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# EDITORIAL

The development and application of aerospace technology has resulted in tremendous global impact in diversified fields including social, economic, cultural and scientific. With the increasing globalization of economies, liberalization of space policies, new technological developments in aerospace industry, privatization of some of the aerospace segments, and the growing trend in noninterventionist bilateral and multilateral agreements, there is a development of new trends that are emerging in the aerospace industries throughout the world. Privatization and intensified global competition are forcing aviation and space industries to become responsive, increasingly competitive, and efficient and committed by focusing more closely on their stake-holders.

Over the past few years in India, the attitude of the Government and the Aero-Space industry towards the regulation of aerospace activities has undergone a profound change in almost all spheres. It has been progressively looking forward to privatizing and commercializing space assets expand and develop capability in space exploration and scientific discovery, commercialize its competence to build satellites and offer launch service from its launch vehicles. All these developments are resulting in new concepts of ownership, financing, management and operation of space industry, which are the emerging trends and the hot topics of deliberation in India.

While India has accomplished international acclaim in the area of aerospace technology development and utilization, it is yet to see an integration of efforts at the national level from the standpoint of the private sector.

In this regard, I take immense pleasure in introducing the second issue of Indian Journal of Air and Space Law' at the Centre for Air and Space Law, NALSAR University of Law, Hyderabad. IJASL is a bi-annual legal publication that focuses on the evolving intersection of air and space law. This area of study draws on a number of legal specialties: each of which is undergoing doctrinal and practical changes as a result of new and emerging technologies and contemporary developments. Through the journal, we intend to examine new developments, synthesize them around larger theoretical issues, and critically examine the implications.

The journal is the outcome of relentless effort of Prof. Dr. Faizan Mustafa, Vice-Chancellor, NALSAR University of Law, Hyderabad. Prof. Mustafa's constant, unconditional and encouraging support coupled with exemplary leadership, pleasing personality and exceptional administrative skills have been a source of inspiration to us. He has always directed my academic path to evolve avenues for research, publication and achieve higher levels of excellence.

I, on behalf of my Editorial Team, profusely thank our Patron for entrusting his faith in our abilities to launch this journal. We extend our gratitude to the International and National Advisory Board whose valued suggestions and advise have guided the journal in every aspect.

The Journal is our humble attempt in contributing to the field of aviation and space law research and we hope to continue the good work with our team at Centre for Air and Space Law (CASL).

**V. Balakista Reddy**
Editor-in-Chief

## CENTRE FOR AIR AND SPACE LAW (CASL)

The NALSAR University of Law has always endeavored to promote quality research in contemporary legal issues. One of the contemporary but neglected areas in Indian legal realm is Air and Space laws. To fill this gap and to promote further studies and research in the aerospace law, the University established the advanced Centre for Air and Space law (CASL) in 2005 with object to contribute to the development of aviation and space laws and related policies by conducting and promoting research and teaching at different levels. Since then, NALSAR-CASL has been continually promoting the study of Air and Space Law by conducting National and International Conferences, Workshops and Publishing Newsletters, Books and Articles in Aerospace law field.

The University has been teaching the subjects of air and space law for the past ten years. Till the date, there are many students with degrees in air and space law who have now been absorbed in the national mainstream and are working with the airlines, airports and the multinational corporations. Recently, NALSAR -CASL has also launched few innovative On site and Online courses which include the Two-Year Master's Degree in Aviation Law and Air Transport Management (MALATM); Two-Year Master's Degree in Space and Telecommunication Laws (MSTL); One-Year Post-Graduate Diploma in Aviation Law and Air Transport Management (PGDALATM) and One-Year Post – Graduate Diploma in GIS & Remote Sensing Laws. The objectives of these courses are to cater to the needs of unprecedented aviation growth coupled with commercialization of space and telecom industries, which calls for thousands of skilled manpower to meet the managerial requirements of rapidly growing airports, airlines, aerospace and telecommunication sectors. CASL also undertakes collaborative research activities in areas of common concern with state governments, NGO's and other international organizations.

# Fixing Responsibility For Internationally Wrongful Acts Against Civilian Aircraft: The MH17 Incident

*Jacob George Panickasseril*[*]

*Abstract*

*The downing of Malaysian Airlines Flight 17 (MH17/MAS17) over Ukrainian airspace by suspected pro-Russian rebel groups raises an interesting question in international law- Who is responsible for the shooting down of a civilian aircraft with passengers in a conflict zone? While Contracting States are bound by the provisions of the Chicago Convention on Civil Aviation of 1944 to permit civilian aircraft to fly over their respective airspace, the liability of the contracting State when a non-state actor violates the provisions of the said Convention has not been explored so far. In the aftermath of numerous incidents where States have shot down civilian aircraft suspecting it of being military aircraft or used for military operations states have agreed to certain safeguards to avoid loss of life and property. While the liability of non-state actors such as armed groups has been fixed under the ambit of*

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[*] Jacob George Panickasseril is currently working as Assistant Professor, Institute of Law, Nirma University

*International Humanitarian Law during times of armed conflict under the Fourth Geneva Convention relative to the Protection of Civilian Persons in Time of War 1949 and the 1977 Protocol II to the Geneva Conventions, fixing responsibility on such groups for acts committed against civilian aircraft has received only little attention from Contracting States to the International Civil Aviation Organization (ICAO) and the ICAO alike. This paper argues for fixing responsibility of non-state actors who commits acts against civilian aircraft within the terrain of international law.*

## THE ARMED CONFLICT IN UKRAINE AND THE MH17 INCIDENT

The Ukrainian State has been destabilized by a series of events which predate the tragic shootdown of Malaysian Airlines MH17 on July 17, 2014. Ever since the government declared an intention to join the European Union (EU)[1], a schism arose in the different regions of the country resulting in escalation of violence in the form of Euromaidan protests supporting closer ties with the EU and the ouster of Viktor Yanukovych as President in February 2014. The Crimean peninsula in Ukraine, a region which was a part of Russia until 1954, erupted in protests against the

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1 Ukraine–European Union Association Agreement

government in Kiev and the subsequent intervention by Russia and referendum led to the admission of Crimea as a federal state of Russia. Other regions in eastern Ukraine namely, the Donetsk and Luhansk Oblasts witnessed strong anti-government (and not surprisingly pro-Russian) protests which eventually led to armed hostilities between the Ukrainian military and separatist forces in these two regions.

Malaysian Airlines MH17, a scheduled international passenger flight enroute from Amsterdam to Kuala Lumpur was shot down during the conduct of the above hostilities on July 17, 2014 resulting in the death of all 283 passengers and 15 crew members. At the time of the incident the Ukraine State Air Traffic Services Enterprise had issued two NOTAMs[2] with regard to restrictions to access to airspace due to the hostilities. At the time of the incident MH17 was not in violation of the two NOTAMs.[3] The Dutch Safety Board which conducted an investigation into the cause of the incident has stated that MH17 was hit by "large number of high-energy objects that penetrated the aircraft from outside". The distribution of pieces of the aircraft structure over a large wreckage area is being attributed to the aircraft breaking in air.[4] The Netherlands has constituted a Joint Investigation Team (JIT) along with four other countries (Australia, Belgium, Malaysia and

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2 A Notice to Airmen (NOTAM) is a warning issued to the pilot of the aircraft about potential flight hazards

3 *Preliminary Report: Crash involving Malaysian Airlines Boeing 777-200 flight MH17* (The Hague, The Netherlands: Dutch Safety Board, 2014), 13

4 *Ibid.,* pp.25-27

Ukraine) to explore the criminal liability of the actors responsible for the shootdown. A draft proposal by Malaysia to constitute an international criminal tribunal for the same was vetoed by Russia. In the above circumstances it is important to ascertain the position in international aviation law and humanitarian law for responsibility for acts against civilian aircraft in conflict areas.

