
four protocols to the Warsaw Convention. The protocols did not raise
the limit of liability, but changed the expression from poincare francs to
Special Drawing Rights (SDRs) as defined by the International Monetary
Fund (IMF). Additional Protocol No. 1 establishes the liability limit at
8,300 SDR, or 1,25,000 monetary units (MU) per passenger. Additional
protocol No. 2 limits the liability at 16,600 SDR, or 2,50,000 MU, per
passenger. Additional Protocol No. 3 establishes 100,000 SDR, or
1,500,000 MU, per passenger in the case of injury or death. Additional
Protocol No. 4 revises various provisions relating to air cargo
regulations.133

To protect third parties on the ground, the Rome Convention of
1933 and the additional Insurance Protocol of Brussels, 1938, were
drafted to establish the absolute but limited liability of an aircraft
operator with respect to damage caused to third parties on the surface
of the earth. These agreements did not receive sufficient adherence.
Today they have been replaced by the Rome Convention of 1952,
amended by the Montreal Protocol of 1978. The difference between the Warsaw system and the Rome Convention is that while the Warsaw Convention relates to the liability of the carrier with a contractual relationship to the passenger, the Rome Convention sets the liability of carrier to persons with whom they have no contractual relationship. The operator of an aircraft is liable to damage claims, on the proof by the injured person that the damage has resulted and is attributable to the aircraft. These are in force, but with a rather limited adherence.134

Current airline liability limits for international air passengers range from about US $ 10,000 under the Warsaw Convention, 1929, to a maximum of US $ 1,50,000 depending on the circumstances, such as where the ticket is bought. For the past two decades, governments have been seeking agreement through the ICAO to increase the protection of passengers travelling by air internationally, but are unable to agree on amending the applicable law. To review the current situation and formulate recommendations for a maximum harmonization of this area, the IATA convened a world-wide Airline Liability Conference between 19-23 June 1995.135 The conference examined the possibility of developing a uniform world-wide system, to be put into effect by conditions of carriage and applicable tariffs pursuant to a anew inter-carrier Agreement, which would replace the Montreal Agreement of 1966 covering only service to, from and through the United States. The main conclusions reached by the conference are the following:

(a) that the Warsaw Convention system must be preserved; however, the existing passenger liability limits for international carriage by

---

134 See ICAO Doc. 7364 and 9257.
135 See Groenewege, n. 1, p. 49.
air are universally low in many jurisdictions and should be improved as a matter of urgency;

(b) that the governments should, through the ICAO and in consultation with airlines, act urgently to update the Warsaw Convention System, including liability issues; and

(c) that the governments should act expeditiously to bring into force Montreal Protocol No. 4, dealing with cargo and postal items independently of the Montreal Additional Protocol No. 3.\textsuperscript{136}

Furthermore, the conference established two working groups to address and report on (a) the cost impact on the airlines of an enhanced liability package, and (b) appropriate and effective means to secure complete compensation for passengers, if required.

The working groups met jointly in London and Washington in July and August 1995 respectively and, after examining possible options, concluded that a new inter-carrier agreement should provide \textit{inter alia} for a single universal system without specified limits, full recoverable compensatory damages to be awarded in accordance with the law of domicile of the passengers, and constitute an umbrella accord which would give the carriers a maximum flexibility to adjust their conditions of carriage, taking into account applicable government regulations.\textsuperscript{137}

The Draft Convention for the Unification of Certain Rules for International Carriage by Air, 1997, is aimed at the modernization and

\textsuperscript{136}Ibid.

\textsuperscript{137}Ibid.
consolidation of the Warsaw system of air carriers' liability.\footnote{The 30th session of the ICAO Legal Committee, held from 28 April to 9 May 1997 at ICAO headquarters in Montreal was attended by 61 contracting states and observers from four international organizations. See, Report of the 30th Session of the Legal Committee, Montreal, 28 April-9 May 1997, ICAO Doc. 9693-LC/190.}

The most significant feature of the draft convention is the removal of outdated limits of air carrier liability, in cases involving personal injuries or accidental death of passengers. Under the proposed instrument, the passenger or the person entitled to claim on the passenger's behalf will be able to obtain full economic restitution with respect to proven damages sustained. For damages of up to 100,000 SDRs (about US $1,40,000), the liability of the air carrier is based on the principle of strict (no-fault) liability. Above this financial threshold in the so-called 'second tier', a regime of fault-based liability, which has no numerical limits, will apply.\footnote{See Article 20 of the Draft Convention for the Unification of Certain Rules for International Carriage by air 1997. See above ICAO Doc.} In both tiers of liability, to obtain full compensatory damages, the claimant would only have to prove negligence on the part of the carrier, his servants or agents.\footnote{Ibid., pp. 4-2.}

The above mentioned system of liability, therefore, substantially modifies the legal position of the claimant and respondents to concern about providing adequate protection to the air transport user. Unlike under the current rules, full compensation is no longer predicated upon the requirements for the claimant to prove "wilful misconduct" of the air carrier. On the other hand, the interests of the air carrier are also taken into account, since the defence of contributory negligence remains available to the carrier in both tiers of liability. Finally, the draft
instrument clarifies that only resitutory compensation may be awarded, a fact which alleviates the airlines' fear of being faced with claims for so-called punitive damages.\footnote{See Ludwig Weber & Arie Jacob, "Draft Convention seeks to Consolidate and Modernize the Elements of the Warsaw System", \textit{ICAO Journal}, October 1997, pp. 5-7, at p. 6.}

It was generally agreed that the major stumbling block in all the efforts to modernize the Warsaw system had been a low level of passenger liability limit. Moreover, such limits had eroded due to inflation and a substantially high standard of living. The liability limits were a controversial issue, and a compromise is imperative. However, such compromise should be progressive, fair and equitable to all parties and acceptable to the largest number of states.

