Aviation law is considered a matter of international law due to the nature of air as a mode of travel. At the international level, the International Civil Aviation Organization (ICAO) provides the general rules and mediates international concerns regarding aviation. The ICAO is a specialized agency of the United Nations (UN). After discussing Air and Space law another main issue is Liability under this law.

The regulation of space law has been an innovation in Aviation law, bringing together the divergent and sometimes different law traditions of the world to cope with new issues in a way that the formulation of earlier international law did not. International law has emerged over decades and more or less within a coherent set of legal traditions and expectations. Together, these elements have brought a body of law into being. The current United Nations space treaties were adopted within a period of decade and a half. In considering them, the UN Resolution on Nuclear Power Sources of 1992 can also be noted, since it interacts with responsibility and the use of space, although it also figures in relation to the Space environment. Space activities are risky, subject to possible catastrophic failures.

However, to understand liability under air and space law it is important to understand what liability and negligent is.

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2 OST and COPUOS treaty is available in Chapters 3 and 5 of this study.
3 Article 7 of Liability Convention, 1975.
6.1 Liability and Negligence

According to the free dictionary, liability is:

1. The State of being liable for;
   (a) Something for which one has an obligation, responsibility, liability, or debt
   (b) The financial obligations entered in the balance sheet of a business Enterprise;

2. Something that holds one back; a handicap.4

An additional meaning describes that, it is an obligation that legally binds an individual or company to settle a debt. When one is liable for a debt, they are responsible for paying the debt or settling a wrongful act they may have committed.5 According to business dictionary liability is: (1) Responsibility in result of one’s acts or omissions in any case, enforceable by civil remedy (damages) or criminal punishment. (2) significantly, liability is obligation to do or refrain from doing something.6

The simple example below can explain the concept of Liability: If John hits Jane’s car, John is liable for the damages to Jane’s vehicle because John is responsible for the damages.7

Liability has different meanings in different subject. In the financial section it is understood as a claim against the assets, or legal obligations of a person or organization, arising out of past or current transactions or actions. Liabilities require mandatory transfer of assets, or provision of services, at specified dates or in determinable

5 Available at: http://www.investorwords.com/2792/liability.htm#ixzz3cRQUyTza.
6 Available at: http://www.businessdictionary.com/definition/liability.html#ixzz3cRREQ5Gb.
future.\textsuperscript{8} That means under air law if the carrier is providing service and is negligent then he is liable.

6.1.1 Negligence

It is important to note that the basis of liability is negligence. It is based on the principle that when a person owes a duty of care to another, a breach of such duty grounds an action of negligence against the offender. The elements of negligence relevant in the case of a pilot are the duty or standard of care he owes and whether that duty has been breached. While the law imposes an objective test of how a “reasonable man” would execute that duty of care in ordinary circumstances, which do not require any special skills, the important example in case of pilot of the standard applicable, would be that of the reasonable professional pilot. According to M. Nair J:\textsuperscript{9}

“Where a situation exists, which involves the use of some special skill or competence, then the test as to whether there has been negligence or not is not the test of a reasonable man. This is because he has not this special skill. A man need not possess the highest of expert skill. It is well established law that it is sufficient if he exercises the ordinary skill of an ordinary competent man exercising that particular art”.\textsuperscript{10}

The degree of negligent conduct required of a person in charge of transporting passengers and cargo has been set out in clear terms both in cases concerned with the responsibility of a captain at sea and a pilot in command of an aircraft. Brett LJ, delivering judgment on a captain of a ship declared that: “in case of emergency, captains of ships are responsible to show their best skills as persons of their

\textsuperscript{8} Ibid.
\textsuperscript{10} *Bolam v. Friern Hospital Management Committee*, (1957) 2 All ER 118 at 121. See also *Phillips v. Whiteley*, (1938) 1 KB 566 at 570.
position with ordinary nerve ought to show under the circumstances”\textsuperscript{11}. The case involving the negligence of a pilot in \textit{Taylor v. Alidair Limited},\textsuperscript{12} related to an unfair dismissal action in which a pilot appealed against his dismissal following a heavy landing leading to an uncorrected bounce and the collapse of the nose wheel assembly of the Viscount aircraft he was flying. By this action, the aircraft made a heavy touchdown, and again bounced 10 feet into the air and touched down heavily on all three wheels on the runway, causing considerable damage to the engines and airframe. Bristow J held that: “there are activities in which the degree of professional skill, which must be required, is so high and the potential consequences of the smallest departure from that high standard are so serious that one failure to perform in accordance with those standards is enough to justify dismissal. Some of these professions include the scientist operating the nuclear reactor, the chemist in charge of research and passenger-carrying airline pilot”.

Another illustration can highlight this example. The driver of the Manchester to London Express and the driver of an articulated lorry full of sulphuric acid are both the situations in which failure to maintain the proper standard of professional skill can bring about a major disaster.\textsuperscript{13} It is important to note that fundamental principles of tortuous liability relating to the duty of care are extended to expect a greater degree of care from a person who undertakes a profession. Especially when the said profession not only requires special skill but also involves the fact that the resultant damage caused by a breach of duty on the part of the professional would be so great as to reasonably expect him to exercise more care than that exercised by the ordinary employee who performs less responsible functions. This rationale has

\textsuperscript{11} Supra note 9

\textsuperscript{12} Id., at 77.

so far been virtually unanimous that one single instance of irresponsible conduct which cause serious damage could justify stringent legal measures being imposed on the professional. The position of the pilot in command of an aircraft therefore seems to be governed by the application of three presumptions which are:

(a) The magnitude of the damage that may be caused in the eventuality of a breach of the duty to take care by the pilot;

(b) The special skill and expertise which the pilot is presumed to possess; and

(c) The enhanced duty of care expected of the pilot in view of such special skill.

These three principles are no doubt inextricably connected to one another. For a high risk expert such as that of the pilot of an aircraft, the risks of flying are significant and require the special skills and expertise that a pilot not only possesses, but must also use to preclude any eventuality of danger to decrease the risk. There is strong opinion that a duty would be cast on the employer to remove the pilot at the first clear sign of inefficiency of the pilot.\textsuperscript{14}

After describing meaning of Liability and negligence, let’s analyze the Liability under the air and space law.

6.2 Liability under International Law

The starting point for liability under aerial navigation laws from which individual States derive international principles that influence their own domestic laws and regulations is the Convention on International Civil Aviation Organisation (ICAO). In the Chicago Convention 1944, it was decided that contracting States to the

\textsuperscript{14} Shawcross & Beaumont, \textit{Air Law}, Vol 84.
convention recognize that every State has complete and exclusive sovereignty over the airspace above its territory.\textsuperscript{15} This is to be followed by the statement in Chicago Convention\textsuperscript{16} that for the purposes of the convention,\textsuperscript{17} the territory of a State includes the land areas and territorial waters adjacent thereto and under the suzerainty, protection, mandate and sovereignty of the State concerned.\textsuperscript{18} That means if any liability relating to aerial navigation arises then it is to be dealt with under international treaties and conventions.

Significantly, overall liability of the State to provide air navigation services has been clearly identified by international treaties. There can be various kinds of air service providers ranging from State instrumentalities to private service providers, therefore the liability regime could be varied and contentious. Clearly, liability of the State can be bifurcated into two areas as under;\textsuperscript{19}

1. First under national administrative law, where liability of the State, its agency or a private body can be detained within the territory of a State, and

2. Second under international law, this involves principles of State responsibility and the liability of a State for causing injury or damage to another State or its subjects.

\textbf{6.2.1 Liability under National Administrative Law}

First significant step to know Liability under public international law, is to understand liability under national law. Significantly, State liability under administrative law could, in turn,

\textsuperscript{15} Article 1 of Chicago convention its available in Chapter 3 of this study.
\textsuperscript{16} \textit{Ibid}, Article 2.
\textsuperscript{17} Convention on International Civil Aviation, signed at Chicago in 1944. See ICAO Doc. 7300 (9\textsuperscript{th} Edition, 2006); Hereinafter referred to as the Chicago Convention. \textit{Available at}: http://www.taiwandocuments.org/montevideo01.htm. (visited on November 12, 2014).
\textsuperscript{18} Ruwantissa Abeyratne, \textit{Air Navigation Law}, 100 (Springer, 2012).
\textsuperscript{19} \textit{Ibid}.
be divided into two parts: (a) liability for acts of privatized service providers for whose acts and responsibilities, instrumentalities of the State are liable; and (b) liability relating to air aviation services for which the State faces responsibility.

Added to this, the fundamental instance lay in the overarching ethos that the judiciary has its role in keeping instrumentalities and agencies of the State intact. Accountability of the State for its agencies’ actions is of two folds: one stemming from a statutory power given to that agency by the State; and the other arising from delegation of authority by the State to the agency concerned. In the latter instance, however, the legislature could intervene and have some control over the agency. This gave rise to the over activism principle that judgments of courts and administrative law on such agencies could be involved only in the former instance, when the State had provided a statutory base for a private agency or State. In Great Britain, the House of Lords limited the circumstances in which a general law remedy (1983), such as a declaratory judgment or injunction, could be brought outside which prescribed instances of legal actions to be brought against the State for an act of its statutory agent. Furthermore, the later cases established that although the claim for judicial review might be brought against the Crown, the Crown involvement is merely nominal and the ultimate dispute would be between the claimant and the defendant. It is in the 1990 decision in the Factor Frame Case where Lord Bridge Stated that injunctive relief against the Crown or its officers was not possible.