## RESPONSIBILITY UNDER AVIATION LAW

### Carrier Liability

Liability of the carrier (Malaysian Airlines) to pay compensation is governed by the Warsaw Convention[5] and the subsequent conventions which applied a non-uniform mode of compensation.[6] Different compensation limits were applied for passengers travelling on the same aircraft to different States which may be party to the different conventions.[7] To bring uniformity the

[5] Convention for the Unification of Certain Rules Relating To International Carriage By Air 1929 (137 L.N.T.S. 11)

[6] See Protocol to Amend the Convention for the Unification of Certain Rules Relating to International Carriage by Air Signed at Warsaw on 12 October 1929. September 28, 1955 (478 U.N.T.S. 371); Convention, Supplementary to the Warsaw Convention for the Unification of Certain Rules Relating to International Carriage by Air Performed by a Person Other Than the Contracting Carrier, September 1961 (500 U.N.T.S. 31); Protocol to Amend the Convention for the Unification of Certain Rules Relating to International Carriage by Air Signed at Warsaw on 12 October 1929 as Amended by the Protocol Done at The Hague on 28 September 1955, March 8, 1971, (ICAO Doc. 8932 (1971)); the four Additional Montreal Protocols of 1975 Additional Protocols Nos. 1-4, ICAO Does. 9145-9148 (1975)

[7] Gbenga Oduntan, *Sovereignty and jurisdiction in the airspace and outer space : Legal Criteria for Spatial Delimitation* (Oxford, UK: Routledge, 2012), 112

Montreal Convention[8] was adopted wherein a carrier is strictly liable to pay compensation upto 113,000 Special Drawing Rights (SDR). Beyond the said amount burden lies on the carrier to prove there was no negligence on its part or that the impugned damages were caused by a third party.[9] With regard to the MH17 incident it can be argued that the liability of the carrier cannot be extended beyond the statutory limit of 113,000 SDR as no negligence can be attributed on its part for a few reasons. The flight plan was handed over to all the concerned States through which the aircraft was passing through and permission to fly over the respective airspace of these States, including Ukraine had been obtained by the carrier. Also as mentioned earlier the aircraft was flying in accordance with the two NOTAMs which was issued by the Ukrainian authorities restricting airspace at the time of the incident. On the other hand it is the carrier which decides the route between destinations. In an industry where fuel prices are at a premium and with Malaysian Airlines running at a loss since 2010 it is not a surprise it chose a route which was not only used frequently in Europe-Southeast Asia flights but also economical.[10]

For compensation above and beyond the Montreal limit negligence on the part of a party other than the carrier has to be taken into consideration. This is where the liability of the other players in the

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8 Convention for the Unification of Certain Rules for International Carriage by Air 1999 (ICAO Doc. No. 4698)

9 *Ibid.,* Article 21

10 Malaysian Airlines was under considerable financial strain after the loss of MH370 in March 2014

incident proves relevant.[11] Fixing liability on either of the parties (Ukraine, Russia or the pro-Russian insurgents) must therefore be based on the principles of international law to which we shall look subsequently.[12].

**Practice of States: Previous Incidents**

There have been numerous incidents of civilian aircraft being shot down in the last six decades drawing attention of international institutions.[13] While the law of war justify shooting down of military aircraft for the purposes of self-defense,[14] this justification has proved controversial for the shooting down of civilian aircraft. The various reasons suggested when the armed forces of States have shot down civilian aircraft can be categorised as:-

- Where the aircraft strays off course into a restricted area and refuses to respond to a warning to land by the armed forces[15]
- Where the aircraft loses its way and enters the airspace of another country[16]

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[11] See Resolution Adopted by the Security Council on 21 July 2014 at its 2166th Session, UN Doc. S/RES/2166 (2014) after the MH17 incident where the Council "(d)emands that those responsible for this incident be held to account and that all States cooperate fully with efforts to establish accountability" (paragraph 11)

[12] This paper therefore does not deal with the liability of the carrier which can be adjudicated within the jurisdiction of a municipal court

[13] Resolution Adopted by the General Assembly on 14 December 1955 at its Tenth Session, UN Doc. A/RES/927(X)

[14] See Article 51 of the United Nations Charter 1945 (1 UNTS *xvi*)

[15] Israel - Libya Arab Airlines Flight 114 incident, February 21 1973

[16] Soviet Union - Korean Airlines Flight 902 incident, April 20 1978

- Where the aircraft was mistaken for either a military aircraft[17] or on a spy mission[18]

As a result of the above reasons what has emerged is a tendency of these States to deny responsibility and thereby refuse paying compensation to the victims. Even where the States have *admitted* mistaking the civilian aircraft for military aircraft there is no consistent international practise.[19]

**Use of Force and the ICAO**

The first international treaty regulating aviation was the Paris Convention[20] which did not explicitly deal with civilian aircraft barring a single provision dealing with the duty of a pilot to give a signal of distress when he was flying over a prohibited area which each country had the right to determine.[21] The increased use of aircraft, both military and civilian, in the subsequent two decades made the international community realise the need for a more comprehensive treaty. As a result the International Civil Aviation Organization (ICAO) which was established by the Chicago Convention[22] was mandated with the duty to '(p)romote the safety

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[17] China - Cathay Pacific Douglas DC-4 incident, July 23, 1954

[18] Soviet Union - Korean Air Lines Flight 007 incident, September 1 1983

[19] While China apologized and paid compensation for the China - Cathay Pacific Douglas DC-4 incident of July 23, 1954, the United States refused to do so in the United States- Iran Air Flight 655 of July 3, 1988 citing use of proper force.

[20] Convention relating to the Regulation of Aerial Navigation 1919, 13 October 1919 (XI U.N.T.S. 173)

[21] *Ibid.,* Article 4

[22] Convention on International Civil Aviation 1944 (15 U.N.T.S. 295)

of flight in international air navigation'.[23] The Convention recognises the right of every State to territorial sovereignty by establishing the right of every contracting State to have 'complete and exclusive sovereignty over the airspace above its territory.'[24] Consequently there is no right of innocent passage over the territory of a State. As a result international commercial passenger aircraft require the permission of each and every State through which the aircraft flies.[25] A contracting State is permitted to 'restrict or prohibit' use of airspace over its territory for reasons of 'military necessity or public safety'.[26] Similarly the Convention does not apply if a country is affected by war or a national emergency.[27]

The Soviet Union- Korean Air Lines 007 incident of 1983 provoked the Contracting Parties of the ICAO to initiate a debate as to the use of armed force against civilian aircraft and pass the following Resolution in an extraordinary session:

> RECOGNIZING that such use of armed force against international civil aviation is incompatible with the norms governing international behaviour and elementary considerations of humanity and with the rules, Standards and Recommended Practices enshrined in the Chicago Convention and its

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23 *Ibid.,* Article 44(h)
24 *Ibid.,* Article 1
25 *Ibid.,* Article 6
26 *Ibid.,* Article 9
27 *Ibid.,* Article 89

> Annexes and invokes generally recognized legal consequences,
>
> REAFFIRMING the principle that *States*, when intercepting civil aircraft, should not use weapons against them,[28] (emphasis added)

Article 3*bis* which emerged consequently a year later was also passed unanimously. Clause (a) of Article 3*bis* states that:-

> The contracting States recognize that every State must refrain from resorting to the use of weapons against civil aircraft in flight and that, in case of interception, the lives of persons on board and the safety of aircraft must not be endangered. This provision shall not be interpreted as modifying in any way the rights and obligations of States set forth in the Charter of the United Nations.

Article 3*bis*(a) can be seen to be phrased as more of a restraining clause and not as a prohibition against the use of armed force. Secondly this restraint is subject to the rights conferred on the States under the United Nations Charter, more specifically the right of self-defense (Article 51) which entails the use of force, the very issue which Article 3*bis* was meant to restrain. What has emerged is only the requirement of following a proper procedure for the use

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[28] Resolution adopted by the ICAO Council on 16th September 1983 at its 24th Session (Extraordinary), ICAO Doc. (A24-WP/49)

of force. [29] Consequently the State which shot down the aircraft justifies the action on military necessity and pays, albeit sparingly, compensation on *ex gratia* humanitarian grounds.