**IV. Conventions Relating to Aviation Security**

Criminal acts endangering air safety and security have, over the past four decades, gained prominence as the highest priority area for regulatory process of civil aviation. The UN and its specialized agencies, such as the ICAO, have worked to eradicate terrorist threat to international civil aviation. Conventions and protocols have been adopted to check aircraft hijacking and curb terrorist attacks on international airports. The efforts of the international community helped to focus attention on the problem. Nevertheless, there has been no consensus, or effective concerted action to crack down on terrorist attacks.
This part of the chapter examines the legal rules developed by the aviation community, especially through the ICAO, to prevent acts of unlawful interference against civil aviation. International customary law proved inadequate in persuading the states to co-operate and co-ordinate actions targeting terrorist acts against civil aviation. This has resulted in specific undertakings by the states under various international conventions, bilateral agreements and national legislation. The most important conventions are the Tokyo Convention, 1963, the Hague Convention, 1970, the Montreal Convention, 1971, the Montreal Protocol (Supplementary to the Montreal Convention 1971) 1988, and the Convention on the Marking of Plastic Explosives for the Purpose of Detection, 1991.

A. Convention on Offences and Certain Other Acts Committed on Board Aircraft Signed at Tokyo on 14 December 1963

The earliest multilateral action ever initiated to target hijacking was the Tokyo Convention, 1963, drawn up under the auspices of the ICAO, with four principal objectives. First, as the Convention makes clear, the state of aircraft registration has the authority to apply its laws to events occurring on board its aircraft while in flight. Second, the Convention provides the aircraft commander with the necessary authority to tackle persons who have committed, or are about to commit a crime, or an act jeopardizing safety on board the aircraft by the use of reasonable force when required, and without fear of subsequent retaliation through civil suit, or otherwise. Third, the Convention delineates the duties and responsibilities of the contracting state in which an aircraft lands after the commission of a crime on board, including its authority over and responsibilities to any offenders,
who may be either disembarked within the territory of that state, or delivered to its authorities. The fourth major subject stated by the Convention is the crime of hijacking.\textsuperscript{142}

The Tokyo Convention applies to criminal offences and acts committed to jeopardize the safety of an aircraft, the life and property of persons on board while the aircraft is in flight,\textsuperscript{143} that is, from the movement power is applied for take-off until the movement when the landing run ends.\textsuperscript{144} It means that the Convention recognizes the jurisdiction of the state of aircraft registration over offences and acts committed on board the jet.\textsuperscript{145} Under Article 4, the Convention recognizes the criminal jurisdiction of the aircraft in respect of offences committed on board the aircraft which have effect on the territory of that state, or offences committed by or against a national or permanent resident of that state, or an offence made against the security of that state.

Articles 5 to 10 of the Convention give the aircraft commander substantial powers of control, including restraint, where he has reasonable grounds to believe that a person has committed or is about to commit a crime on board the aircraft\textsuperscript{146} - the offences or acts specified in the opening clause of the Convention, namely "acts which,


\textsuperscript{143}See Article 1(2) of the Convention on Offences and Certain Other Acts Committed on Board Aircraft signed at Tokyo on 14 September 1963 (for short Tokyo Convention), see ICAO Doc. 8364.

\textsuperscript{144}Ibid., Article 1(3).

\textsuperscript{145}Ibid., Article 3.

\textsuperscript{146}Ibid., Article 6.
whether or not they are offences, may or do jeopardize the safety of aircraft or of persons or property therein or which jeopardize good order and discipline on board".147

The provisions of the Tokyo Convention deliberately and specifically oriented to the problem of aerial hijacking are contained in Article 11 (unlawful seizure of aircraft).

Article 11(1) states that when a person on board an aircraft has unlawfully committed by force of threat thereof, an act of interference, seizure or other wrongful exercise of control of an aircraft in flight, or when such an act is about to be committed, the contracting states shall take all appropriate measures to restore control of the aircraft to its lawful commander, or to preserve his control of the aircraft.

In the cases contemplated in the preceding paragraph, the contracting state in which the aircraft lands shall permit its passengers and crew to continue their journey as soon as practicable and shall return the aircraft and its cargo to the person lawfully entitled to possession.148

The powers and duties of the states are covered under Articles 12-15 of the Convention. The contracting state is obliged to allow the aircraft commander to disembark passengers for safety reasons,149 and upon the delivery of an offender, to institute an inquiry into the offence immediately,150 paying due regard to the general interests of air

147Ibid., Article 1.
148Ibid., Article 11(2).
149Ibid., Article 12.
150Ibid., Article 13(4).
navigation so as to avoid the unnecessary delay to the aircraft, passengers, crew, or cargo. Although the contracting state is bound to take hijackers into custody, which is to continue until any prosecution or extradition proceedings take place, the Convention contains no obligation actually to prosecute, or extradite.

Although the Tokyo Convention attempts to deal with hijackings, it has, nevertheless, been criticized. The main criticism is: (1) the Convention fails to list any offences which the state is required to suppress and to impose any obligations involving the prosecution of extradition of offenders; (2) the convention lacks in any attempt to develop a system of priorities governing the order in which several possible criminal jurisdictions, including the one given to the state of aircraft registry, can be exercised; (3) the text adopted in Tokyo contains no provision dealing with double jeopardy, or \textit{ne bis in idem}; and (4) the convention is silent on the question of aircraft under \textit{here hull} character to a national of a state other than the state of registry.