Another similar example in the UK of privatization of utility in the legislative initiative of 1984 can be observed with the adoption of

21 Section 31 of the Supreme Court Act of 1918.
the Telecom Act, which brought about the privatization of a public utility. In 1984, this legislation privatized British Telecom (BT), a public corporation and abolished BT’s monopoly in providing telecom services, thus opening the doors to competition. The Director General of Telecommunications, established by the Act, can grant licenses to operators of telecom systems. The Director General is also empowered to refer a matter to the Monopolies and Mergers Commission, particularly on issues related to public interest such as pricing. If this particular feature were to be applicable to privatized air navigation service provider appointed under statute, there would be an interesting consideration under public law whether that provider complied with Article 15 of the Chicago Convention on charges for services.

### 6.2.2 Liability under Public International Law

International Law as to the liability of a State for damage caused to another State has a long history. Various cases, such as in the *Trail Smelter Arbitration*, The *Corfu Channel Case* and The *Chorzow Factory Case* settled that a State may be liable to another State for damage caused to that other State, and that the obligation requires that reparation is made for such damage. The completion of the work of the International Law Commission on State responsibility

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24 From 1912 until 1981 telecommunications are the responsibility of the Post Office. The 1981 legislation represented telecommunications from KP. Services and established British Telecom as a public corporation.


has presented a functional declaration of the law, which can be referred to as authoritative.  

Significantly, a State may not wash its hands of the results of its activities. States have in fact authorized their activities and supervise them on a continuing basis. The procedures for presenting a claim under the Liability Convention diverge in two major ways from the legal aspects of international law as to State Responsibility:

(a) The ordinary rule as to ‘Nationality of Claims’ is not followed. Naturally, one could expect that a State would claim compensation for loss or damage to its national, and if it does not do so, that is an end of the matter,

(b) However, according to this Convention, should the State of nationality not present a claim, another State may present a claim in respect of damage sustained in its territory by any natural or juridical person. 

It therefore is feasible for State B to present a claim in respect of a national of State provided that a national of another State A is not presenting the claim in that State. This is the case if State A suffered damage in the territory of State B. In addition, if A is not a national of the launching State nor is engaged in operating the space object, it might still be available to him to present his claim. Further, where neither the State of nationality nor the State where the damage occurred present a claim, then the State of permanent residence of the damaged person or entity may claim, again subject to the

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30 Ibid, Article VIII.2
31 Ibid, Article VII.
32 Ibid, Article VIII.3.
qualification that the injury is not to a national of the launching State or to someone operating the space object.\textsuperscript{33}

The ‘Rule of Nationality of Claims’ is therefore, inclusively understood, though not to the extent of allowing any State to set up as an international agency or broker for space claims. Second, the Liability Convention departs from the ordinary rules of International Law in that presentation to a launching State of a claim for compensation under the Convention does not require the prior exhaustion of local remedies.\textsuperscript{34} It remains competent for local remedies to be pursued – that is not excluded by this provision of the Convention. However, it is not competent simultaneously to pursue a claim under the Convention and to seek compensation through the remedies of the launching State itself.\textsuperscript{35}

It is important to note that a State cannot adjudicate against another State’s acts in its own courts on the issue whether it was good enough to allow a flight to go through with all facilities. The responsibility of the State under both public international law and national administrative law in certain circumstances of the provision of air aviation services, does not presuppose that there is no liability of the air traffic controller individually. The sovereign jurisdiction of a State does not extend beyond its territories. There have been instances of the air traffic controllers’ individual liability,\textsuperscript{36} for negligence in common law jurisdictions.\textsuperscript{37}

In the case of ships at foreign ports, the principle has veered from an extremity where the Court recognized the mere interest of a State in a ship. Sovereign immunity could be asserted as a justifiable

\textsuperscript{33} Ibid, Article VII.
\textsuperscript{34} Ibid, Article XI.1.
\textsuperscript{35} Ibid, Article XI.2.
\textsuperscript{36} Both jointly with the State concerned and severally.
exclusion to adjudication depending on the extent of control a State exercises over the issuant land. The US government has insisted on adequate State control of a vessel.\textsuperscript{38} The ship was operated privately for commercial purposes to reject a defective advantage in a vessel, which to the State claiming did not afford sovereign immunity in order to ensure its exclusion from the jurisdiction of a foreign court. In view of many developments in the modern context where States have commercial interests beyond their boundaries giving State enterprises over other national enterprises, many States recognize the practice of restrictive immunity of States in commercial issues.

This fact, by itself and apart from other circumstances, neither involves prima facie responsibility nor shifts the burden of proof.\textsuperscript{39} The Court, however, pointed out that exclusive control of its aviation territory by a State had a bearing upon the methods of proof available to establish the involvement or knowledge of that State as to the events in question.

In the North Sea Continental Shelf Case the International Court of Justice (ICJ),\textsuperscript{40} held that legal principles that are incorporated in Treaties, such as the “common interest” principle, become customary international law by virtue of Article 38 of the 1969 Vienna Convention on the Law of Treaties.\textsuperscript{41} It recognizes that a rule set forth in a treaty would become binding upon a third State as a customary rule of international law if it is generally recognized by the States concerned as such, which in turn becomes a principle of customary international law, or \textit{jus cogens}. Obligations arising from \textit{jus cogens} are considered applicable \textit{erga omnes}, which would mean that States

\textsuperscript{38} The Navemor, 303 US 68 (1938) and Republic of Mexico v. Hoffman, 324 US 30 (1945).
\textsuperscript{39} The Corfu Channel, ICJ Reports, 4 (1949).
using space technology owe a duty of care to the world at large in the provision of such technology. The *ICJ in the Barcelona Traction Case* held that an essential distinction should be drawn between the obligation of a State toward the international community as a whole, and those arising vis a vis another State in the field of sovereignty.

All States can be held to have a legal interest in their protection; in view of the importance of the rights, they are obligations *erga omne.*\(^42\) The International Law Commission has observed of the ICJ decision: In the Courts’ view, there are in fact a number, albeit limited, of international obligations which, by reason of their importance to the international community as a whole, are-unlike others - obligations in respect of which all States have legal interest. The views of the ICJ and the International Law Commission, which has supported the approach taken by the ICJ, give rise to two possible conclusions. Significantly, these conclusions related to jus *cogens* and its resultant obligations *erga omnes* are important to note:

(a) Obligations *erga omnes* pre-empt other obligations that may be incompatible with them.\(^43\)

(b) Obligations *erga omnes* affect all States and thus cannot be made inapplicable to a State or group of States by an exclusive clause in a treaty or other document reflecting legal obligations without the consent of the international community as a whole;

Some examples of obligations *erga omnes* provided by the ICJ are prohibition of acts of, genocide, aggression, discrimination and slavery.\(^44\) It is indeed worthy to note that all these obligations are

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\(^{42}\) In legal terminology, *erga omnes* rights or obligations are owed toward all.


derivatives of norms, which are jus cogens\textsuperscript{45} at international law. International responsibility relates to both breaches of treaty provisions and other breaches of legal duty. In the \textit{Spanish Zone of Morocco Claims case}, Justice Huber observed that:\textsuperscript{46}

Responsibility is the necessary corollary of a right. All rights of an international character involve international liability. If the obligation in question is not met, responsibility entails the duty to make reparation. It is also recognized as a principle of international law that the breach of a duty involves an obligation to make reparation appropriately and adequately. This reparation is regarded as the indispensable complement of a failure to apply a convention and is applied as an inarticulate premise that need not be stated in the breached convention itself.\textsuperscript{47}

The ICJ affirmed this principle in 1949 in the \textit{Corfu Channel Case}\textsuperscript{48} by holding that Albania was responsible under international law to pay compensation to the United Kingdom for not warning that Albania had laid mines in Albanian waters, which caused explosions, damaging ships belonging to the United Kingdom. The treaty law provisions of liability and the general principles of international law as discussed complement each other in endorsing the liability of States to compensate for damage caused by space objects. Due to this reason, there is no contention as to whether in the use of nuclear power sources in outer space, damage caused by the uses of space objects or

\begin{footnotesize}
45 \textit{Jus cogens} (from Latin: compelling law; English: peremptory norm) refers to certain fundamental, overriding principles of international law, from which no derogation is ever permitted.


47 \textit{In Re. Chorzow Factory (Jurisdiction) Case}, PCIJ, Ser. A, no. 9 at 21 (1927).

48 ICJ Reports, 4 at 23 (1949).
\end{footnotesize}
use thereof would not go uncompensated. Furthermore, under the principles of international law, moral damages based on pain, suffering, and humiliation, as well as on other considerations are considered recoverable.