**Negotiation and Settlement of Aviation Disputes**

The ICAO Council has focussed more on disputes involving restrictions of airspace through a particular State and not on aircraft incidents involving causalities[30]and there is little or no evidence of the ICAO fixing responsibility in aircraft shootdowns.[31]Where the dispute fails to be settlement at the ICAO Council Article 84 gives the States the option of preferring an appeal to either an *ad hoc* arbitral tribunal or the International Court of Justice (ICJ). Similar to the disputes involved at the ICAO Council, those that have taken place before the *ad hoc* arbitral tribunals have concerned practises of one State restricting airspace to international commercial aviation.[32]

On the other hand twelve international aviation disputes have been brought before the ICJ which could not be settled earlier at the

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[29] The procedure is codified as the Manual Concerning Interception of Civil Aircraft (ICAO Doc. 9433)

[30] Paul Stephen Dempsey, "Flights Of Fancy and Fights of Fury: Arbitration and Adjudication of Commercial and Political Disputes in International Aviation", *Georgia Journal of International and Comparative Law*, vol. 32, No. 2( 2004): 267-277

[31] The ICAO instead focuses on investigation of aircraft incidents and recommends appropriation of responsibility should be avoided. See Annex 13 to the Chicago Convention (Aircraft Accident and Incident Investigation)

[32] *Supra* note 30, pp.234-235

ICAO Council, *all* involving shootdown of aircraft.[33] The practice of the Court has been to uphold preliminary objections on the question of its jurisdiction to hear the dispute.[34] This position of the Court has been consistent regardless of whether the aircraft shot down was civilian[35] or military.[36] An opportunity arose with regard to the Iran Air Flight 655 incident of 1988 when the United States refused to acknowledge responsibility and payment of compensation for what was at that time the deadliest aviation incident[37] prompting the Iranian Government to approach the ICJ for compensation[38] on the ground that the United States had violated the Chicago and Montreal Conventions. The matter was settled between the States when the United States offered to pay compensation in 1996 but without formally accepting responsibility

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33 *Ibid.,* pp.235-236

34 See Article 36 of the 1945 Statute of the International Court of Justice, 24 October 1945 (59 Stat. 1031)

35 See in particular *Case Concerning The Aerial Incident Of 27 July 1955 (Israel v. Bulgaria) (Preliminary Objections)*, I.C. J. Reports 1959, p. 127 and *Aerial Incident of 27 July 1955 (United States v. Bulgaria) Order of 30 May 1960* – International Court of Justice Reports 1960, p. 146

36 See *Aerial Incident of 10 August 1999 (Pakistan v. India) Jurisdiction of the Court – Judgment of 21 June 2000*, I.C. J. Reports 2000, p. 12 and *Aerial Incident of 4 September 1954 (United States of America v. Union of Soviet Socialist Republics) Order of 9 December 1959* – I.C. J. Reports 1959, p. 158

37 Aviation accidents involving a single civilian aircraft (Turkish Airlines Flight 981 on 3 March 1974 and Turkish Airlines Flight 981 on 19 August 1980) or multiple civilian aircraft (Pan Am Flight 1736 and KLM Flight 4805 on 27 March 1977) involved more causalities before the United States- Iran Air Flight 655 incident

38 Application Instituting Proceedings filed in the Registry of the Court on 17 May 1989, *Aerial Incident Of 3 July 1988 (Islamic Republic Of Iran v. United States Of America)*

but expressing 'deep regret' for the incident.[39] The substantive question of state responsibility and compensation therefore has never been adjudicated thoroughly by the ICJ.

Resolutions of the United Nations Security Council which recognise the safety of international civilian aviation have all been of a non-binding nature. They have called upon States "to take all possible legal measures to prevent further hijackings or any other interferences in international civil air travel,"[40] condemning "all acts of unlawful interference against the security of civil aviation"[41] to deploring "attacks on neutral shipping or civilian aircraft".[42] The Resolution passed after the MH17 incident has not explored the concept of State responsibility but instead called upon all parties "to observe to the fullest extent applicable, the international rules, standards and practices concerning the safety of civil aviation, in order to prevent the recurrence of such incidents".[43]

**State Responsibility under International Law: ASRIWA**

In the aftermath of the Iran Air incident it has been suggested that a State should be held responsible for use of force against civilian

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39 Settlement Agreement of the Case Concerning the Aerial Incident of 3 July 1988 Before the International Court Of Justice, 9 February 1996

40 Resolution Adopted by the Security Council on 9 September 1970 at its 1552nd meeting, UN Doc. S/RES/286 (1970)

41 Resolution Adopted by the Security Council on 14 June 1989 at its 2869th meeting, UN Doc. S/RES/635 (1989)

42 Resolution Adopted by the Security Council on 24 February 1986 at its 2869th meeting, UN Doc. S/RES/582 (1986)

43 *supra* note 11, paragraph 12

aircraft.[44] The concept of State Responsibility derives from customary international law wherein a State can be held responsible for unlawful deaths of foreign nationals committed within its jurisdiction where the concerned State failed to take adequate measures to prevent the act or the act was conducted by an agent of the State. The threshold for fixing responsibility on the State under international law is invoked when an "act being attributable to the State and described as contrary to the treaty right of another State" as laid down in the *Phosphate in Morocco* case[45] occurs.

The need for codifying international law for State Responsibility led to the International Law Commission's Draft Articles on the Responsibility of States for Internationally Wrongful Acts (ASRIWA)[46] which has been commended by the UN General Assembly "to the attention of Governments without prejudice to the question of their future adoption or other appropriate action".[47] After having seen the inconsistent State practice of acknowledging responsibility and the shortcomings of international institutions, responsibility under the ASRIWA is looked into.

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[44] Sompong Sucharitkul, "Procedure for the Protection of Civil Aircraft in Flight", *Loyola of Los Angeles International and Comparative Law Review*, vol. 16 (1994), 527

[45] *Phosphates In Morocco (Preliminary Objections)* June 14th, 1938 Permanent Court of International Justice A/B-74, p.28

[46] Draft Articles on Responsibility of States for Internationally Wrongful Acts adopted by the International Law Commission at its fifty-third session (2001) , Yearbook of the International Law Commission, vol. II, Part Two, 2001, pp.31-143

[47] Resolution Adopted by the General Assembly on 28 January 2002 at the Fifty Sixth Session, UN Doc. A/RES/56/83

**Due Diligence by Ukraine**

The responsibility of Ukraine needs to be seen from the perspective of its rights and its obligations under the Chicago Convention. The concept of sovereignty over airspace has been recognised from Roman times and is reflected in the maxim '*cujus est solum, ejus est usque ad coelum*'[48] and has been accepted as coming within the purview of customary international law.[49] Sovereignty thus exercised over airspace has now been codified by Article 1 of the Convention. The right conferred therein is based on the recognition of the *sovereignty* of *every* State over the 'land areas and territorial waters thereto'.[50]

Sovereignty is understood in the modern sense to encompass four non-exclusive models. *International legal* sovereignty denotes practices of mutual recognition by territorial entities. *Westphalian* sovereignty refers to the political organisation within the territory which is not subject to any external authority. *Domestic* sovereignty recognises the ability to exercise effective control within the territory. *Interdependence* sovereignty refers to the ability to regulate movement across borders.[51]

Even if it is understood that Ukraine for all practical purposes does not exercise domestic sovereignty over the eastern parts of its country Ukraine will argue that the conflict is all about *restoring* its

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48 'Whoever owns the soil holds title all the way up to the heavens'

49 See *Case Concerning Military and Paramilitary Activities in and against Nicaragua, (Merits), Judgment of June 27, 1986*, I.C. J. Reports 1986, p. 14

50 Article 2, Chicago Convention of 1944

51 *Supra* note 7, p.22

domestic sovereignty. More importantly Ukraine can raise the defence of the act being attributable to the armed groups over which it has no control. While the position is clear that insurrections do not come under the scope of *force majeure*[52] to exclude responsibility, the threshold needed to escape liability is that damage caused by the act could not have been avoided not even by use of all necessary diligence on the part of the State.[53] The concept of due diligence under State Responsibility for acts against aliens consists of two breaches- the breach of a duty to abstain and the breach of a duty to protect. The duty to protect includes the duty to *prevent* harmful acts against the foreign aliens and the duty to *punish* those responsible for such acts. Responsibility is attached when the organs of the State fail in these two duties. The ICJ in *Corfu Channel*[54] has placed a heavy burden on States to "not to allow knowingly its territory to be used for acts contrary to the rights of other States" and this obligation is based on 'elementary considerations of humanity'.[55]

The degree of due diligence to be followed depends on the facts of each particular case. The 'character and extent of an insurrectionary

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[52] See Article 23, ASRIWA

[53] Riccardo Pisillo-Mazzeschi,"The Due Diligence Rule and the Nature of International Responsibility of States", *German Yearbook of International Law*, vol. 35 (1992): 45

[54] *Corfu Channel (United Kingdom of Great Britain and Northern Ireland v. People's Republic of Albania), Judgment of April 9th, 1949*, I.C. J. Reports 1949, p. 4.