The Hague Convention of 1970 arose for two essential reasons; first, the menacing dimensions of aerial hijacking throughout the 1960s; and second, the demonstrated inadequacy of anti-hijacking provisions enacted in the Tokyo Convention, 1963. The formal preparation of the

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{151}Ibid., Article 17.
\item \textsuperscript{152}Ibid., Article 13(2).
\item \textsuperscript{153}See comment on Air Safety, JALC. vol. 61, 1995-96, p. 512. Also see Boyle and Pulsifer, n. 142, p. 330.
\end{itemize}
\end{footnotesize}
Hague Convention began in 1968, with a request by the ICAO Assembly that the ICAO Council study the threat of aerial hijacking as soon as possible, in view of the fact that Article 11 of the Tokyo Convention did not clearly provide a complete remedy. The ICAO Council subsequently referred the matter to its legal committee, which produced a draft treaty that was ultimately adopted at a diplomatic conference of the ICAO on 16 December 1970.154

The Hague Convention opens by a definition of the offence of "unlawful seizure of aircraft". According to Article 1, any person who - on board an aircraft in flight -

(a) unlawfully, by force or threat thereof, or by any other form of intimidation, seizes, or exercises control of that aircraft, or attempts to perform any such act, or

(b) is an accomplice of a person, who performs or attempts to perform any such act, commits an offence.

Under Article 2 of the Convention, each contracting state is to make the offence "punishable by severe penalties". An offence under this convention is deemed to have been committed from the time the doors of the aircraft are shut until they are opened again for disembarkation.155 Each contracting state is also obligated, under Article 4, to take steps to establish its legal jurisdiction over the unlawful seizure of aircraft and any other act of violence against passengers or crew committed in connection with hijacking - particularly when the offence

154 The Convention for the Suppression of Unlawful Seizure of Aircraft was signed at the Hague on 16 December 1970, see ICAO Doc. 8920.
155 Ibid., Article 3(1) of the Hague Convention.
is committed on board an aircraft registered in that state, or when the hijacked aircraft lands in that state with the hijacker still on board. This is a step forward in establishing the universality of jurisdiction.

Under Article 6 of the Convention, each contracting state is required to take the hijacker into custody for the purpose of criminal or extradition proceedings and to notify interested states to that effect. Under Article 7, the state in whose territory the hijacker is found, if it does not extradite him, is obliged "without exception whatsoever and whether or not the offence was committed in its territory, to submit the case to its competent authorities for the purpose of prosecution. Those authorities shall take their decision in the same manner as in the case of any ordinary offences of a serious nature under the law of that state." Article 7 seeks to render into treaty the obligation *aut dedere, aut punire* in the case of a hijacker.

Article 8 of the Convention attempts to deal with the difficult issue of extradition, raised by the establishment of the alternative obligation to extradite, if the state in which the hijacker is found should decide not to refer the hijacker to its criminal authorities for prosecution within that state. It declares that hijacking is "deemed to be included as an extraditable offence" in any extradition treaty existing between the contracting states, and that it is to be expressly included as an extraditable offence in any new extradition treaty between the contracting states.\(^{156}\) Where no extradition treaty is in force between two contracting states, then - under Article 8(2) - any one of the contracting states may, at its option, consider the Hague Convention as the legal

\(^{156}\)Ibid., Article 8(1).
basis for extradition in response to a request from the other state.

Article 9 of the Hague Convention restates with some minor changes the basic international legal obligation to an aircraft, and its passengers and crew in distress - which has been restated from the existing customary international law and which, under Article 11 of the Tokyo Convention 1963, is reaffirmed once more as an obligation of all the contracting states under the convention in the case of aircraft hijacking. The new Article 9(2) of the Hague Convention requires the contracting states to facilitate the continuation of the journey of the passengers and crew as soon as practicable.

The other important provisions of the Convention include: assistance between the contracting states in connection with criminal proceedings; information to the ICAO by the contracting states in tracking the circumstances of the offence, measures taken in relation to the offender, etc., provisions for negotiations and, then failing that, arbitration in the event of a dispute between two or more contracting states; and the instrument of ratification and provisions relating to the denunciation.\(^\text{157}\)

C. Convention for the Suppression of Unlawful Acts Against the Safety of Civil Aviation Signed at Montreal on 23 September 1971

The Tokyo Convention does not define specific offences, but the Hague Convention, concerned only with the specific offence of unlawful seizure of aircraft, has defined them. The Montreal Convention, dealing with various acts against the safety of civil aviation,

\(^{157}\)Ibid., Article 10-14.
adopts the enumerative approach in the definition of the offence. The
Montreal Convention follows the general plan of the Hague
Convention, creating a wider jurisdiction over offences specified in the
convention and imposing the requirement of either extradition or
prosecution of criminal offenders on the part of the contracting states.¹⁵⁸

The offence of unlawful acts against civil aviation is defined in
the opening provision of the Montreal Convention. Under Article 1.1 of
the Convention, any person is deemed to have committed an offence if
he unlawfully and intentionally:

(a) perform an act of violence against a person on board an aircraft
in flight and if the act is likely to endanger the safety of that aircraft;

(b) destroys an aircraft in service or causes damage to such aircraft,
which renders it incapable of flight, or such aircraft, which
renders it incapable of flight, or which is likely to endanger its
safety in flight;

(c) places or causes to be placed on an aircraft in service, by an
means whatsoever, a device or substance which is likely to destroy
that aircraft, or cause damage to it which renders it incapable of
flight, or cause damage to it which is likely to endanger its safety
in flight; or

(d) destroys or damages air navigation facilities, or interferes with
their operation, and if any such act is likely to endanger the safety
of aircraft in flight; and

(e) communicates information which he knows to be false, thereby endangers the safety of an aircraft in flight.