The sense of international responsibility that the UN ascribed to itself had reached a heady stage at this point, where the role of international law in international human conduct was perceived to be primary and above the authority of States. In its Report to the General Assembly, the International Law Commission recommended a draft provision, which required that every State has the duty to conduct its relations with other States in accordance with international law and with the principle that the sovereignty of each State is subject to the supremacy of international law.\(^\text{49}\) This principle, which forms a cornerstone of international conduct by States, provides the basis for strengthening international comity and regulating the conduct of States both internally—within their territories—and externally, towards other States. States are effectively precluded by this principle from pursuing their own interests untrammeled and with disregard to principles established by international law.\(^\text{50}\)

6.2.3 Liability under International Aviation Law

The principle of state liability and responsibility is the most compelling principle at public international law with regard to the air-navigation service provider and liability of a State. This principle is entrenched as a fundamental principle of international law, in particular, recognized by the Chicago Convention i.e., it is responsibility of a State to provide air navigation services to foreign as well as its own carriers. That means state is laible in case it is


\(^{50}\) \textit{Ibid.}
negligent in providing aerial navigation service. However, negligent service provider can be a state or private entity.

Modern treaty law principles demand that an ICAO contracting State, which has placed its instrument of ratification to the Chicago Convention has consented to be bound by the provisions of that treaty. The word “Contracting State” refers legally to a State which is bound by the treaty concerned, irrespective of whether the treaty is in force or not. This goes to the root of international responsibility as already discussed and it is improbable at common law that a court would consider otherwise and disregard a State’s obligation in the provision of air navigation services, particularly in the context of governmental agencies and other instrumentalities of State. This however, does not completely exonerate the privatized service provider, who could be held liable under private law. Legally, as was discussed, neither the State nor the service provider can avoid liability because of privatization.51

Regarding liability, the Warsa Convention 1929, provided that the consignor is also responsible for all damages suffered by the carrier or any other person by reason of the irregularity incorrectness or in-completeness of the said particulars and statements.

A welcoming feature of the convention is that the consignor and the consignee can respectively enforce all the rights given to them by this convention,52 each in his own name, whether he is acting in his own interest or in the interest of another. It is further provided that carrier is not responsible if he proves that he and his agents have taken all necessary measures to avoid the damage or that it was impossible for him or them to take such measures.53 Further, the carrier is not responsible if he proves that the damage was occasioned by negligent

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51 Ibid.
52 Ibid, Articles 12 & 13
53 Ibid.
pilot or negligence in the handling of the aircraft or in navigation or all necessary measures to avoid the damage had been taken.

Montreal Convention, 1999 has played commendable role regarding liability for aerial navigation. Under this convention there are provisions for liability of the Carrier and Extent of compensation for damage. Under this convention liability arises in case of death, injury and damage, which holds the carrier responsible. This means they should try all their best to save Life and luggage of passenger.\textsuperscript{54} The carrier is liable for damage sustained in case of death or bodily injury of a passenger upon condition only that the accident caused the injury or death took place on board the aircraft or in the course of any of the operations of embarking or disembarking.\textsuperscript{55} The carrier is liable for damage sustained in case of destruction or loss of, or of damage to checked baggage upon condition only that the event, which caused the damage loss or destruction, or took place on board the aircraft or during any period within which the checked baggage was in the charge of the carrier.\textsuperscript{56} However, the carrier is not responsible if the damage resulted from the inherent defect, quality or vice of the baggage. In the case of unchecked baggage, including personal items, the carrier is liable if the damage resulted from its fault or that of its servants or agents. This convention made it clear also in case if carrier admits the loss of the checked baggage, or if the checked baggage has not arrived at the expiration of twenty-one days after the date on which it ought to have arrived, the passenger is entitled to enforce against the carrier the rights which flow from the contract of carriage.\textsuperscript{57} However, under

\textsuperscript{54} Available at: http://www.jus.uio.no/lm/air.carriage.unification.convention.montreal.1999/17.html (visited at March 3, 2015).

\textsuperscript{55} Article 17, of Montreal Convention, Damage to Baggage and death.

\textsuperscript{56} Ibid.

\textsuperscript{57} Article 18.3, 4 of the Montreal Convention, 1999.
this Convention the term “baggage” means both checked baggage and unchecked baggage. 58

Significantly, under this convention, the carrier is not liable if and to the extent it proves that the destruction, or loss of, or damage to the cargo has resulted from one or more of the following 59: a) inherent defect, quality or vice of that cargo; b) defective packing of that cargo performed by a person other than the carrier or its servants or agents; c) an act of war or an armed conflict; d) an act of public authority carried out in connection with the entry, exit or transit of the cargo. The carriage by air within the meaning of this Agreement comprises the period during which the cargo is in the charge of the carrier. 60

Air traffic controllers cannot shift liability to the State based on State responsibility to provide air traffic services, which is a responsibility recognized by the Chicago Convention. In the case of Eastern Airlines v. Union Trust Co., 61 the rule was established that air traffic controllers had no discretion to be negligent in their work. In addition, they could not shelter themselves behind the fact that they worked for an instrumentality of State in matters pertaining to their individual liability, which clearly established liability criteria regarding the provision of air navigation services in the United States. 62

In Anns v. London Borough of Merton, 63 decided in 1998, Lord Wilberforce of House of Lords(London) court held that negligence of the accused Borough Council would ensue if he did not take

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58 For more detail See Article 18.1, Damage to Cargo.
59 Ibid.
60 Ibid.
61 Eastern Air Lines v.United Trust Company 221f.2d 62 Eastern Air no.11991. 11992 United States Court of Appeals.
reasonable care according to his expert and skill in securing compliance with bylaws and regulations. Discretion and negligence are not mutually exclusive.\textsuperscript{64} The operational criterion is whether in the exercise of discretion, there was a breach of allegiance of care. The liability and consequent consideration that grounds an action based on a break or shortage and undergo a duty of care depends entirely on policy considerations whether it would be fair, just, and reasonable to impose such a duty. Clearly, because of Barret\textsuperscript{65} and Phelps, one could conclude that a duty of care is owed by an air-Aviation service provider\textsuperscript{66} to both the operators of the aircraft as well as those who use the operator’s services in the given instance. With regard to applicable law in the US, the Federal Act of the US although not providing any specific responsibility regime for the US government, declares that the US Government approves of its being treated as a legal person in terms of tortuous liability, with no immunity right.\textsuperscript{67}

Another issue regarding liability under air navigation is negligence of pilot. Professionals such as surgeons, chemists and doctors and other similar categories including pilots need special skill and knowledge to act as professionals. Therefore, they require higher degree of care while performing their duty. In case of Steinbock v. Schiewe,\textsuperscript{68} the US court held that the degree of care required of the pilot has been interpreted to be more an issue of fact to be decided by the jury. In case of United States v. Vigderman,\textsuperscript{69} the US court has

\textsuperscript{64} This is a principle applicable both in the United Kingdom and the United States. See Johnson v. State of California, 447 P. 2d 352 (1968).
\textsuperscript{65} In Barrett v. Enfield LBC, [2001] 2. A.C. 550, the claim for breach of statutory duty per se was not pursued before the Court of Appeal or the House of Lords, in the case of a local authority sued for negligence in caring for a child.
\textsuperscript{66} Whether he is an agent of the government or a private body.
\textsuperscript{68} 330 F. 2d 510 at 512 (1964).
\textsuperscript{69} 194 F. 2d 977, affirmed in appeal in Vigderman v United States, 175 F. Supp. 802 at 807.
gone so far as to hold that to establish negligence of the pilot the plaintiff would have to present clear evidence of what exactly happened in the aircraft at the time of the alleged negligence of the pilot. However, if facts are clear and need no elucidation, the plaintiff does not need further enlighten court on the circumstance of the case which can then be judged on the above mentioned judicially recognized principles:

In this regard, it would be pertinent to mention that the findings of the appeal tribunal in Taylor’s case clearly lay down the principles that:

(i) In the instance of an error of omission or commission by a pilot, which results in some damage, negligence can be imputed to the pilot;

(ii) If clear facts unequivocally demonstrate the commission of the error, negligence is presumed; and

(iii) Such negligence would incontrovertibly justify the suspension of the pilot.

6.3 Compensation for Damage or Loss under International Aerial Law

General principle to pay compensation for torts of negligence, liability is imposed on various counts, i.e. illegality of actions, which are *ultra vires* per se; actions of ordinary negligence (the most important fact should be breach of duty); international wrongdoing; and a lawfully caused governmental loss. Compensation for these torts could be either on an ex-gratia basis or in the nature of statutory relief. Illegality or an act which is *ultra vires*, is the label given to fault in many civil law jurisdictions including France. Common law

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71 *Ultra vires* is a Latin phrase meaning “beyond the powers”.
jurisdictions, such as the UK, distinguish between illegality and fault, the latter being identified with negligence and the former being considered an act *ultra vires*. Where a breach of statutory duty imposed on a State authority was in issue, the remedy in early times was predicated upon the premise that if a person responsible for the act in question had a statutory duty of care, which was breached, an action lay at the suit of the aggrieved person.\[^72\] In the early twentieth Century, the Courts slightly adapted their fundamental approach to look at the intent of the statute, particularly whether the law intended to create a cause of action for its breach. The overall judicial philosophy was that if there were room for awarding compensation under the principles of tort law, there would be no room for action under the statute itself.\[^73\] A social interest statute enacted for the advantage of society would not give rise to a breach of duty action, unless negligence can be proved.\[^74\] This principle was followed because social legislation affects a class of persons and accommodation of an individual within that legislation was grounded on the discretion of the authority vested with power under the legislation concerned.\[^75\]

Significantly, under international air convention fixed amount of compensation is not mentioned but the states are asked to make law to fix liability in this regard and the amount of compensation is to be decided by the court depending upon facts and circumstances of the case.