[55] *Ibid.,* p.22

movement'[56] which reflects 'the inherent strength in men, materials, and money, and in certain assisting circumstances'[57] which fully control so as to cut off access to the territory from the outside world[58] have all been held to give the State immunity against claims of compensation. However various criteria have been suggested to bring state responsibility within certain well defined parameters.[59] One is the degree of effective control of the territory under question. Another is the importance of the interest that is sought to be protected. Lastly the degree of predictability of the harm caused is to be considered. We shall now attempt to fixate Ukraine's responsibility within these criteria.

States are quick to deny that the armed conflict is an internal conflict for the purposes of rejecting the fact that there is a portion of the *de jure* territory under the *de facto* control of an insurgent armed group.[60] This should not obviate from the task of establishing the quantum of *control* which a State has over the said territory. An interesting point here is that as explained before airspace also has a territorial connotation similar to the seas surrounding a State. A State therefore can control not only the *terra firma* that constitutes its territory but also the *spatium aeris*

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[56] *G. L. Solis (U.S.A.) v. United Mexican States* RIAA Volume IV pp. 358-364 at p.362

[57] *Santa Clara Estates Case (Supplementary Claim)* RIAA Volume IX pp. 455-460 at p. 458

[58] *The Home Insurance Co. (U.S.A.) v. United Mexican States* RIAA Volume IV pp. 48-53 at p.52

[59] *Supra* note 53, p.44

[60] Andrew Clapham, *Human Rights Obligations of Non-State Actors*, (London, UK: Oxford, 2006), 287

above it. The Chicago Convention recognizes *territory* to be 'the land areas and territorial waters adjacent thereto under the sovereignty, suzerainty, protection or mandate of such State'.[61] Complete and *exclusive* sovereignty of the State is recognized thereby over this territory by virtue of Article 1. By acknowledging that only States have this right by virtue of customary international law the Chicago Convention grants absolute rights to the State concerned. The intention of the Convention is not to recognize the right of non-state actors such as armed groups which may *control* the territory but do not exercise any of the powers stated under Article 2 of the Convention.

When it comes to the *interest* that is sought to be protected, two interests come into play. One is the interest of the passengers and crew of the aircraft to a safe and uninterrupted travel and secondly the interest of the use of force against civilians. Acts against safe and uninterrupted travel do constitute an act of unlawful interference under international law.[62] Similarly the restraint on use of force against civilians under the Geneva Conventions needs no further doubt that civilians are to be protected in times of armed conflicts. These two interests were not adequately taken into consideration by Ukraine at the time of the incident as the conflict

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[61] Article 2, Chicago Convention of 1944

[62] See Tokyo Convention of 1963 (Convention on Offences and Certain Other Acts Committed On Board Aircraft) (704 U.N.T.S. 219 (No. 10106)); Hague Convention of 1970 (Convention for the Suppression of Unlawful Seizure of Aircraft) (860 U.N.T.S. 105 (No. 12325)) and Montreal Convention of 1971 (Convention for the Suppression of Unlawful Acts against the Safety of Civil Aviation) (974 U.N.T.S. 177 (No. 14118))

in Eastern Ukraine had reached proportions where the above Conventions fully applied and onus lay on the Ukrainian government that the principles of international humanitarian law were complied with the earnest by ensuring that flights did not take place over the *territory* of Ukraine.

The third criterion of *predictability* places a heavy burden on Ukraine. Ukraine was expected to ensure that flights were diverted away from the airspace of the eastern part of its territory as the Chicago Convention placed a duty on the State to inform the ICAO Council as and when it restricts its airspace at a time of 'national emergency'.[63] This is also to ensure that other Contracting States can be *informed* in advance about the risks of flying through the restricted area. The responsibility of permitting and restricting airspace over a State lies with the concerned State itself under the Chicago Convention as the ICAO has power to issue only advisories for aviation safety to Contracting States.

Also where there is a delay on the part of the State to do a particular act after the injury has come to its knowledge the State can be made responsible.[64] Where it had come on record that already there had been previous incidents of aircraft, both civilian and military, being shot down the delay on the part of Ukraine in

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[63] States have been reluctant to use the term 'war' even though no duty lies to inform the ICAO Council under Article 89 of the Chicago Convention of 1944. See Jiefang Huang, *Aviation Safety through the Rule of Law: ICAO's Mechanisms and Practices*, (The Hague, The Netherlands: Wolters Kluwer, 2009), 94

[64] *Bond Coleman (United States.) v. United Mexican States* RIAA VOLUME IV pp. 364-368

imposing a total ban is difficult to explain. The Federal Aviation Administration (FAA) which is the aviation regulator in the United States maintains a list of areas of armed conflict through which American aircraft are to maintain caution while flying or avoid altogether. Not surprisingly in the aftermath of the Crimean episode the FAA had issued a ban on flights through the Crimean taking into consideration the risks involved.[65]

The above arguments for fixing responsibility were based on the breach of its duty under Articles 9 and 89. Another relevant provision is Article 28 which requires Contracting States to adopt provide air navigation facilities, adopt standard systems and publish aeronautical maps *so far as it may find practicable'*. While this may seem to offer an escape valve for the State in giving discretion whether or not to implement such measures,[66] Article 38 mandates that States which are deviating from these measures to inform the ICAO about such non-implementation. The logic of this can be understood when one takes into consideration the need for international aircraft to coordinate with different air agencies throughout the course of its flight.[67] States are already obligated for the preparation of such safety measures under the various Annexes to the Convention[68] and have already undertaken to coordinate

65 FDC NOTAM 4/7667 (A0012/14) - AIRSPACE -SPECIAL NOTICE-UKRAINE (23 April 2014)

66 Thomas Buergenthal, *Law-making in the International Civil Aviation Organization*, (Syracuse, USA: Syracuse University Press, 1969), 76-78

67 See Article 12 of the Chicago Convention of 1944

68 See Annex 4 (Aeronautical Charts) and Annex 15 (Aeronautical Information Services) to the Chicago Convention of 1944

amongst themselves in the sharing of critical safety information and thereby placed on themselves this responsibility.[69] This inter-State coordination is to be premised on the acknowledgement of the sovereignty of these States.[70] At the same time caselaw exists to show that discretion on the part of the air traffic controller who is considered as an agent of the State cannot absolve the State for responsibility for its acts causing injury.[71]

Thus it can be summed that the breach of an international standard and the behaviour of the concerned State *considered as a whole*[72] taken into consideration can hold Ukraine in violation of the principles of international law in maintaining the standards required under the provisions of the Chicago Convention.

**Responsibility for Intervention – Russia**

While it is not disputed that Russian troops did cross the Ukrainian border during the Crimean crisis and its subsequent annexation in February- March 2014, the involvement of Russian nationals in the pro-Russian unrest which engulfed Eastern and Southern provinces (oblasts) of Ukraine subsequently has been a matter of serious dispute between Russia and Ukraine. It must be remembered that

69 See Recital Two of Resolution Adopted by the ICAO Assembly on 12-18 September 2007, Resolution A36-2 ("Whereas ensuring the safety of international civil aviation is also the responsibility of Contracting States both collectively and individually")

70 Ruwantissa Abeyratne, *Air Navigation Law*, (Berlin, Germany: Springer, 2012), 44

71 *Ingham v. Eastern Air Lines Inc*. 373 F. 2d 227 (2nd Cir., 1967); *Miller v. United States* 522 F.2d 386 (6th Cir. 1975)

72 *Supra* note 53, p. 44

state responsibility will be attributable to Russia if the person(s) who brought down MH17 are Russian nationals or if the insurgents were under the 'control' of Russia. In the light of such disputed facts which are difficult to ascertain in the current scenario in Ukraine it is worthwhile to look at the decisions of the ICJ and international criminal tribunals to arrive at an understanding of what constitutes State Responsibility for Russia.