Article 1(2) of the Convention goes on the penalize the attempt to commit any of these offences and also punishes accomplishments of persons committing or attempting to commit the offences. Under Article 3 of the Convention, each contracting state is to make the offence punishable by severe penalties.

Article 5(1) of the Convention ordians every contracting state to establish its jurisdiction - when the offence is committed in its territory against or on board an aircraft registered in that state; and when the aircraft, on board which the offence is committed, lands in its territory with the alleged offender still on board. Each contracting state is required beyond this to establish its jurisdiction in cases defined in Article 1, wherein the offender is present in its territory and it does not extradite him pursuant to the Convention [Article 5(2)].

Under Article 7, a contracting state in which the offender is found, if it does not extradite him, is obliged - “without exception whatsoever and whether or not the offence was committed in its territory, to submit the case to its competent authorities for the purpose of prosecution”. Article 8 of the Montreal Convention has the same basic provisions as included in the Hague Convention of 1970, to treat offences under the Convention as extraditable offences.

Under Article 10, the contracting states shall, in accordance with international and national laws, endeavour to take all practicable measures for the purpose of preventing the offences mentioned in Article 1. The contracting states shall one another the greatest measure
of assistance in connection with criminal proceedings brought over the
offences. The law of the state, if required, shall apply in all cases. (Article
11 (7-1).

Under Article 13 of the Convention, each contracting state shall,
in accordance with its national law, report to the ICAO Council relevant
information as stated in the Hague Convention. Article 14 of the
Montreal Convention follows again the Hague Convention, regarding
dispute settlement, arbitration, ratification, etc.

D. A Critical Review of the Tokyo-Hague and Montreal
Conventions

If the Tokyo Convention of 1963 can fairly be described as purely
historical in its practical significance, the latter conventions of the Hague
and Montreal do attempt to impose sanctions on the individual hijacker
or aircraft, saboteur, by requiring the contracting states either to
extradite the offender when they find him within their territory, or
themselves to move the punish the offender. But, there are several
important gaps in the coverage of these conventions. First, the host
state, which receives the hijacker or saboteur but does not extradite him,
is bound under the Hague and Montreal conventions only to submit his
case to its competent authorities for prosecution. But there is no
guarantee that prosecution will in fact follow; and also no provision
exists for any follow-up under the two conventions with any degree of
diligence or good faith exercised by the host state in actually ensuring
that there will be prosecution and subsequent punishment of the
offender. Second, there is no provision under the Hague and Montreal
Conventions for possible sanctions against a contracting state, which
wilfully or negligently fails to honour its obligation under the conventions to either extradite or prosecute.

It is only an accident of history that the two conventions have been drafted on subjects so closely related that they should instead have been handled in one single instrument. The two conventions also have very similar provisions on the jurisdiction, custody, prosecution and extradition of alleged offenders, submission of relevant information to the ICAO, settlement of disputes and arbitration, ratification, and denunciation of the conventions. But, it was due to a sense of urgency and strong political will on the part of the states to find an early solution that the unlawful seizure of aircraft and the sabotage of aircraft or air navigation facilities were separated.\(^{159}\)

According to V.S. Mani, the major points of distinction between the Tokyo, the Hague and Montreal Conventions are:

(a) The Tokyo Convention targets offences committed on board an aircraft in flight under national laws, whereas the latter conventions focus on acts against the safety of civil aviation;

(b) The Tokyo Convention is still haunted by the ghost of traditional extradition law, i.e. the political offences exception, which most certainly renders its practical utility almost marginal.

(c) The Hague-Montreal regime attempts for the first time in the history of international law to create an obligation on the part of

a state to prosecute or extradite an offender or a person accused of an offence. There is a clear obligation for the state to take effective steps to prosecute him if it decides not to extradite him. There is no such provision in the Tokyo Convention.

(d) The ICAO Council under the Hague-Montreal regime is given a supervisory role, perhaps in view of its overall responsibilities in civil aviation, pursuant to Article 44 of the Chicago Convention. The Tokyo Convention lacks such explicit organizational link. 160


This Protocol was adopted by a diplomatic conference in Montreal on 24 February 1988. It extended the definition of the term "offence" given in the 1971 Montreal Convention to include certain specified acts of violence at airports serving international civil aviation, if such acts endanger or are likely to endanger the safety of such airports. The contracting states have undertaken to make these offences punishable by severe penalties. The Protocol also contains provisions on jurisdiction. 161


The main criticism against the Protocol is that the unlawful acts of violence committed at international airports are clearly located in the territory of a particular state, and that there is no vacuum in the substantive criminal law, or the rules of jurisdiction, which could not be solved otherwise by an international instrument. Thus, the real purpose of the protocol would be limited to rare, marginal cases, when a perpetrator of violence at an international airport escapes and is eventually apprehended in another state, and that state would be obliged under the protocol to prosecute or extradite such offender. On the other hand, a case such as the bomb blast that took place at Madras Airport in 1984 was clearly the handiwork of a foreign terrorist organization aimed at causing unlawful interference with civil aviation by violence at the airport.