6.4 Liability for Aircraft Hijacking

The Tokyo Convention, 1963, The Hague Convention, 1971, the Montreal Convention 1971, and 1991, protocol, 1988 defined hijacking and other related offences asked the member states to enact law to provide strict punishment for such offences. However, these Conventions were not sufficient to cover slightly different types of hijacking and attacks i.e., the use of an aircraft to cause death and destruction; other types of foreseeable terrorist acts, such as the use of weapons of mass destruction onboard, from, or against aircraft; and ancillary offenses, such as organizing or conspiring to commit such offenses. Therefore, Beijing Convention and Protocol, 2011 was adopted which made such offences punishable. Further, the Convention also have provisions of expanded jurisdiction;\(^\text{76}\) exclude activities of Armed Forces;\(^\text{77}\) and extradition and safeguards.\(^\text{78}\)

Therefore, these two international instruments are very important to combat international counter-terrorism and also the significant development in aviation law. It appears that the important provisions of the instrument such as new principal offenses, the ancillary offenses, expanded jurisdiction, and extradition and mutual assistance will bring all the individuals, under the net of law, for their role in terrorist or proliferation activities including those who participate before, during, and after such acts.

\(^{76}\) It include nationality of the offender as a mandatory ground for jurisdiction of States parties. This will help to expand the extra-territorial scope of the instruments and ensure that a greater number of States parties will have jurisdiction to prosecute or extradite known offenders. The instruments also include optional jurisdiction on the basis of nationality of the victims of offenses.

\(^{77}\) They exclude the activities of armed forces during an armed conflict from their scope because they are governed by the International Humanitarian Law (IHL).

\(^{78}\) Under the instruments, all offences are extraditable and none of the offense can be considered as a “political offense” so as to avoid obligations.\(^\text{79}\) But new provisions were incorporated for supporting extradition and mutual legal assistance obligations which provide that no State may be compelled to extradite a person or provide mutual legal assistance if there are substantial grounds to believe that it would lead to prosecution on discriminatory grounds.\(^\text{80}\) Also see Jyoti Rattan & Vijay Rattan, Public International Law, United Nations Human Rights & IHL, 744, (2nd Edition, 2014).
6.4.1 General Principles of Criminal Law in case of Hijacking

It is important to note that hijacking is a crime and criminal liability of hijackers arises under International Law. Therefore, general principles of criminal law are applicable to decide liability of the hijackers. Let's briefly discuss these principles applicable in case of hijacking.

i. *Nullum Crimen Sine Lege*: ("no crime without law") is the moral principle in criminal law and international criminal law that a person cannot or should not face criminal punishment except for an act that was criminalized by law before he/she performed the act.\(^79\) Therefore, to make a person liable for hijacking, his act must be covered under law (international convention).

ii. *Nulla Poena Sine Lege*: (no penalty without a law) is a legal principle, requiring that one cannot be punished for doing something that is not prohibited by law. This principle is accepted and codified in modern democratic states as a basic requirement of the rule of law. Therefore, the punishment not mentioned under the law cannot be given by the Court to hijacker.\(^80\)

iii. *Individual Criminal Responsibility*: International crime is committed by an individual and not by the state therefore, individual is liable for such crime. International criminal law can be enforced only by punishing the offender. Therefore,

\(^{79}\) Available at: [https://www.google.co.in/?gfe_rd=cr&ei=lXOjVcuTEsm08wevwpiAQQgws_rd=ssl&q=nullum%2bcrimen%2bsine%2blege%2bmeaning](https://www.google.co.in/?gfe_rd=cr&ei=lXOjVcuTEsm08wevwpiAQQgws_rd=ssl&q=nullum%2bcrimen%2bsine%2blege%2bmeaning) (visited on July 13, 2015).

for hijacking which is an international crime, offenders are to be punished and states are not to be held liable.\footnote{Id., at \textit{65}.}

iv. \textit{autde dereaut judicare:} A party to the international navigation treaty must either (1) prosecute a person who commits one of the offences or (2) send the individual to another state that requests his or her extradition for prosecution of the same offence.

Apart from these two principles, Universal Jurisdiction and principle of extradition is applicable in case of hijacking which are discussed in Chapter 3.

\section*{6.5 Liability under Space Law}

Generally an accident in launching is confined to the territory of a launching State but it is likely that in many instances another State may be involved. It is, therefore, important that space activities are subject to rules and an inter-connecting set of treaties, more precise than the principles of the OST. How responsibility must be established for supervision, for ‘ownership’ at the State level and for liability in the case of loss or damage or devastation needs clarification. What is going on can be the subject of general and accurate knowledge to decrease difficulties and to establish the connection between an occurrence and its creator. Astronauts should be safe and rescued. Space objects must be ‘returned to sender’ or at least ‘returnable to sender’.

A point on which the experts agree is that a satellite injected into low Earth orbit and parts of its launch vehicle will re-enter the atmosphere at some point in the future.\footnote{Francis lyall and Paul B Larsen, \textit{Space Law A Treaties}, 101 (Ashghat Ebook, 2009).} A space object entitled for ‘return’, could cause damage in re-entering to rest in the place from

\begin{thebibliography}{99}
\footnotetext[81]{Id., at \textit{65}.}
where it was launched. It is therefore not new that questions of damages were early presented in considerations as to a legal regime for space.\textsuperscript{83} Indeed, ‘liability’ for damage was intended to form a part of the drafting text of the ARRA, 1968.\textsuperscript{84} However, it was soon realized that liability was a question more difficult than that of aid to astronauts or the return of space objects, and so liability was left for later, more protracted negotiations. However, in view of the fact of space activities having a bearing on the actual application of law to ‘space’, it should not be thought that there was no applicable or prediction law in the absence of provisions specific to space activities. Ordinary international aviation law might, and still could be invoked,\textsuperscript{85} as, in an appropriate instance, might national law.\textsuperscript{86}

Significantly, in this regard, in July 1959 the UN’s Committee (COPUOS) first mentioned the importance of recognizing the need of a liability convention.\textsuperscript{87} Till date, there have been 30 space launches.\textsuperscript{88} Pressure to resolve the liability issue increased as the number of launches increased. However, little progress was discernible until 1962, when the United States introduced before COPUOS the first formal “proposal”, though not in the form of a draft treaty, to deal with the liability issue. By that time, the US and USSR had planned and attempted to launch in space or outer space more than 150 space objects. In 1964, when US introduced the first actual treaty (OST), the number of launchings was approaching four hundred, with the majority

\begin{itemize}
  \item Will see below that Article XII.2 of the Liability Convention contemplates the possibility of an action for damages being pursued under domestic law or another international agreement and out with the Convention provisions.
  \item Marven L. Whipple, Atlantic Missile Range/Eastern Test Range Index of Missile Launchings, 74 (1974).
\end{itemize}
initiated by US itself.\textsuperscript{89} Non-launching nations were, by then, particularly restive over the liability issue.

The operational Air Force had concerns about different responsibility and liability standards. Colonel Latella (expert in U.S Air force had concerned about various liability standards) noted that if the principle of “absolute liability”\textsuperscript{90} was to be accepted, then a limit for damages must be recognized. Carroll indicated that the US proposal on liability required extensive technical legal analysis.\textsuperscript{91}

By the starting meeting of the COPUOS Legal Sub Committee regarding the liability issue in 1962, the US delegation proposed that the Secretary General of the United Nations make an advisory group to draft a liability treaty.\textsuperscript{92} The treaty would incorporate five principles as follows:\textsuperscript{93}

1. If National and International organizations are launching space vehicles, they are internationally liable;\textsuperscript{94}

2. Claims in this case should be presented in a reasonable time;

3. Claimants before filing an international claim, are not required to file in local Courts;

4. Fault according to the damage need not be proven; and

5. Disputed claims would be settled by the World Court.\textsuperscript{95}

\begin{flushleft}
\textsuperscript{89} Ibid. \\
\textsuperscript{90} Liability not based on fault. \\
\textsuperscript{91} Will Carroll and Col John J. Latella (AFJAL) to Lt Col John L. Sutton (AFXPDPY), memorandum, subject: Liability for Space Vehicle Accidents, 83(1962). \\
\textsuperscript{92} The first apparent Air Force involvement regarding the liability issue occurred in May 1962 when Col John J. Latella and his associate, Will Carroll, provided comments to the Air Force Directorate of Plans on the issue of liability for space vehicle accidents. \\
\textsuperscript{93} Convention on the International Liability for Damage Caused by Space Objects \\
\textsuperscript{94} In such a situation, they would be liable for claims no matter where the injury occurred.
\end{flushleft}
None of these principles specifically addressed Colonel Latella’s concerns with regard to limit on the amount of damages to be paid by the governments. While the COPUOS Legal Sub-Committee’s first formal meeting on the liability issue ended in disagreement, international interest in space law remained high. The United Nations General Assembly (UNGA) passed a resolution indicating strong support and concern for the fact that COPUOS had not moved forward regarding space law issues. During 1963, in this regard the progress was going on slowly on the liability issue. Then in 1964, the States agreed on certain outer space principles. The UNGA requested that the COPUOS Legal Sub-Committee promptly draft an international convention regarding liability in conjunction with a convention to the rescue and return of astronauts and space vehicles.96