The facts of *Nicaragua* are similar to the situation in Ukraine with the distinction that the aim of the armed forces (contras) was to overthrow the existing government in Nicaragua while the aim of the insurgents in Ukraine is to establish their own independent state. Nevertheless the proposition laid down in the case that it "would in principle have to be proved that the State had *effective control* of the military and paramilitary operations in the course of which the alleged violations was committed"[73] was in answer to the question whether the support in the form of military training and financial support to the armed groups constituted a violation of the principles of international law, specifically the obligation of non-intervention in the internal affairs of another State.[74] The effective control test has now been approved in *Bosnia Genocide*[75] wherein the court holds that for a party to be considered as a *de facto* organ of a State it is necessary that the armed group should be a 'mere

73 *Supra* note 49 (emphasis added)

74 Article 2(4), UN Charter 1945

75 *Case Concerning the Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Bosnia and Herzegovina v. Serbia and Montenegro), Judgment*, I.C. J. Reports 2007, p. 43

instrument' through which the State is acting and 'as lacking any autonomy'[76]. Despite the fact that the State (Serbia) had participated, directly or indirectly, in military operations against the applicant State (Bosnia) and payment, promotion and pension matters of the armed forces in question were handled by Serbia[77] the court deemed it fit that there was no effective control. Basing its reasoning on Article 8 of ASRIWA the court held that where the armed group has 'a qualified, but real, margin of independence' in its activities it cannot be considered as a *de facto* organ of the State.[78]

*Bosnia Genocide* fails to take into consideration the distinction brought about by the *Tadić*[79] ruling wherein the lower threshold test of *'overall control'* is advocated for attributing State Responsibility for armed groups as against 'effective control' for the acts of private individuals.[80] The rationale of *Tadić* in prescribing a context specific 'degree of control'[81] holds good in the modern 9/11 world where it is easy for private individuals

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76 *Ibid.,* para 392

77 *Ibid.,* para 386-388

78 *Ibid.,* para 395

79 *The Prosecutor v. Dusko Tadic (Appeal Judgement)*, IT-94-1-A, International Criminal Tribunal for the former Yugoslavia (ICTY), 15 July 1999

80 *Ibid.,* Contrast "For these acts to be attributed to the State it would seem necessary to prove not only that the State exercised some measure of authority over those individuals but also that it issued specific instructions to them concerning the performance of the acts at issue, or that it ex post facto publicly endorsed those acts" (para 118) with "...for the attribution to a State of acts of these groups it is sufficient to require that the group as a whole be under the overall control of the State" (para 120)

81 *Ibid.,* para 117

committing acts in violation of international law to pass responsibility to States whereas a State which finances and supports an armed group logistically cannot be expected to specifically issue directions for the commission of a particular act.[82] In a world where States are quick to suppress secession movements within their territory but support the same in other States this is a significant criterion on which to test the imputation of the MH17 incident on Russia. Already the ICJ has passed judgments against Israel and Uganda for violations of international law for interventions beyond the territory of their sovereignty and has held the two States responsible to pay reparation.[83]

**State Responsibility on Non-State Actors**

Early cases dealing with state responsibility took into consideration the factum (or lack) of due diligence for holding a particular State responsible. In *Home Missionary*[84] it was held that 'no Government can be held responsible for the conduct of rebellious groups committed in violation of its authority, where it is itself guilty of no breach of good faith, or of no negligence in suppressing insurrection.'[85] The State when 'compelled by the fatality of

[82] Antonio Cassese, "The Nicaragua and Tadić Tests Revisited in Light of the I.C. J. Judgment on Genocide in Bosnia", *European Journal of International Law*, vol. 18 (2007) : 659-661

[83] See *Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory, Advisory Opinion*, I. C. J. Reports 2004, p. 136, and *Armed Activities on the Territory of the Congo (Democratic Republic of the Congo v. Uganda), Judgment*, I.C.J. Reports 2005, p. 168

[84] *Home Frontier and Foreign Missionary Society of the United Brethren in Christ (United States) v. Great Britain* (1920) RIAA Volume VI 42-44

[85] *Ibid.,* p.44

circumstances'[86] in times of 'open, flagrant, bloody, and determined war'[87] against 'a certain set of men have gone temporarily or permanently beyond the power of the authorities'[88] has been held non-responsible for acts against aliens on their soil. However the above cases all did not deal with the responsibility of the other party to the conflict, namely the armed groups. This was because the claims for compensation were raised against the successful State after the armed groups were defeated.

While there is no prohibition *per se* on the use of force by non-State actors in international law,[89] the question of fixing *State* responsibility on non-State actors becomes a problematic as the concept rests on the recognition of an entity as a State. This is because responsibility can be fixed only when the liability accrues against a legal person.[90] Within international law States are seen as the subjects and responsibility has operated on an inter-State mechanism.[91]This reflects the disinterest of recognized States to confer a degree of legitimacy on non-State actors against which it is

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86 *Aroa Mines Case (on merits)* (1903) RIAA Volume IX 402-445 at p.408

87 *Sambiaggio Case (of a general nature)* (1903) RIAA Volume X 499-425 at p. 512

88 *Ibid.,* p.513

89 Liesbeth Zegveld, *The Accountability of Armed Groups in International Law*, (Cambridge, UK: Cambridge University Press, 2012), 2

90 Under Article 1 of the Montevideo Convention of 1933 (Dec. 26, 1933, 165 L.N.T.S. 19 (1933)) a State is defined as a person of international law possessing the following qualifications: a ) a permanent population; b ) a defined territory; c ) government; and d) capacity to enter into relations with the other states.

91 Christine Evans, *The Right to Reparation in International Law to Victims of Armed Conflict*, (Cambridge, UK: Cambridge University Press, 2012), 31

engaged in hostilities as it amount to recognition of another authority within the territory of the State.[92]

Traditionally international law has sought to place non-State actors involved in armed conflict on a sliding scale of recognition based on the subjective satisfaction of the opposing State and the objective satisfaction of the territory held by the particular group. Thus what evolved was the progression from being classified as a rebel, insurgent or a belligerent, all of which entailed different rights and responsibilities. While the Geneva Convention has sought to resolve these distinctions by referring as 'parties to the conflict' the evolution of the laws of war on which multilateral international humanitarian law treaties are based still bears the weight of referring to States exclusively.

What Common Article 3 of the Convention applies is a minimum standard of *obligations* to non-State actors regardless of the above distinctions. These obligations have been argued as setting a legal responsibility on both individuals and the insurrectional movement alike under international humanitarian law[93] and are now considered to be a part of customary international law.[94] As individuals the members of such movements are bound as citizens

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92 *Supra* note 89, pp.162-163

93 Yves Sandoz, Christophe Swinarski, Bruno Zimmermann(eds.), *Commentary on the Additional Protocols of 8 June 1977 to the Geneva Conventions of 12 August 1949*, International Committee of the Red Cross, (Geneva, Switzerland: Martinus Nijhoff Publishers, 1987), p.1345, para 4442

94 *Prosecutor v. Jean-Paul Akayesu*, Case No. ICTR-96-4-T (2 September 1998), para 608

of the State which is a party to the Geneva Convention and Additional Protocols I and II. The above treaties directly grant rights and impose obligations on non-state actors even if they are not parties to the treaties. Moreover Common Article 3 is specifically aimed at such actors.[95]

The ASRIWA Rules has attempted to address this lacuna by fixing responsibility under Article 10 albeit on a *successful* insurrectional movement.[96] This is to adhere to the general principle that continuity must be maintained in the conduct of the movement which becomes the government of a new State so as to fix attribution. The Rules aims to reduce *simpliciter* the question of an insurrectional movement that has failed by reverting back the responsibility on the original State. An argument can be raised in favour of the original State that it is not responsible for the impugned acts, acts which it may in fact have tried its best to suppress. Ukraine can easily slip into this mode and aim to its hands clean. What the Rules seek to maintain is the fixation of responsibility for the consequences of the *actor* and not the acts *per se*.

Two important points need to be stated here. One, the emphasis is on the term conduct which 'only concerns the conduct of the movement as such and not the individual acts of members of the

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95 *Supra* note 60, p. 280

96 See *supra* note 46, p.51, para 9 where the Commentary relies on the characteristics of "dissident armed forces or other organized armed groups" in Article 1 of Additional Protocol II.

movement, acting in their own capacity.'[97] Individual responsibility is still governed by the tenets of the Rome Statute of the International Criminal Court. Therefore while the individual act of shooting down MH17 can be attributed to individual responsibility, the conduct of the armed forces of the insurrectional movement in the War in Donbass come within the ambit of Paragraph 2 of Article 10.