The latest effort to unify and develop international air law against crime is the convention on the marking of plastic explosives for the purpose of detection. Plastic explosives present a greater danger, partly because of their vast destructive power even in minute quantities and partly because they are difficult to detect. This was proved when Pan Am Flight 103 exploded over Lockerbie on 21 December 1988. Immediately after this incident, the ICAO and its various committees - including the Committee on Unlawful Interference (CUI), the ad hoc group of specialists on the detection of explosives established by the ICAO Council, and the ICAO legal committee - and ICAO Resolution

\[^{162}\text{See Milde, n. 159, p. 96.}\]
A 27-8 adopted the convention on the Marking of Plastic Explosives for the purpose of detection on 1st March 1991.\textsuperscript{163}

The Explosives Convention consists of two parts: the body of convention proper, which contains the main objectives of state parties, and a technical annex, described as an integral part of the convention with technical elements. The main obligations of the parties to the Convention are set out in Articles II to IV and contain mainly two sets of obligations concerning unmarked plastic explosives. One obligation prohibits the manufacture of unmarked explosives and requires the states to control their possession and transfer. The second obligation is related to eventual phasing out/destruction of such explosives to be replaced by explosives mixed with specified detection agents.\textsuperscript{164}

Under Article II, each state shall take necessary and effective measures to prohibit and prevent the manufacture, in its territory, of unmarked explosives. This will encompass legislative action as well as practical measures going beyond the mere enactment of legislation to prevent such manufacture. Likewise, Article III obligates each state to take necessary and effective measures to prohibit and prevent the movement, into or out of its territory, of unmarked explosives. However, there is an exemption in respect of movement for purposes not inconsistent with the objectives of the Convention by authorities of


a state performing military or police functions [Article III(2)]. The obligation of the state over the existing stocks is "to exercise strict and effective control over the possession and transfer of possession of unmarked explosives which have been manufactured in or brought into its territory prior to the entry into the force of this convention in respect of that state, so as to prevent their diversion or use for purposes inconsistent with the objectives of this convention".165

The Convention then draws a distinction between existing stocks held by the authorities of a state performing military or police functions, and those not held by such authorities. Of the latter, Article IV(2) obliges the state to take the necessary measures to ensure that they are destroyed or consumed for purposes not inconsistent with the objectives of this Convention, or marked or rendered permanently ineffective within three years after the enforcement of the Convention in that state. For the existing stocks held by authorities performing military or police functions, however, the time limit is 15 years. Article IV(3), and IV(4) seek the destruction of all unmarked explosives, which are not referred to in this article. The possession and transfer of explosives referred to in para II of Part I of the technical annexe must be strictly and effectively controlled [IV(5)].

Article V of the Convention creates an International Explosives Technical Commission as a new subsidiary organ of the ICAO Council. The functions of the Commission include: to evaluate technical developments in the manufacture, marking and detection of explosives;

165 Ibid., p. 60.
report its findings to the states and international organizations; and supervise the implementation of the convention, with authority to recommend to the Council amendments to the technical annexes of the convention (Article VI).

There is a need to have an annex, which would be subject to a simpler and more flexible amendment procedure than the convention itself, in order to facilitate a quick response in matters such as the development of new additives and new methods of making explosives. A general formulation of the explosives so covered, as stated in Article I(1) of the Convention, is "explosive products commonly known as plastic explosives, including explosives in flexible or elastic sheet form as described in the technical annex". Annex in Part I...1 provides a detailed description of these explosives. Part I.11 lists explosives which, although meeting the definition in para 1, are not generally to be considered as explosives for the purpose of the Convention. The excluded explosives include inter alia those means for research, training in explosives detection, and forensic science purposes. Part II lists detection agents, of which there are four, intended to enhance detectability by means of vapour analysis of the explosives covered.

V. Air Safety and Security Regulations in India

Aviation safety and security is an integral element of the air transport industry, protect enough to affect human life and tremendously influence public psychology on which the self-sufficiency of the airlines depends. The costs of major and minor disasters are so substantial on the revenues of the airlines that any inadequate attention
paid to civil aviation safety is liable to compound deficiencies, besides hitting, though a massive spurt is forecast for a number of countries, including India.

A. Air Safety Regulations in India

The fast-track nature of life is taking a heavy toll due to safety collapse in air transport. The death of former Union Minister N.V.N. Somu in an air crash has brought to light the absence of safety mechanism in defence flights. In civil aviation, the high costs of travel are no guarantee for safe travel, or the reach of destination on time without delay, or obstacle.

Air safety regime in India comprises the Aircraft Act, 1984 and the Aircraft Rules which incorporate the ICAO Convention annexes.

Frequent collision in the skies is another aspect of deep concern, as revealed by the recent Charkhi Dadri disaster in Haryana, resulting in the loss of nearly 350 lives. The Government of India, despite the claims that airspace is safe with advanced ATC, has presumably realized the existing weakness in the air safety system. It recently appointed several committees to overhaul air security in flights. The wider terms of reference for the committees include: the review of the DGCA organizational structure; the overhaul of the Aircraft Act 1934, the Aircraft Rules 1937, and existing safety regulations; the development of aviation manpower and working conditions at various airports; the revamp of air navigation and air traffic control system; and the creation of safety awareness.
The Kanungo Committee has been appointed to ensure a comprehensive appraisal of the existing air safety regulations and machinery, and probe their effectiveness. The Bimal Julka Committee has strongly criticized the state of working conditions at air ports and recommended the modernization of air traffic systems. The Justice R.C. Lahoti Commission calls for the introduction of separate corridors at Delhi and Mumbai airports for incoming and outgoing flights, and of the latest radar system. The most recently submitted Seth Committee report\textsuperscript{166} recommends \textit{inter alia} autonomy for the DGCA, the setting up of a civil aviation board to act as an appellate authority for representations against the decisions of the DGCA, the AAI and the BCAS; the creation of an independent body to investigate accidents; the overhaul of aviation training infrastructure; the strengthening of safety regulations; more stringent methods of licensing for personnel; the modernization of satellite-based air navigation systems; and the safety audit of aviation agencies.\textsuperscript{167}

Safety in air operations is based on accident investigation and prevention through stringent programmes because any airline disaster generates adverse publicity worldwide. Various factors contribute to a collusion: ground equipment/aircraft equipment failure; crew malfunctioning, confusion/disorientation of instructions between the pilot and the ATC; language problems; the breach of procedures/rules; overwork/fatigue, the shortage of skilled air traffic controllers, and air route unequipped with navigational aids or lack of air traffic control

\textsuperscript{166}Other members of the committee were Mr P.C. Sen, CMD Indian Airlines Limited, Mr. Ranjan Chatterjee, Chairman Airports Authority of India, and Mr H.S. Khola, Director General of Civil Aviation.