Having no formula for determining compensation for damages, a working group was appointed as proposed by the US and Canada. The working group discussed the limitation of liability issue previously raised by the Air Force.97 In preparing for the Legal Sub-Committee’s next meeting, the Air Force studied copies of the State Department’s position paper and a draft convention. The position paper recognized the need for some limit on liability but did not recommended the amount.98 The Legal Sub-Committee resumed its third session in October.99 Consequently, regarding this there was a movement toward the consensus, but no agreement was reached.100

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96 Christol, 62-63. refers to the 5 October 1964 meeting as the fifth session
97 *Law-How We Got To Where We Are*, (Department of State Airgram, 1 April 1971).
98 Subcommittee, Sess. III (Resumed), 5 October 1964: and Liability for Damage Caused by the Launching of Objects into Outer Space, position paper, 18 September 1964.
99 Supra note 24 at 68.
COPUOS held meeting in 1966, but dealt almost exclusively with the OST. Even while actively involved in the COPUOS discussions regarding the Principal Treaty, the US continued to refine its position regarding the liability issue. After talks with UK, Belgium, Australia and Canada, the US outer space delegation suggested revision of the draft US convention regarding liability. As the US revision became ready to COPUOS, US agreed to join Belgium in introducing a new jointly sponsored draft convention at the next COPUOS session.

Significantly, under OST, in general, a State is responsible only in the case if acts are attributed directly to it, or indirectly through the acts of its officials performing in an official capacity. According to this, it should be known that a State is not responsible for the activities of its nationals. The Trail Smelter Arbitration (US v. Canada) of 1935 described that a State can be responsible if it permits the use of its territory by private individuals in a way that causes damage to another State. It clearly lays down international responsibility (liability) for national activities in outer space on a State party. According to this principle, it includes activities conducted by non-governmental bodies as well as those conducted by State organs. The activities of non-governmental bodies must be authorized by the State of their nationality and be subject to its continuing supervision. However, questions may be raised as private enterprises enter space and seek to incorporate and exercise their business activities in States that may lack the personnel, knowledge or expertise, to discharge the liabilities. The space activities of an

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101 Articles VI and VII the OST universal treaty, are partially innovative and go together.
102 A state is not liable for an accident caused by the careless driving of a private citizen national.
103 Trail Smelter Arbitrations (US v. Canada) (1938 and 1941) 3 RIAA 1905–82.
104 Article VI of OST, 1966.
international organization must also comply with the provisions of the OST.\(^{105}\)

However, according to the above decision, it can be said that the duty is laid on both the organization and the OST parties that are its members.\(^{106}\) However, space is different where any damage is likely to occur swiftly and may often be catastrophic. Space activities are inherently dangerous, so it is only logical that they need to be completely supervised and that liability must follow in the event of loss or damage.\(^{107}\) If a State is liable for loss or damage caused to another party through its own activities regarding space or of those subject to its licensing, supervision and jurisdiction,\(^{108}\) such an extension of responsibility and liability of a State to damage caused by its non-State entities is unusual in international law. Lets briefly discuss liability under different international conventions.

### 6.5.1 Liability and Responsibility under OST, 1967

The basic principles of responsibility for space missions, the control to be exercised over space activities and jurisdiction in such matters are mentioned under the OST.\(^{109}\) By OST a State bears international liability for its own and the activities of its nationals in outer space.\(^{110}\) The activities of nongovernmental entities are to be duly authorized and to be subject to continuing supervision by the appropriate State. Responsibility for activities by a specific international organization is to be created by that organization and member countries to the OST. A State party to the OST on whose registry an object is launched into space retains jurisdiction and

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\(^{105}\) Article VI of OST, 1962.

\(^{106}\) Article VII of OST, 1962.


\(^{108}\) Article VII of Liability Convention, 1967.

\(^{109}\) Articles VI and VIII of OST, 1968.

\(^{110}\) Ibid.
control over the object and any personnel. Appropriate registration is therefore significant, and the requirements have been extended by the Registration Convention, 1975. Similarly, the ownership of a space object constructed elsewhere than on Earth is unaffected by that origin. There is no recommendation that a State or other organism could divest itself of obligations in concern to space objects by their abandonment. In short, a State cannot stop to be ‘liable for’ or avoid any correlative duties by abandoning a space object.

Some could argue that according to the international law of treaties such provision applies only to parties to the OST. It is hard to accept such a recommendation, although, particularly in relationship to space debris, an ‘owner’ may be difficult to find. The generality of the rules as to the use of space would be needlessly accommodating were a State to avoid its obligations by a process of abandonment.

If the activities incur loss, a nexus is constituted between them and the home State, sufficient to impute responsibility on the part of the State. The last plank in the OST liability regime introduced without further explanation is the idea of a registry of space objects to be maintained by individual States. A State on whose registry an object is launched into outer space retains jurisdiction and control over the object and over any personnel on the object while it is in outer space or on a celestial body. Naturally put, this means that a

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111 Article VIII of OST.
112 Ibid, Article VIII.
113 Ibid.
114 In theory, territory may be formally abandoned. ‘Abandonment’ of territory may also be inferred. We are unaware of any consideration of the formal abandonment of ‘things’ as opposed to ‘objects’ in international law.
115 The failure of a state to authorize would not allow it to escape liability. Cf. the ILC Draft Articles on State Responsibility (n. 95). However, note also the problem of post launch transfer of ownership of a satellite from an owner in one state to an owner in another The Netherlands has indicated its view that such a transfer imposes duties on the state of the new owner as to operation under OST Art. VI and jurisdiction and control under OST Article VII, but not under ARRA, the Liability Convention or the Registration Convention, although The Netherlands is party to all three.
116 Article VIII. Outer Space Treaty.
State should not get out of its international commitments through the abandonment of the object. The provisions of the OST therefore, provide for a regime of liability for damage caused by a space object, fix the responsibility to authorize and supervise space activities, and shut the door on the avoidance of liability and duties as to control and supervision. In summary, we can notice this important point that the Treaty is imprecise as to the nature of the liability for damage, given that in the 1960s the International Law Commission was only in the middle of its discussions as to State responsibility.\footnote{117}

The Registration Convention 1974, considered above and the Convention on International Liability for Damage Caused by Space Objects of 1972 provide a system under which States responsible for space objects may be traced, and compensation for damage recovered from them.\footnote{118}

### 6.5.2 Liability under Registration Convention, 1967

The Registration Convention is a significant convention on the UN Registry. When an object is launched into space, it must be registered. It must be entered on a register maintained by the State of launching as defined in the Registration Convention.\footnote{119} In addition, it must be entered on one of the two registers maintained by the UN relating office (OOSA), the one listing of launches provided to COPUOS under United Nations,\footnote{120} and the other maintained in terms of the Registration Convention itself.\footnote{121} Internationally registration is the most important, allowing the identification of at least one of the

\footnote{117}{Robbert Williams, *Arms control History Theory and Policy*, Vol 1, 358 (Santa Barbara, 2011).}
\footnote{118}{That said, it was something of a relief – not to say a necessity – that the OST provisions as to liability for damage have been further elaborated.}
\footnote{119}{Article 1 of Convention on the Registration of Objects Launched into Outer Space of 1975.}
\footnote{120}{United Nation Res. 1721 (XVI) (1961).}
\footnote{121}{“Practice of States and International Organizations in Registering Space Objects: Background Paper by the Secretariat”, (COPUOS), A/AC105/C.2/L.255 + Corr. 1 and 2 (2005).}
States involved in the launch of a space object in case if damage and liability happens. It has other aim, but this entry is important for recognizing responsibility, for 'ownership', for the exercise of control and in the worst case, for liability.

The idea of an official register for various purposes is not new. In most countries information as to the ownership of immoveable property is compiled in an official register. Many types of mobile property are similarly dealt with.\(^{122}\) It was therefore not new that a General Assembly Resolution called on States to 'furnish information promptly'\(^{123}\) to COPUOS 'for the registration of launchings', and requested the Secretary General to maintain a public register of the information received, and this has been done.\(^{124}\) Two years later, Declaration on Space Principles, 1963,\(^{125}\) referred to a State having a registry of 'objects launched into outer space' and to the 'State of registry' of a 'space vehicle'. However, it took further 13 years for the idea of registration of space objects fully to emerge in treaty form setting out the data to be registered.\(^{126}\) In the meantime, OST\(^{127}\) provided that a State Party to the Treaty on whose registry an object

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\(^{123}\) UNGA Res. 1721 (XVI) of 20 December 1961.