Secondly the application of the said provision covers both insurrectional and other movements including those of a peaceful nature. Importantly the legitimacy of the manner in which the movement becomes the government is immaterial for the purposes for laying responsibility. This interpretation is wide enough to cover the referendums conducted in the Donetsk and Luhansk Oblasts of Ukraine. This can now be read in consistency with the ICJ ruling in *Kosovo*[98] wherein the Court held that a unilateral declaration of independence does not violate the principles of international law. The focus thus remains on the conduct of the movement at all times and the activities of the armed groups operating in eastern Ukraine who cannot seek to escape liability for their acts if they are to gain international recognition outside the shadow of Russia.

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[97] *Ibid.,*p.50, para 4

[98] *Accordance with international law of the unilateral declaration of independence in respect of Kosovo (Request for Advisory Opinion)*, I.C.J. Reports 2010, p.403

## The difficulties of fixing responsibility

The existing international conventions and practice stated in the previous sections bear witness to the fact that there is no rule of international aviation law on fixing responsibility for payment of compensation by States except where States themselves submit to the dispute settlement mechanisms. Even a non-binding draft resolution of the UNSC was vetoed by the Soviet Union when it contained the recital of payment of compensation after the 1983 Korean Air Lines incident.[99] The long delay needed for Article 3*bis* for coming into force (14 years) and the inconsistent State practice of accepting responsibility for using force reveals that *ex gratia* payment of compensation without acknowledgment of State responsibility is the norm. The restraint of use of force as mentioned in Article 3*bis* of the Chicago Convention recognises the obligation of every State which must take into consideration 'the norms governing international behaviour and elementary considerations of humanity', the basis of international humanitarian law. The unanimous manner in which 3*bis* was passed by all the Contracting Parties can be considered for restraining the use of force against civilian aircraft as recognizing a principle of international law. Similarly the ICAO Assembly Resolution on the MH17 incident *reaffirming* Article 3*bis* is a reflection of its

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[99] See Revised Draft Resolution vetoed by the Soviet Union on 12 September 1983 at the 2476th meeting of the UN Security Council, Doc. S/15966/Rev.1 (Sept 12, 1983)

application not just in times of peace but also in periods and regions of armed conflicts.[100]

On the other hand, international humanitarian law has expanded from the customary laws of war which involved only States. The Geneva Conventions and Additional Protocols recognize the rights and obligations of all parties to the conflict be they States or non-State actors and this reflected in numerous Resolutions of the UN Security Council.[101] The Conventions adduce rights and obligations in the *conduct* of armed conflicts but where there are violations of the prescribed conduct IHL is silent on *who* is to be compensated.[102] The shortcoming is reflected when considering the victims of armed conflicts can and do involve neutral subjects. While expanding responsibility effective remedy to these victims is restricted by directing the victims to approach their respective

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[100] ICAO Council, 203rd Meeting (Extraordinary), Resolution, 28 October 2014

[101] See particularly the following resolutions: Resolution Adopted by the Security Council on 8 December 1998 at its 3952nd meeting, UN Doc. S/RES/1214 (1998) (reaffirming that all parties to the conflict in Afghanistan are to comply with the Geneva Conventions);
Resolution Adopted by the Security Council on 21 December 1998 at its 3958th meeting, UN Doc. S/RES/1216 (1998) (calling upon all parties to the conflict in Guinea-Bissau to ensure safe access to international humanitarian organizations);
Resolution Adopted by the Security Council on 19 September 2003 at its 4830th meeting, UN Doc. S/RES/1509 (2003) (urging all parties to the conflict in Liberia to comply with a ceasefire agreement);
Resolution Adopted by the Security Council on 27 February 2004 at its 4918th meeting, UN Doc. S/RES/1528 (2004) (calling upon all parties to the conflict in Côte d'Ivoire to take all further steps to prevent violations of human rights and international humanitarian law)

[102] Emanuela-Chiara Gillard, "Reparation for violations of international humanitarian law", *International Review of the Red Cross*, vol. 85, No. 851, (September 2003), 536

*States*.[103] One of the reasons is the difficulty in obtaining reparation from a non-State actor. Not surprisingly there is no case of a non-State actor paying compensation for an internationally wrongful act despite the fact that a perusal of armed conflicts in the Balkans and Africa shows that insurrectional movements have caused widespread loss in terms of life and property.

Similarly the tendency to hold individual actors responsible for violations of international law as is evidenced from the International Criminal Court and the *ad hoc* international criminal tribunals in Yugoslavia and Rwanda has resulted in attention being drawn away from holding collective responsibility on non-State actors who continue to commit acts without accountability.[104] The obligation to ensure respect for the Geneva Conventions as stated under Common Article 1 must therefore be interpreted in an expansive manner so as to hold those responsible for the internationally wrongful act of the MH17 incident[105] responsible to pay compensation even in the absence of an explicit provision in treaty law.[106] A possible solution is offered in a new set of principles[107] which puts onus on the non-State actor to 'provide

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103 *Supra* note 93, p.1056, para 3657

104 *Supra* note 89, p.222

105 See note 11, Recital Two –("*Reaffirming* the rules of international law that prohibit acts of violence that pose a threat to the safety of international civil aviation and emphasizing the importance of holding those responsible for violations of these rules to account")

106 *Case Concerning The Factory At Chorzow (Claim For Indemnity)(Merit) (Germany v. Poland)*, Permanent Court of International Justice, 13 September 1928, (Series A, No. 17), p. 29

107 The United Nations Basic Principles And Guidelines On The Right To A Remedy And Reparation For Victims Of Gross Violations Of International

reparation to the victim or compensate the State if the State has already provided reparation to the victim'[108] thus putting to rest debate of shifting the responsibility based on the success of an insurrection movement that the ASRIWA Rules sought to distinguish.

From the discussion above the increasing role of non-State actors which have an effect on international aviation needs to be appreciated notwithstanding the changing personality of non-State actors. Only time will tell once the dust has settled in the steppes of Ukraine who is responsible for the MH17 shoot down but that brooks no excuse to settle the question of responsibility in the larger interests of international law, and most importantly, justice for the victims.

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Human Rights Law And Serious Violations Of International Humanitarian Law, Adopted by General Assembly resolution on 16 December 2005 at its Sixty-fourth session, UN Doc. A/RES/60/147

[108] *Ibid.,* Principle 15

# DPP 2016 – THE CHANGE AGENT TO SELF RELIANT INDIAN DEFENCE INDUSTRIAL BASE – AN ANALYSIS

*Dr. S.N. Ghosh**

*Abstract*

*Defence Procurement Procedure 2016, though incomplete, was released by the Ministry of Defence on 26th March 2016 to coincide with the DefExpo, primarily to showcase the manufacturing capabilities of domestic defense industry and also to attract further investments, domestic as well as global. The centerpiece of the new policy is to boost home grown defence industry and give a fillip to Prime Minister Narendra Modi's 'Make in India' initiative. Common man sees greater opportunity of job creation and economic welfare. Section I of the paper highlights the radical pioneering policies and procedures mandated in the DPP 2016. Section II analyses the procedural grey areas and argue how they may roadblock the cherished goals of this DPP. In Section III certain ameliorative steps are deliberated. In conclusion to this paper, the author argues that there are positive indications of a*

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> *favourable geo-political environment in the world. DPP 2016 must facilitate to catapult India's defence manufacturing industry more particularly SME sector to a higher technological pedestal facilitating easy access to bank funding and also the induction of advanced defence technologies from global leaders.*

The winds of change in the domestic industrial policy – Make in India - have also radically transformed the hitherto most closely guarded Defence Procurement Procedures of the country. The ninth version of the Defence Procurement Procedure (DPP) was released by the Ministry of Defence (MoD) on 28th March 2016. The announcement of this shift was coincided with the DefExpo, a platform to exhibit India's defence capabilities and also to attract foreign as well as domestic manufacturers, in design and development including Transfer of Technology of such previously heavily guarded defence hard wares. The dominant feature of this shift is to increase India's defence industrial base by Indigenisation and Self-sustenance. The DPP 2016,[1] as released, is incomplete because the chapters containing the revised standard contract document and various annexure and appendices have not been released. These are to be notified shortly. In addition, a new chapter on 'Strategic Partners' will also be notified separately.