In the post-mishap phase, an investigation is necessary to find the cause so that remedial action may be taken to prevent future disasters. The objective of the investigation is not to apportion blame on any one agency but to: learn from errors; revise training methods and checks; recast maintenance procedures/schedules; redesign aircraft equipment and components; check the crash vulnerability of aircraft; fit extra/more suitable equipment; revise the systems layout of aircraft and ground equipment; study measures to beat crew fatigue; revise navigation/landing aids -- both ground-based and airborne; overhaul safety facilities, and revamp search and rescue procedures.\(^{169}\)

In the event of an accident, the investigation is conducted by a commission of inquiry. The factors forcing the public inquiry are: reasons to suspect, if any, serious negligence on the part of individuals or organizations; the notion that such an inquiry is more likely to find the cause of an accident than an inspector's probe; and the threat that the accident is serious enough to undermine public confidence in air travel, the functioning of the DGCA, the AAI, etc, and the functioning of operators unless exposed.

The government appoints a commission of inquiry to inform itself of the cause of the accident and take corrective measures. A


\(^{169}\)Captain Madhu Dayal, "Accidents Prevention and Accidents Investigation - Problems and Perspectives", see the above proceedings, p. 30.
commission, if a judge heads it, is termed a court of inquiry. The findings of the commission/court generally form the basis of action by the government. Several commissions have emphasized the need for an autonomous agency to conduct accident investigations, yet several recommendations still remain unimplemented, despite being accepted. Such recommendations cover areas crucial to air safety -- flight and duty time limitations for air crew, dual rating pilot flight checks, etc.\(^{170}\)

The Directorate of Air Safety is one of the agencies functioning under the DGCA. It investigates air accidents/incidents and keeps their records and statistics. It also has regulatory functions over safety requirements. The inspector of the directorate conducts investigation into accidents/incidents if ever an inspector's probe is ordered by the DGCA. In actual practice, the DGCA appoints an inspector whenever an accident occurs. If a commission of enquiry is set up, the inspector reports to the commission and follows its directions. The Air Safety Directorate presently depends heavily on the operator's know-how, or equipment, for the analysis of accidents/incidents. The directorate has very meagre resources of its own for the analysis of data and deciphering of recordings. It is also tremendously handicapped in its investigations for lack of pilot experience - this is vital for the analysis of flight handling techniques, control inputs, and recordings. To strengthen the incident/accident system in India, the following conditions are essential:

(a) the investigating agency should be an autonomous body independent of the Ministry of Civil Aviation;

\(^{170}\)Ibid., p. 32.
The investigating agency for any accident should have as much technical know-how and experience as the operator or other agencies possess;

the investigating agency should have adequate resources to do the analysis of data and evidence independently;

the Directorate of Air Safety should undertake regular surveys to identify problem areas where the required level of safety is not maintained, and alert the agencies to their failings/lapses.\textsuperscript{171}

Aviation rests on the solid foundation of laws and regulations mainly to maintain or improve safety. All activities of civil aviation at inception - the design, manufacture, airworthiness, performance, operation, and maintenance of aircraft - have been under the close control and supervision of governments in the interest of public safety. The Director-General of Civil Aviation (DGCA)'s safety responsibilities cover all aspects of flying - the men, machine, and environment. Its basic safety role is to set the standards and ensure that the aircraft operators are competent, that the men are adequately trained, physically fit and competent, and that aircraft are designed, constructed, operated and maintained in a continuous state of airworthiness. The policies and procedures adopted by the manufacturers and airline operators are expected to follow rigidly government regulations. These are to be clearly spelt out \textit{ipso facto} in rules and regulations.\textsuperscript{172}

The directorate, headed by the Director-General of Civil Aviation, has been assigned the important functions of civil aviation

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{171}Ibid., p. 33.
\item \textsuperscript{172}See Krishnan, n. 8, p. 10.
\end{itemize}
\end{footnotesize}
regulation. The director-general (DG) has a pivotal role in the regulatory mechanism so set up for the purpose. Several powers and functions have specifically been given to the DG for this purpose.

First, the licensing of persons employed in the operation, manufacturing, repair and maintenance of aircraft takes place through the DGCA. For this purpose, the DG organizes examinations, testflights, and ensures that minimum eligibility conditions for the employment of technical staff, such as flight navigator, flight engineer, flight radio operator, aircraft maintenance engineer, and pilot, are fulfilled. 173

An applicant for licence must fulfil the medical standards and submit competence proof as laid down in the rules. It is the licence holder's duty to have the licence renewed. The licensing authority has the power to disqualify a person from holding or obtaining licence as provided in the rules. 174

The airworthiness of aircraft is an important factor in air safety maintenance. Various provisions of aircraft airworthiness are covered in part VI, Rules 49-62, of the Aircraft Rules 1937. Part VI begins with the scrutiny of aircraft design and involves the type certification of the design - a criteria essential for the issuance of the airworthiness certification of an individual plane. After this the manufacturers issue a maintenance plan document which prescribes maintenance checks to be

174Ibid.
carried out at various intervals. After the plane is acquired, the maintenance schedule is followed tightly. Every aircraft is subject to periodic checks, the personnel conducting such checks being sent to refresher courses regularly. It has also been made mandatory for pilots to undergo simulator training under severe conditions. Now more and more pilots are being sent abroad by the private operators for this training. In fact, the purpose of this entire exercise is to reinforce accident preventive measures. 175