\(^{124}\) Information so supplied is published by COPUOS in the A/AC.105/INF series, available on the OOSA available at: http://www.unoosa.org/oosa/en/SOResister/index.html, (visited on May 13, 2014). So far (2007) twenty-eight states have registered data under the Convention procedure. A defect of the Res. 1721 procedure is that it does not require the detail that the Convention does, although some states notifying under it do provide that information. Thus the Italian notification for the ITALSAX F2 (A/AC.105/INF.400) of 26 November 1996 contains data on the weight of the satellite and uplink and downlink frequencies used.

\(^{125}\) Paras 7 and 9 of the Registration Convention, 1963.


\(^{127}\) Article VII of the OST.
launched into outer space is carried, retains jurisdiction and control over it and its personnel.\textsuperscript{128} 

The Registration Convention provides for the registration of objects launched into outer space in a formal official registry maintained by the relevant State. It also provides for a central world register with open public access to be maintained by the UNSG.\textsuperscript{129} These national and international registries make procedures to assist in the identification of space objects additional to any other means of identification that may exist specially in case of liability in launching objects. This mandatory system therefore allows space objects to be identified both for the purposes of planning a launch and equally (or more) importantly as a means by which space objects that have caused damage may be traced to their launching States.\textsuperscript{130} Registration also establishes a link between a space object (and any personnel aboard) and a particular State for the purposes of jurisdiction, control and the return of astronauts set out in OST.\textsuperscript{131} The Registration Convention defines the term ‘launching State’ as (1) a State that launches a space object or (2) a State from whose territory a space object is launched or (3) a State which procures the launching of a space object or (4) a State from whose facility a space object is launched.\textsuperscript{132} 

It is therefore, conceivable that for the aim of the treaty the ‘launching State’ may be connected with the actual launch in one of

\textsuperscript{128} The Convention on Registration of Objects Launched into Outer Space was adopted by Resolution 3235 (XXIX) of the General Assembly of the United Nations on 12 November 1974, and opened for signature on 14 January 1975 in New York. As provided for by its Article VIII, 3, it entered into force on 15 September 1976. The Depositary is the Secretary General of the United Nations (Article XII). 

\textsuperscript{129} Article III, of the OST. 

\textsuperscript{130} While technically the Registration Convention applies only as between parties to it, one may hope that, should a non-party state suffer damage from or by a space object, the procedures of the Convention would allow it to identify which states or states might have caused the damage. Cf. also Article XXI of the Liability Convention 1972 discussed below. 

\textsuperscript{131} Articles V and VIII of the Outer Space Treaty. 

\textsuperscript{132} \textit{Ibid}, Article I.
four ways. The term ‘space object’ is defined to include the component parts of a space object and also its launch vehicles and parts thereof.\textsuperscript{133} This latter definition is important since it means that debris may be included within the compass of the Convention.\textsuperscript{134} The term ‘State of registry’ is defined to mean a launching State on whose registry a space object is carried in accordance with the Convention.\textsuperscript{135} It is important to mention that it is the duty of the launching country to maintain a registry of space objects, and to enter a space object which it has launched into Earth orbit or beyond, on that registry.\textsuperscript{136} A launching State is required to inform the Secretary General of the United Nations of the establishment of such a registry.\textsuperscript{137}

According to this, some States record a great deal in their national registers. A good example of which is Argentina, which registers the following information:\textsuperscript{138}

i. If the object has been launched jointly with one or more other launching States, the international treaties and conventions concluded with such State or States;

ii. An appropriate designator of the space object;

iii. Anticipated date and territory or location of launch;

iv. Anticipated basic orbital parameters, including:

a) Nodal period,

\textsuperscript{133} \textit{Ibid}, Article I(b).

\textsuperscript{134} A number of notifications relate to ‘debris’ from satellite launches and deployments. See, for example, notifications by the US by Notes Verbale of 1977 (ST/SR/SER.E/5) and 2004 (ST/SR/SER.E/449), both available on the OOSA website.

\textsuperscript{135} Article I(c) of the Registration Convention.

\textsuperscript{136} See Note that the duty to register emerges “[w]hen a space objects is launched into earth orbit or beyond” (Article II.1). Prospective registration or the registration of a failed launch does not happen. An entry on the register is deleted when the object is no longer in Earth orbit (Article IV.3).

\textsuperscript{137} \textit{Ibid}, Article II.1.

\textsuperscript{138} Article 5 of its National Decree no. 125/95, “Establishment of the National Registry of Objects Launched into Outer Space”,

b) Inclination,
c) Apogee and
d) perigee;
v. Anticipated general function of the space object;

vi. Name and address of the owners and/or

a) The name of the launching State or States;
b) An appropriate designator of the space object or its registration number;
c) The date and territory or location of the launch;¹³⁹
d) The basic orbital parameters including:
   (i) The nodal period,¹⁴⁰
   (ii) The inclination,¹⁴¹
   (iii) The apogee and
   (iv) The perigee of the orbit; and

Vi The general function of the space object

In addition, since a major purpose of the Registration Convention is the identification of a space object, this Convention provides that when a space object launched into Earth orbit or beyond is marked with a designator or registration number or both,¹⁴² the State of registry is to notify this datum to the UN when submitting the basic

¹³⁹ Ibid.
¹⁴⁰ It signifies the time period which an object takes to complete one orbit.
¹⁴¹ The angle between the plane of the orbit and the plane of the ecliptic stated in Degrees, 90° being a polar orbit.
¹⁴² Article V of Registration Convention.
information required. It is also open to a notifying State to provide additional information should it so wish. Correlative to the duty to notify an entry in the registry, a State is required to notify the Secretary General ‘to the greatest extent feasible and as soon as practicable’ of space objects already notified to the Secretary General but which are no longer in Earth orbit. Operators of the space object are:

(i) Identification of the firms participating in the construction of the space object and of its launch vehicle;

(ii) Identification of the launch service provider;

(iii) Information on the insurances arranged;

(iv) Identification of the party responsible for exercising control over the space object;

(v) Location and characteristics of the satellite tracking, telemetry and command (ttc) station and of the master or tracking station, if applicable;

(vi) On-board transmission power and frequencies of the space station;

(vii) Mass of the space object;

(viii) Anticipated useful life of the space object;

143 Article 6 of the 1959 “Project of an International Convention on Space Law”. Article 6 would have required clear nationality markings on spacecraft.

144 Thus the European Space Agency has taken to providing data on the radio frequency plan being used by space objects which it notifies. See the relevant entries in the ST/SG/SER.E/INF series on the OOSA website. And See Article IV.2 of the Registration Convention.

145 For example, Note Verbale of 18 February 2004 from The Netherlands, that a former INTELSAT and later New Skies satellite is no longer in geostationary orbit: A/AC.105/824. Notwithstanding Article IV.3, the UN Register still carries data on non-Earthorbiting space probes such as Pioneers 10 and 11: see A/AC.105/INF.255 and 275.
(ix) Precautions taken with regard to non-pollution of outer space, including celestial bodies, in particular whether mechanisms have been provided for placement in a transfer orbit at the end of the useful life of the space object;

(x) Anticipated date of disintegration, recovery or loss of contact with the space object;

(xi) Identifying mark located on non-disintegrable parts.

Another important feature of this convention regarding liability is when the mission of a registered space object is complete, or at the end of its useful life, or if it becomes disabled by accident or otherwise such that it is unfit for further use, then that information is also recorded in the Register.146

With the development of commercialization and private enterprise in space, a problem has emerged which the Registration Convention did not have in contemplation.147 Could a ‘launching State’, which carried a space object on its registry, transfer its responsibilities? This has implications for both international trade and commerce in space assets, and for the rights and duties of States.148 As a matter of practice, transfers between registries do occur. AsiaSat1 and 2 and Apstar-I and IA were transferred from the UK registry to China as part of the transfer of Hong Kong to China.149 This created no difficulties as China was the territorial launch site, but the transfer of INTELSAT satellites to Dutch company New Skies NV was a different

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147 Ibid.


149 See the entries for Asia Sat 1 (1990-030A) and Asia Sat 2 (1995-064A) in the OOSA Registry, together with UK Note Verbale of 27 March 1998: ST/STG/SER.E/333, and related Note Verbale by China, ST/STG/SER.E/334, both covering all four satellites.
matter. Following the transfer, the OOSA registry displayed information as to them in square brackets and highlighted them in green, the method OOSA uses to indicate that the data is known to OOSA but has not been officially provided under the Registration Convention.\(^{150}\)

At last, it must be asked as to whether the Registration Convention remains useful without vital revision even with implementation of the suggestions.\(^ {151}\) In the light of the comments, the answer must be equivocal. First, the Convention remains in many ways disapproved.\(^ {152}\) It has not yet been used to determine whether a particular object, which has caused damage, is detectable to a specific country.\(^ {153}\) Second, it is lucid that not all launches are notified in regarding with its terms, though this may be disproved.\(^ {154}\) Third, some notifications are not made as timorously as is desirable. The latter criticism means that the UN Register is not an authentic source of information for those planning launches. The Master IFR maintained by the ITU might be more helpful, albeit it cannot contain data as to debris and other space objects that are not radio stations.