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[1] http://www.iesaonline.org/downloads/defence_procurement_procedure-2016.pdf (accessed on April 15, 2016)

The environment is euphoric, domestic industry is boisterous, defence companies scripts have shown upwardly movement besides given the increasing budgetary spend on defence procurement, this policy transformation is expected to catalyse import substitution initiatives of the government. The savings in foreign reserves will give Indian economy a substantial boost. Common man sees of the greater opportunity of job creation and economic welfare. Critics say that such *joie de vivre* in defence procurement ecosystem is for no trivial reason. It is a common knowledge that due to interplay of multitude of reasons coupled with chaotic planning and mystifying close-door China-wall procedures, the capabilities of domestic (private) industry in defence procurement were hitherto not explored; it had also held back the domestic investments. Defence Procurement Procedure 2016[2] is purported to have affirmatively harmonized complexities in defence acquisitions; the Indian industry has reasons to be enthused.

## RADICAL PIONEERING TRANSFORMATION

The document starts with a brief explanation of how the DPP has evolved over the years. The mandate to the Committee of Experts to recommend suitable amendments to DPP-2013 is highlighted next along with interaction with all the stakeholders including Indian and foreign defence industry representatives, legal and tax

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[2] The new DPP will be applicable to all cases that come up for Acceptance of Necessity (AoN) on or after 01 April 2016. Further, the Defence Acquisition Council (DAC) may permit its application to past cases also.

experts, think tanks, academia etc. The document then proceeds to say that 'based on Government's experience in the defence procurement process, and the recommendations of the committee of experts, the Defence Procurement Procedure - 2016, has been evolved'.

## Participative engagement of Stakeholders

The shift in the engagement of the all the stakeholders who matter including foreign defence industry representatives and academia amongst others in drafting defence procurement procedure of the country is the foremost radical transformation. Never before in such sensitive and complex issues encompassing the security of the nation, the private stakeholders least being foreign defence industry experts have ever been invited and consulted. This mechanism ensures highest standards of transparency, probity and public accountability; propelling a balance between competing requirements such as expeditious procurement, high global quality standards with complexity of technology and appropriate costs. This also mirrors the seriousness and approach of the government in its proclaimed objective of self-sustenance.

## Preamble to DPP – a noble endeavor

DPP 2016 begins with a Preamble, as one is enshrined in the Constitution. Though in the legal corollary it may not be termed as Preamble, yet the intent is affirmed. In other words, the Preamble is the 'Pillar' on which the DPP 2016 rests.

We substantiate our standpoint by referring to Preamble which says 'It is *therefore* of utmost importance that the concept of 'Make in India' remains the focal point of the defence acquisition policy/procedure. There is a need to institute enabling provisions for utilization and consolidation of design and manufacturing infrastructure available in the country. A need has also been felt for identifying strategic partners for promoting defence production in the private sector.' It further says ''Make' procedure has also been refined to ensure increased participation of the Indian industry. Enhancing the role of MSMEs in defence sector is one of the defining features of DPP.'

With this background, it is a welcome pioneering precedent to Public Procurement procedures in India; the idea is noble. More particularly, when it is a common knowledge in the corridors of Ministry of Defence that acquisition officers are 'Prisoners of Procedures'; they are most rigid when it comes to the DPP, for fear of enquiries and an unknown that may haunt them down the line. Preamble in the DPP 2016 is expected to act as a tool to the aid of decision makers to appreciate the underlying 'intent and the spirit' behind any provision in the document; it is the 'roadmap' for the procurement officers.

Ironically, the Preamble begins on a negative note, "Defence acquisition is not a standard open market commercial form of procurement, and has certain unique features such as supplier

constraints,….."[3], and so on. Being a business document, ideally this should have begun with a positive note; this would also boost the confidence of the stakeholders.

**MSME – the preferred sector**

The Micro, Small & Medium Enterprise (MSME) sector is a major driver of growth of the Indian economy. MSME segment accounts for 45 percent of the country's industrial output and 40 percent of exports. The overall contribution of this segment to India's Gross Domestic Product (GDP) has been holding steady at 11.5 percent a year[4]. There are over 6000 products ranging from traditional to high-tech items, which are being manufactured by the MSME sector. Under a broad categorisation, approximately 77 percent of the total turnover of the MSME sector is linked to various industries in the manufacturing sector and the balance is contributed by the entities linked to the services sector. MSME in India provides employment to 10 million with Market Value of the Fixed Assets of 1,269,338.02 crores rupees[5].

Interestingly, a few of Original Equipment Manufacturers are dominating the global defence industry. They work in close co-

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3 Supra note 1 p 1

4 Ministry of Micro, Small & Medium Enterprises, http://msme.gov.in/web/portal/new-default.aspx

5 IFC Report on Micro, Small and Medium Enterprise Finance in India, November 2012, http://www.ifc.org/wps/wcm/connect /4760ee004ec65f44a1 65bd45b400a808/MSME+Report-03-01-2013.pdf? MOD =AJPERES, pp 13, 22; Annual Report 2013-14, Ministry of Micro, Small and Medium Enterprises, Govt. of India, http://msme.gov.in/ WriteReadData/DocumentFile/ANNUALREPORT-MSME-2013-14P.pdf; p15

ordination with SMEs and their prime contractors through a well defined supply chain. The reason why OEMs / prime contractors prefer to work with SMEs is because of their innovative capabilities in niche manufacturing, greater flexibility, lower overhead costs and their ability to learn and absorb new technologies[6]. OEMs require that the SMEs they work with should have the ability to perform, maintain continuity of supplies and clearly understand how the defence procurement procedure works.

Enhancing the role of MSMEs in defence sector is thus one of the defining features of DPP 2016. MSME sector shall now be accorded preference for Government Funded Projects for development of prototypes with project cost upto Rs. 10 crores whereas industry funded projects the preference has been capped at Rs. 3 Crores. Such preference to MSME will attract many a high caliber engineers from various disciplines to turn entrepreneurs, innovate and develop innovative systems with exclusive ownerships of their intellectual properties. Employment creation commensurate with technical skill development will also boost Skill India programme.

**Indigenous Design, Development and Manufacture – a priority**

For the first time since its introduction in 2002, the DPP 2016 places significant importance on 'Indigenous Design, Development and Manufacture'. It is reported that the government proposes to

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[6] Baba N Kalyani Chairman – CII National Committee on Defence & Chairman & Managing Director – Bharat Forge Limited; Forward - Enhancing role of SMEs in Indian defence industry; Ernst & Young & CII

source 70% of its defence requirements from indigenous suppliers[7]. In the context, it may be noted that these attributes like Design, Development and Manufacture were present in a DPP 2013 albeit in a subtle manner and inherent in the "Buy Indian" category, they have now got their pride of place in the DPP 2016. This is actually the essential ingredient to "Make in India", philosophy[8]. Even in the decreasing order of priority the procurement of defence equipment, 'Buy IDDM' ranks first.

**Impetus to Private Sector and Service Quality Requirements**

The private sector is already in the field, but in a small way. Buoyed by the recent increase in the FDI in defence from 26 percent to 49 percent, DPP 2016 will give the desired impetus to private sector to emerge as a major player in domestic defence industry. Ernst and Young report asserts that India can save as much as $50 billion from its likely spend of over $260 billion on defence equipment in the next 12 years. This is a distinct advantage.

Another major departure DPP 2016 has made is the renewed emphasis on Service Quality Requirements (SQRs) of the capital acquisitions. A separate paragraph on Characteristics of SQR has

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7 Enhancing role of SMEs in Indian defence industry; Ernst & Young & CII, http://www.cii.in/webcms/ Upload/Enhancing% 20role%20of%20SMEs%20in%20Indian%20defence%20industry1.pdf, p 22

8 Defence sector is prominent among the 25 sectors of industry covered under the 'Make in India' initiative, *ibid* p1, http:// www. makeinindia. com/sectors

been inserted. Innovation and usefulness of the product that best meet the requirements are underpinned in DPP 2016. Besides, to make SQRs more purposeful, it has now been split into two categories, Essential and Desirable, formally called as Essential Parameters A and Essential Parameters B. Contracts will be signed based on Essential Parameters A and the vendor will be permitted to develop Essential Parameters B after the award of the contract. Where a vendor meets the desired Enhanced Performance Parameters those enhance the capability of the equipment, vis-à-vis the Essential Parameters, the provision for credit score of up to 10%, for evaluation of L1 has been inserted to promote innovations by the vendors. In addition, the goal of achieving self-reliance in defence equipment also appears to have been kept in mind.