The DG is the authority of licence inspection and aerodrome regulation. Before the setting up of the International Airports Authority and the National Airports Authority, the DG was responsible for the construction and maintenance of airports - including runways and installations - navigational aids, and air traffic control services. Now an independent Airports Authority of India (AAI) has been entrusted, along with these functions, a new role: effective administration and cohesive management of airports and civil enclaves - where air transport services operate - and all aeronautical communication stations. 176

The Air Safety Directorate has a vast responsibility for the investigation of accidents. It is the duty of the person-in-command of the aircraft - and, if he is killed or incapacitated, the owner of the operator - to send a notice of the accident to the DGCA giving information on several points mentioned in Sub-Rule (5), Rule 68, of the Aircraft Rules 1937. 177 The DGCA may order the investigation of any

177 See Air Manual, n. 173, p. 57.
accident and appoint any person as inspector of accidents.\textsuperscript{178} Part X, Rule 68-77A, of the Aircraft Rules 1937 states in some detail the method of investigation into accidents: notification of an accident; report on the incident; removal and preservation of damaged aircraft; the inspector's investigation; the powers of the inspector of accidents; the inspector's fee; the committee of inquiry; formal investigation; obstruction of proceedings; and the accidents of an aircraft registered in a foreign state. In part XA, the notification of incidents, investigation of incidents, and the powers of inquiry officers are stated in Rule 77B, 77C and 77D respectively.\textsuperscript{179}

Under section 5 of the Aircraft Act 1934, the DGCA lays down the conditions under which an aircraft may be flown, or may carry passengers, mail, or goods. The DGCA may issue directions consistent with the Aircraft Act 1934 and the rules framed thereunder with respect to measures to be taken and the equipment to be carried out for ensuring the safety of life. In the interest of public safety or tranquility, the Union Government has the power to make orders in emergency\textsuperscript{180} to enforce rules for the investigation of accidents\textsuperscript{181}, and to prohibit or regulate the construction of buildings, planting of trees, etc, for safe aircraft operations.\textsuperscript{182}

\textsuperscript{178} Ibid., Rule 71, p. 58.
\textsuperscript{179} Ibid., Rules 68-77D, pp. 57-61.
\textsuperscript{180} Section 6 of the Aircraft Act, 1934. \textit{Aircraft Manual India}, n. 173, p. 3.
\textsuperscript{181} Ibid., Section 7, p. 4.
\textsuperscript{182} Ibid., Section 7, p. 4.
B. Aviation Security Regulations in India

India's national civil aviation security regulations are based on the Annex 17 of the Chicago Convention 1944. Under the Annex 17, the contracting states shall ensure the security of international passengers through well-trained officers, supporting facilities, safeguard of airport and ground facilities at all international airports, and effective implementation of national civil aviation training programmes. A national civil aviation exercise was introduced in India after the passage of the Tokyo Convention Act 1975. Later, the Anti-Hijacking Act, and the Suppression of Unlawful Acts Against Safety of Civil Aviation Act were passed in 1982. The latter two Acts were amended in 1994.

Under Indian Constitution 1950, the subject "Civil Aviation" comes in the Union List. Thus, any criminal activity - unlawful interference against civil aviation occurring anywhere in India - is the Union Government's responsibility. Article 253 of the Constitution empowers parliament to make any law for the whole or any part of the territory of India for implementing treaties, international agreements, and conventions. It enables the Government of India to implement all international obligations and commitments. Following the Commonwealth practice, treaties are not required to be ratified by parliament. They are not self-executory, however. Parliamentary legislation will be necessary to implement provisions of a treaty within the country. Indeed, Parliament has passed legislation to implement international treaties and conventions. Section 4 of the Aircraft Act

183 See Annex 17, 6th edn, March 1997, 3.1.13 to 3.1.16.
1934 also empowers the Union Government to make rules to implement the provisions of the Chicago Convention 1944.

1. **Tokyo Convention Act 1975**

The Tokyo Convention Act 1975 was passed by the Indian Parliament as the Act 20 of 1975 and came into force on 1 January 1976. This Act was passed to give effect to the Convention on Offences and Certain Other Acts Committed on Board Aircraft, adopted in Tokyo on 14 December 1963.\(^{185}\)

The Act comprises four chapters: preliminary, definitions, offences and miscellaneous. Section 2 of the Act defines important terms like aircraft, appropriate authority, commander, convention country, Indian registered aircraft, military aircraft, operator, pilot-in-command, Tokyo Convention, and aircraft in flight. Chapter III of the Act elaborating on "offences" is the core subject of the Tokyo Convention as implemented in India. The "offences" covered in this chapter are (a) the application of criminal law to aircraft; (b) provisions of the Extradition Act 1962; (c) the powers of an aircraft commander; (d) jurisdiction; (e) provisions of evidence in connection with aircraft; and (f) provisions of documentary evidence.\(^{186}\)

Section 3(1) of the Act states: "Any act or omission taking place on board an Indian registered aircraft while in flight elsewhere than in or over India which, if taking place in India,\(^{[sic]}\) would constitute an


\(^{186}\)See V.S. Mani, n. 160, p. 372.
offence under any law in force in India...." Section 4 of the Act, facilitating the application of the Indian Extradition Act 1962, provides: "...any aircraft registered in a convention country shall, at any time while that aircraft is in flight, be deemed to be within the jurisdiction of that country, whether or not it is for the time being also within the jurisdiction of any other country." The Act reflects the recognition of the jurisdictional claim of the state of aircraft registration.