Unsurprisingly, therefore, informal arrangements now exist under which some at least of the potential launching States notify each other of some impending launches and exchange information as to the similar space objects. While one objective of these arrangements is the

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150 According to its website, OOSA gets its unofficial information from the media, from official press releases, from the Committee on Space Research (COSPAR) and from the World Warning Agency for Satellites which publishes the ‘Space Warn Bulletin’. Available at: http://nssdc.gsfc.nasa.gov/spacewarn/. “Satellite Industry Links”, available at: http://www.satellitelinks.co.uk/directory/wwas.html. Other amateur publications also publish satellite data.


153 So far as we understand the matter, objects ‘found’ and returned to their ‘owners’ have so far been identified by information on the object, not by the use of the Convention to calculate their probable origin.

154 Some military satellites are not registered.
avoidance of false alarms as to a nuclear attack, another effect is that governments can make their activities while in possession of relatively up-to-date data.\footnote{S.C. Larrimore, “International Space Launch Notifications and Data Exchange”, 23 Space Policy 172–179 (2007); cf. R. Cargill Hall, “Comments on Traffic Control of Space Vehicles”, 31, J. Air L. and Comm., 327–342 (1965). See also “The Hague International Code of Conduct against Ballistic Missile Proliferation”, 2002 (HCOC) under which state subscribers to the Code notify each other in advance of launches into outer space or test flights giving detail of the planned launch notification window, the launch area and the planned direction of the launch (Article 4 A.iii). available at: http://www.acronym.org.uk/docs/0211/doc13.htm. available at: www.armscontrol.org.} May be the future exists along these informal mutual contacts instead of the cumbersome procedures of registration with the UN. If not, the Registration Convention would be amended or administrative practice developed to supplement it. A central registration and exchange point for intended launches and the timely notification of actual launches would also be useful. Of course this raises the specter of the ‘phantom satellite’ that plagued the ITU procedures,\footnote{F. Lyall, “Paralysis by Phantom: Problems of the ITU Filing Procedures”, 39 Proc IISL 187–193 (1997). Tightening the requirements of notification under the ITU procedures has diminished the problem. See Chapter 8.} and so the principle of ‘first come, first served’ should not be available in such a development.

\textbf{6.5.3 Liability under Rescue and Return Agreement, 1968}

The aphorism ‘what goes up must come down’ is not always true for space objects. Regarding this, mass of objects launched into low Earth orbit (LEO) are likely to come down to Earth in due course.\footnote{The useful life of a LEO satellite is about five years, and most re-enter the atmosphere within ten years.} Other objects may be brought back deliberately.\footnote{Article 7.3 of Return Agreement.} Accession to ARRA takes place immediately on deposit of an appropriate notice with the depositaries.\footnote{\textit{Ibid}, Article 7.4.} Any State party might propose amendments to the treaty. Withdrawal from the treaty is allowed, taking effect one
ARRA distinguishes between the duties owed by contracting members to the personnel of a spacecraft and those in relation to a space object. The latter term includes but is not necessarily confined to a spacecraft (i.e. a space object capable of carrying an astronaut), encompassing also ‘component parts’. ARRA uses the term ‘launching authority’, a more concise and restricted formulation than that of ‘launching State’ found in the Liability or Registration Conventions. However ‘launching authority’ is the State responsible for the launching of an object or in appropriate cases the intergovernmental organization concerned in the launch, provided that the organization has accepted rights or obligations under the Agreement. ARRA therefore is not in harmony with the Liability or Registration Conventions. Its phrase ‘State responsible for launching’ is highly ambiguous.

It is important to mention that much of ARRA is about the return and rescue of astronauts. However, the circumstances of ‘rescue’ might also involve a spacecraft – that is a space object. Even if a ‘rescue’ operation is not being successful, the search could find a space object, or parts of a space object. Accordingly, ‘rescue’ elements, which would be relevant to both a space object and to personnel, are outlined here. In this regard, ARRA deals with the

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161 As of 1 January 2008 ninety states had ratified ARRA, a further twenty-three having signed but not yet ratified.
162 Articles 5 and 6 of the Registration Agreement, 1971.
163 Article 6 of the Registration Agreement, 1971.
164 The problem of the space object transferred post-launch from an owner in one state to an owner in another.
165 Article 6 of Liability Convention, 1968.
initial dissemination of information about an incident.\textsuperscript{166} A contracting party receiving information or discovering that the pilot of a spacecraft has had an accident, or is experiencing conditions of distress, or has made an emergency or unintended landing has two duties. It should notify the launching authority of the space objects. Rescue operations are subject to the direction and control of the contracting party which is to ‘act in close and continuing consultation’ with the launching authority.\textsuperscript{167} The thrust of ARRA is that it is for the rescuing State, not the launching State, to deal with the matter, inferring that the launching authority has to be invited to participate in rescue operations. It would therefore seem that it is for the territorial State to decide whether to ask for the help of the launching State.\textsuperscript{168} This is significant, where the spacecraft itself might be of acute interest to the launching authority.\textsuperscript{169}

Further, such notice is also to be given by the contracting State to the UN Secretary General.\textsuperscript{170} The same applies if the returned object is discovered by any contracted State on the high seas or any other place.\textsuperscript{171} In the normal case (not under the jurisdiction of a State), if the object is in territory under its jurisdiction and at the request of the launching authority, a contracting party is required to take such steps

\begin{footnotesize}
\begin{itemize}
\item[\textsuperscript{166}] Article 1 of ARRA, 1968.
\item[\textsuperscript{167}] \textit{Ibid}, Article 2.
\item[\textsuperscript{168}] Cf. statements by the US quoted by Dembling and Arons that should the territorial party and the launching authority not agree ultimately ‘the territorial party would of course have the final say in the matter’.
\item[\textsuperscript{169}] Francis Lyall and Paul B. Larsen, \textit{Space Law and Treaties}, 99 (Pub Ashghat ebook, 2009).
\item[\textsuperscript{171}] Article 5 of ARRA, 1968.
\end{itemize}
\end{footnotesize}
as it finds practicable to recover the object or parts.\textsuperscript{172} There is no
obligation to recover an object if the launching State does not so
request, and what is practicable is for the finding State to determine.
In a recovery operation, the territorial State has discretion to ask for
the assistance of the launching authority, but the launching authority
has no power to intervene.

Instead of making the request for the recovery,\textsuperscript{173} objects found
beyond the territorial limits of the launching authority are to be
returned to or held at the disposal of the representatives of the
launching authority.\textsuperscript{174} If asked, the launching authority is required to
provide identifying data prior to the return of the object or parts
concerned. The expenses of recovery and return are to be borne by the
launching authority.\textsuperscript{175} The object or its component parts may be found
to have hazardous or deleterious elements.\textsuperscript{176} In this instance, the
contracting party finding it may notify the launching authority which
is then under a duty to take effective steps under the direction and
control of the contracting party ‘to eliminate possible danger or
harm’.\textsuperscript{177}

These are interesting provisions, but they do not clearly deal
with the case of all objects that may be found. There are spent robotic
probes on the Moon, as well as the landing modules of the Apollo
series of landings and debris from various ‘impact tests’. There are

\textsuperscript{172} \textit{Ibid}, Article 5.2.
\textsuperscript{173} \textit{Ibid}.
\textsuperscript{174} \textit{Ibid}, Article. 5.3.
\textsuperscript{175} \textit{Ibid}, Article. 5.5.
\textsuperscript{176} \textit{Ibid}, Article.5.4.
\textsuperscript{177} Prior to discovery of the debris in the Cosmos 954 incident, the Canadian authorities
inquired of the USSR about the fuel the satellite carried. When notifying the USSR of
the discovery of the debris on its territory Canada did refer to ARRA. In due course
the formal claim for compensation was made in terms of the Liability Convention.
The USSR was not asked in terms of Article 5.5 of ARRA to ‘take effective steps’ to
eliminate the danger, perhaps because Canada (and the US) hoped to learn much from
the debris. In the 1991 Salyut/COSMOS-1686 case (previous note) no potentially
harmful substances were involved.
active and spent probes on Mars as well as the remains of unsuccessful landings. There are dead satellites, and all sorts of orbiting debris. While this convention largely predicates action on the request of the launching authority, and, of course, ownership is unaffected, there may be a case in the future for requiring the removal of some space objects at the expense of their launching authority.

6.5.4 Liability under Liability Convention, 1971

In an important step, on the Report of the Committee for the Peaceful Uses of Outer Space (COPUOS), the UN General Assembly enacted the Convention on International Liability for Damage caused by Space Objects in 1971.\(^{180}\)

Significant feature of the Liability Convention 1971, is that it applies to entities other than members. Its provisions\(^{181}\) apply to any international intergovernmental organization conducting space activities if the organization declares its allowance of the rights and obligations provided by the convention and majority of the members

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178 Article 5 of the registration convention A small plaque beside the replica of the Viking I Mars Lander in the Smithsonian Air and Space Museum in Washington DC, affirms the US property right in the Lander located on Mars, “NASA having transferred its ownership to the Smithsonian", available at: http://www.nasm.si.edu/exhibitions/GAL100/viking.html. On 11 December 1993, at Sotheby’s New York as part of a sale of Russian space memorabilia, the Lunokhod-1 lunar rover, launched 10 November, landed 17 November 1970 on the Mare Imbrium Sea of Rains) was sold for US$60,000 (estimate US$5,000). The location of the object was stated as ‘resting on the surface of the Moon’. Sotheby’s and the consignor of the object for the sale undertook no obligation to deliver possession. Only the current title rights of the owner were sold, without assurance as to the claims of others, including possible salvagers. See P.D. Negoș, *UN COPUOS Symposium on Commercial Activities in Space*, (March, 1994).


181 Other than those dealing with its signature, ratification and amendment.
of the organization are parties to the OST.\textsuperscript{182} State members of such space-active organizations, which are party to the Liability Convention, are supposed to take steps to ensure that the organization does make such a declaration. However, only the European Space Agency (ESA) and the European Telecommunication Satellite Organization (EUTELSAT) has created such declaration by 2008. Of the Convention by Resolution of its Council, ESA created principles for the apportionment of responsibility among its members and the agency itself in appropriate instances.\textsuperscript{183} Liability Convention notes that notwithstanding the precautionary measures to be taken by States, such objects may on occasion cause international intergovernmental organizations involved in the launching of space objects, damage. The convention then recognizes ‘the need to elaborate effective international rules and procedures concerning liability for such damage and to ensure, in particular, the prompt payment of a full and equitable measure of compensation to victims of such damage’. The Convention was therefore, agreed in order to strengthen ‘international collaboration in the field of the search and science and use of outer space for peaceful purposes’.

Significantly, the purpose of the Convention being to deal with international liability for damage caused by the space objects, the term ‘damage’ is defined as ‘personal injury, loss of life, or other impairment of health; or loss of or damage to property of persons or of States, natural or juridical, or to property of international intergovernmental organizations’.\textsuperscript{184} The term ‘space object’ includes

\textsuperscript{182} Article XXII.1, International Liability Convention, 1971.


\textsuperscript{184} There are questions as to what is ‘damage to property’: does it include indirect damage such as loss of profits? Some legal systems do not recognize indirect damage, considering it too speculative., and cf. Art. 30 of the Russian Federation Law on Space Activities under which the Federation guarantees full compensation for ‘direct damage inflicted as a result of accidents in carrying out space activity in accordance with legislation of the Russian Federation’.
component parts of a space object also including its launch vehicle and parts thereof.\textsuperscript{185} It is commonly accepted that ‘parts thereof’ may include debris caused by the breakup of a launch vehicle.\textsuperscript{186} Liability under the Convention attaches to a ‘launching State’. This means a State which launches or procures the launching of a space object, as well as a State from whose territory or facility a space object is launched.\textsuperscript{187}

In the effect, the convention does not apply to damage caused by a launching State to its own nationals\textsuperscript{188} or to foreign nationals while they are taking part in the operation of the space object from the time of its launch. Neither is it applicable at any stage after that until its descent, or while they are in the immediate vicinity of a planned launch or recovery area if they have been invited into that area by the launching State.\textsuperscript{189} The exclusion of ‘foreign nationals’ may be explained by the maxim volenti non fit injuria.\textsuperscript{190} Nevertheless, one should assume that in such circumstances the launching State could either insure these foreign nationals or be willing as an act of grace to provide full compensation for any damage caused to them.\textsuperscript{191}

A State, which is suffering damage or whose natural or juridical person has suffered damage by a space object, may declare and ask for compensation from a launching State.\textsuperscript{192} The process starts with the

\begin{footnotes}
\footnotetext{185}{Article I (d) of the Liability Convention.}
\footnotetext{186}{In its note verbale of 16 April 2004 giving Information on Registration of Objects Launched into Outer Space, for January and February 2004, the US includes ‘objects not previously reported’ but which had been identified since the previous US report. These objects for which the required basic orbital characteristics are given.}
\footnotetext{187}{OST Article VI, ‘launching state’ is defined by Article I(c) of Liability convention and see Francis lyall and Paul B Larsen, Space Law A Treaties, 107 (Pub Ashghat Ebook, 2009).}
\footnotetext{188}{It did not apply to ground damage in the US from the break-up of the Shuttle Columbia on re-entry in 2003.}
\footnotetext{189}{Article VI I(b) of International Liability Convention.}
\footnotetext{190}{In common Law, Volenti non fit injuria (or injuria) is derived from a Latin term which means that “to a willing person, injury is not done”}
\footnotetext{191}{Article VI I (a) of International Liability Convention.}
\footnotetext{192}{Ibid, Article VIII.1}
\end{footnotes}
sending of a diplomatic note to the launching State involved by an appropriate channel.\textsuperscript{193} If diplomatic relations between the damaged State and the launching State are non-existent or suspended, the claim may be submitted through some other State or through the United Nations Secretary General (UNSG), if both the claimant State and the launching State are UN members.\textsuperscript{194} In all this years, one claim has been made, i.e. the Cosmos 954 incident.\textsuperscript{195}

From the above discussion of international conventions related to space law it is concluded that the three UN treaties, the Agreement on the Registration Convention,\textsuperscript{196} the Agreement on Rescue and Return of Astronauts (ARRA) Convention, \textsuperscript{197} and the Liability Convention, \textsuperscript{198} expand the provisions of the Outer Space Treaty (OST), \textsuperscript{199} for giving their parties a degree of precision to the rights and duties of States in the exploration and use of space, which it had set out. These treaties are now decades old and need improvement.

\textbf{6.6 Compensation for damage or loss under International Space Law}

It is important to note that liability under space law is tortuous and hence compensation is to be given for damage or loss incurred due to accident of launched space object. In this regard the five space treaties have imposed duties on the launching state to pay compensation. The duties as to compensation for loss or responsibility under both OST\textsuperscript{200} and, where relevant, the Liability Convention, devolve as a matter of international law on the launching State.

\textsuperscript{193} Ibid. Article IX.
\textsuperscript{194} Ibid. Article IX.
\textsuperscript{196} Ibid.
\textsuperscript{198} More details is available in Chapter 3 and Chapter 5 of this study.
\textsuperscript{199} Ibid.
\textsuperscript{200} Article VII of the OST.
However, a common condition of the grant of the license to engage in a space activity to non-State entities is that the licensee exhibits an insurance policy covering in whole or in part, the compensation for which the State might be responsible in the occurrence that the activity causes liability.

6.7 Liability and Air and Space Law: National Scenario

Most of the early advancements in air traffic and space law being limited to US and other western countries, it is apposite to look for development of laws in those jurisdictions in this area. In the US and in most European nations, aviation law is considered a federal or State-level concern and is regulated at that level. Regarding damage and liability in aviation matters states in the US in most cases cannot directly govern but instead refer to federal laws and case laws. Aviation law in US, however, is not held under the same Federal mandate of jurisdiction as admiralty law i.e., while the US Constitution provides for the administration of admiralty, it does not provide such for aviation law. However, States and municipalities do have some indirect regulation over aviation. The best example in this regard is Zoning laws, which can be enforced to require an airport to be located away from residential areas, and flights can be restricted to certain times of the day. State Products Liability Law is not preempted by Federal law and in most cases, aviation manufacturers may be held strictly liable for defects in aviation products.


202 Zoning is describes the control by authority of the use of land, and of the building thereon areas of land are divided by appropriate authorities into zones within which various uses are permitted.

203 Supra note 2.
British Commonwealth of the UK enacted the Transport Act and Air Navigation Act in 1920, which formed the basis of aviation regulation in the British Empire and Commonwealth.\textsuperscript{204}

In the US, the Air Mail Act of 1925 and the Civil Aeronautics Act of 1938 formed the early basis for regulation of domestic air transportation. The United States established a Federal Aviation Agency (FAA) in 1958.\textsuperscript{205} The Airline Deregulation Act of 1978 was a watershed in the US air transportation industry and greatly increased the regulatory workload of the FAA as new operators were allowed to apply for operating certificates.\textsuperscript{206}

Communist bloc and The USSR declared sovereignty over its airspace and enacted basic aviation regulations in 1921, forming a State-owned Civil Air Fleet in 1923, which became known as Aeroflot in 1932. Other communist States followed a similar pattern in establishing State-controlled entities for civil aviation, such as the Civil Aviation Administration of China in the People’s Republic of China and Interflug in East Germany.\textsuperscript{207}

Japan enacted a legal regime governing civil aviation in 1952, after a brief moratorium during the occupation that followed World War II. While the early domestic air travel market was lightly regulated and highly competitive, the government implemented a regulation system in 1970 which limited service to three carriers (Japan Airlines, All Nippon Airways and Japan Air System), with largely separate markets and strictly regulated fare levels that minimized competition. Pressure from the United States, which sought

\begin{itemize}
\item[\textsuperscript{205}]Which became the Federal Aviation Administration, a unit of the newly-formed United States Department of Transportation, in 1967.
\item[\textsuperscript{206}]Federal Aviation Administration, retrieved on 25 March 2015.
\end{itemize}
to introduce new US carriers to the transpacific market in the 1980s, led Japan to gradually deregulate its market in the form of cheap packaged-tour fares and an increased international role for ANA in the 1980’s and 1990’s, followed by the advent of new domestic carriers such as Skymark Airlines and Air Do.208

On the whole liability under air navigation law and space law is a tortuous liability where amount of compensation is to be decided by the courts. However, in case of aircraft hijacking there is criminal liability and punishment is to be provided according to state law enacted by the members state to implement international space treaties.