Section 5 of the Act deals elaborately with the powers of the Commander of an aircraft, including the safety of the aircraft, or persons, or property on board the aircraft, or the good order and discipline on board the aircraft. Moreover, the same section empowers the aircraft commander to disembark or deliver a person.187 Section 6 of the Act is conferred with the jurisdiction in respect of piracy committed on the high seas. Section 10 of the Act confers on the Central Government the power to certify which countries are the contracting parties to the Tokyo Convention.

2. Anti-Hijacking Act 1982

The Anti-Hijacking Act of 1982 was passed by the Indian Parliament to give effect to the Convention for the Suppression of Unlawful Seizure of Aircraft adopted in the Hague on 16 December 1970.188

---

187 See Tokyo Convention, n. 20, Section 5(iii).
The Act has three chapters: preliminary, hijacking and connected offences; and miscellaneous. Section 2 of the Act defines aircraft, aircraft registered in India - convention country, the Hague Convention, and military aircraft. Section 3 of the Act, dealing with hijacking, says: "Whoever on board an aircraft in flight, unlawfully, by force or threat of force or by any other form of intimidation, seizes or exercises control of that aircraft, commits the offence of hijacking of such aircraft."\textsuperscript{189} Para 2 of section 3 of the Act covers attempt to commit or abetment of hijacking.

The punishment for hijacking under section 4 of the Act is stated thus: "whoever commits the offence of hijacking shall be punished with imprisonment for life and shall also be liable to fine." Section 5 of the Act clarifies that such acts are punishable under the Indian Law if these acts have been committed in India. The question of jurisdiction is elaborated by section 6 of the Act: An Indian Court shall take cognizance of an offence of hijacking or related act of violence committed outside India only under the following five circumstances:\textsuperscript{190}

(a) such offence is committed on board an aircraft registered in India;

(b) such offence is committed on board a dry leased aircraft, the lessee having his principal place of business in India, or - where he has no such place of business - his permanent residence is in India;

(c) the alleged offender is a citizen of India;

\textsuperscript{189}Ibid., chapter II, section 3(1).

\textsuperscript{190}See Mani, n. 160, p. 375.
(d) the alleged offender is on board the aircraft in question when it lands in India; or

(e) the alleged offender is found in India.

The miscellaneous provisions of the Act include those relating to extradition, the certification of convention parties by the Union Government, the notification of an act registered in a convention country, the securing of previous sanction for prosecution, and the protection of an action taken in good faith. 191

Under section 5A of the Anti-Hijacking Amendment Act 1994, the Union Government may, by notification in the official gazette, confer on any officer of the Central Government the powers of arrest, investigation and prosecution exercisable by a police officer under the code of criminal procedure (CPC) 1973. The insertion of new sections 6A, 6B and 6C provides for the specification of designated courts by state governments for speedy trial and disposal thereof and shift the burden of proof on the accused in specified circumstances. Furthermore, the inclusion of section 7A has made the grant of bail more stringent. 192


This Act was passed by the Indian parliament to give effect to the to the Convention for the Suppression of Unlawful Acts against the

191 Sections 7-11 of the Hague Convention, n. 23.
Safety of Civil Aviation adopted in Montreal on 23 September 1971. This Act also carries identical provisions with the Anti-Hijacking Act, except for sections 2(2) 3 and 4. Section 2 of the Montreal Convention Act, identical with section 2 of the Anti-Hijacking Act, embodies the definitions of aircraft, aircraft registered in India, convention country, military aircraft, and the Montreal Convention.

Chapter II of Section 3 of the Montreal Convention Act incorporates, in identical terms, the offences enumerated in Article 1(I) (A), (B), (C) and (D) of the Montreal Convention, and also attempts to commit them as well as their abetment as offences under the Act, and prescribes for each of these offences a punishment of life imprisonment and simultaneous liability to fine. Section 4 of the Act incorporates the offence of destruction, damage to and interference with the operation of air navigation facilities "as offences" under the Act, and prescribes a punishment of imprisonment for life and simultaneous liability to fine.194

The Suppression of Unlawful Acts against Safety of Civil Aviation (Amendment) Act 1994 inserts a new section 3A, which spells out offences at airports. It says whoever at any airport unlawfully and intentionally, using any device substance or weapon -

(a) commits an act of violence which is likely to cause grievous hurt, or death of any person; or

(b) destroys or seriously damages any aircraft or facility at an airport, or disrupts any service at the airport, endangering or threatening

---


194 See Mani, n. 160, p. 378.
to endanger safety at that airport shall be punished with imprisonment for life and shall also be liable to fine.\(^{195}\)

Whoever attempts, it adds, to commit, or abet the commission of, any offence under sub-section (1) shall also be deemed to have committed such offence and shall be punished as provided for such offence.\(^{196}\)

The other provisions of the Montreal Convention Act, including the Suppression of Unlawful Acts against Safety of Civil Aviation (Amendment) Act 1994, are identical with those of the Anti-Hijacking Act, and the above analysis of the Anti-Hijacking Act and its amendment apply here \textit{mutatis mutandis}.

This chapter tried to sketch out the main problems of air safety and security: human errors, mechanical defects, lack of advanced air navigation facilities and airspace congestion, the conflict between civil and military aircraft, hijackings, and the ICAO's role in tackling these issues. Investigations into aircraft accidents are based on Article 26 and Annex 13 of the Chicago Convention. Liability provisions and claims are governed under the Warsaw Convention 1929, the Hague Protocol 1955, the so-called Montreal Agreement 1966, the Guatemala City Protocol 1971, the Montreal Protocols 1975, and the 1997 Draft Convention for the Unification of Certain Rules for International Carriage by Air. The legal provisions to prevent acts of unlawful


\(^{196}\text{Ibid., section 3A(2).}\)