## THE ROADBLOCKERS

### MSME Sector will continue to languish

Two major deficiencies in the DPP 2016 are ingrained in the definition of 'Indian Vendor' that has destroyed the very fibers and ethos on which this document is stated to have been intertwined.

It is defined as an "Indian entity, which *could include*[9] incorporation/ ownership models as per Companies Act, partnership firms, proprietorship, and other types of ownership model as per relevant Indian laws.." The definition leaves gaps in the policy – the author holds the view that with such lopsided and

[9] Emphasis added

primitive definition, the much publicized Make in India cannot materialize. The following paragraphs trace such policy gaps and establish how they will promote failure of the much publicized policy of DPP 2016 – 'Make in India.'

There were 29.8 million working enterprises in India in the year 2012-13; out of which 28 million (94%) are unregistered (proprietary, partnerships, Association of Persons, Hindu Undivided Family etc) and around 6% of them are Corporate (Artificial person – enjoined with contracting capacity).[10] During recent times, the MSME sector has consistently recorded higher growth rate when compared with the overall industrial sector.[11]

MSMEs are classified into two segments[12]:

(a) **Manufacturing Enterprises:** enterprises engaged in the manufacture or production of goods pertaining to any industry specified in the first schedule to the industries (Development and Regulation) Act, 1951.

(b) **Service Enterprises:** enterprises engaged in providing or rendering of services and are defined in terms of investment in equipment.

A study on the MSME sector suggests that their multiple growth constraints can be largely linked to inadequate access to finance. Some of the major findings of IFC Study[9] are brought out here

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10 supra note 5 p 4

11 supra note 5 p 4

12 Section 2 of the Micro, Small & Medium Enterprises Development (MSMED) Act, 2006

below to emphasize the shortcomings in the Business Model envisaged in the definition of Indian Vendor in the DPP 2016:

- Access to institutional funding is the biggest constraint in growth of the sector - Over 92 percent of the units lack access to any form of institutional finance;
- Limited access to both immovable and movable collateral security, while the majority of financial institutions prefer collateral-based financing as a risk mitigant[13]
- More than 80 percent of the loan amount in default; Poor historic performance of the sector – higher NPA
- Lack of adequate and timely access to working capital finance is one of the key reasons for sickness in the sector
- Restricted access to technology; high technology obsolescence rate
- Inadequate access to technical assistance, infrastructure
- Limited access to rehabilitation support and archaic insolvency laws (proprietorships and partnerships).

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[13] In order to catalyze the flow of credit to the MSE sector without the burden of collateral, the government and SIDBI set up the Credit Guarantee Scheme (CGS) for the MSME enterprise segments. The CGS provides default cover in case of enterprise default. The corpus for the scheme is contributed by the Government and SIDBI in the ratio of 4:1. The corpus is managed by a trust – the Credit Guarantee Trust Scheme for Micro and Small Enterprises (CGTMSE). The current coverage of CGTMSE accounts for between 7-10 percent of the micro and small enterprise portfolio of Scheduled Commercial Banks; Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE), https://www.cgtmse.in/About_us.aspx; Chakrabarty K C: Empowering MSMEs for financial inclusion and growth – issues and strategies, http://www. bis.org/review/r 111222g.pdf p 4

- Gaps in the insolvency framework limit the options of revival and turnaround for entrepreneurs.
- Business is unpredictable, linked to physical welfare of the owner (human persona). Business Succession plan is missing (most common is execution of 'Will' by the partner); even if it be there, it is riddled with litigation.
- Self Regulated; there being no external (statutory) authority 'Personal Intuition' is the guiding principle.
- 30-35% MSMEs lack sales, marketing and accounts departments.

Grant Thorton LLP concluded their MSME Report 2013 stating that despite the high concentration of MSMEs in the country, India still lacks an overall impetus towards enabling this sector to effectively integrate with global companies and contribute further towards economic growth. The key to integration lies in defining policies and procedures that can drive continuous monitoring and innovation as well as provide constant support to micro, small and medium enterprises. [14]

The manufacturing and selling the defence products is 'Knowledge centric'. DPP 2016 proclaims to be the catalyst of MSME. The Reports on MSME Finance in India by IFC as well as the KPMG & CII emphatically concluded that "MSME tend to operate in

[14] Empowering MSMEs through financing and linkages, Grant Thorton LLP & CII 2013, http://gtw3.grantthornton.in/assets/Knowlede_Paper_on_MSME_Sector.pdf p 8

value-add manufacturing and knowledge-based service industries. The Knowledge-based enterprises require working capital for primarily investing in people. For this, businesses either depend on internal accruals or internal equity investments, as debt from formal financial institutions for financing of man power costs remains a challenge." According to the International Finance Corporation (IFC), the MSME sector has a total finance requirement to the tune of INR 32.5 trillion, of which INR 26 trillion accounts for debt demand while INR 6.5 trillion accounts for equity demand. Of the overall MSME debt financing, while almost 78% (INR 25.5 trillion) is met through either self-financed or from informal sources, only 22% or INR 7 trillion account for formal source of finance.

In India, a large number of SMEs serve as suppliers to defence PSUs and have a role to play in the Indian defence market but their contribution has somewhere gone unnoticed. Hence, in order to achieve self reliance in defence production and subsequently emerge as a significant defence player, India needs to improve the competitiveness of its SMEs and enhance their role in the Indian defence industry.

Alongside it must also be noted that under the Partnership Act, it is not mandatory to prepare Accounts (mutual trust; mutual agency is the litmus test[15]), being that so Audit is not necessary. Balance

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[15] But, above all, the test of partnership viz. the mutual agency between the partners, i.e. the authority to bind and the authority to be bound, would be the criterion for deciding whether the partnership is a genuine partnership or

Sheet is also not prepared because as discussed elsewhere that unincorporated business are not 'Person' in the eye of law; cannot enter into contract to hold an Asset. The 'Risk of the Business' is the 'Risk of Self' (entrepreneur). Personal Assets are pooled together for the mutual benefits of the partners. Being that so when Accountability is missing why should outsider to the business (which include Banks, large vendors also) take financial exposure to a partnership business.

This in short explains the findings of IFC, Ministry of MSMEs, KPMG, Grant Thorton and many others that MSE in India prefer self-financing, which not just includes the savings of the entrepreneurs, friends, family and relatives but also private finance generally from the unorganized money lenders wherein the rate of interest is not only exorbitant but also any failure or delay in payment would invite the wrath of goons of the moneys lenders. Private equity funds have limited incentives from government to operate in the MSME sector. The promoters/owners of MSME are generally from middle class income bracket with little buffer to fall back upon. Consequently, the Risk Taking Capacity of the Enterprise is linked to the Risk Appetite of the Entrepreneur.

Partnership form of business models are clearly primitive; prospered in an era when society was vertically divided on vocation basis, businesses were constrained due to geographical restrictions and there was nearly a monopolistic market ecosystem.

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not. [Mohar Singh And Anr. vs Sardari Lal And Ors. on 1 March, 1996; II (1996) BC 85, 63 (1996) DLT 55]

Indian economy has moved far ahead; it is one of the most vibrant and dynamic economy in the world with enormous growth potential. SMEs (as 'Company') can effectively mobilize cheaper funds while accessing global markets[16]. Indian enterprises are benefiting from outsourcing, offshoring and joint ventures. Strategically positioning themselves by integrating with the Global Value Chain (GVCs) MSMEs can cut costs and enhance market access, eventually reinforcing their role in the growth of the Indian economy.[17] Never the less, the MSME sector has been battling the odds to stay competitive in the global marketplace, more needs to be done to help including correcting the policy gaps to MSMEs get funds for increasing capacity and sustain its growth. Hence, to be able to integrate successfully in the value chain, develop niche products, enhance capabilities, continuously innovate and fully leverage export opportunities, they must be provided with adequate space and opportunity to exploit their latent potential.

To conclude, we say that the extant definition of Indian Vendor in the DPP 2016 will fail to create a conducive market condition for MSME sector in India. This policy gap deserves immediate

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[16] A separate trading platform in National Stock Exchange and Bombay Stock Exchange has been created. This platform of the Exchange is intended for small and medium sized companies with high growth potential. The platform is open for SMEs whose post issue paid up capital shall be less than or equal to Rs.25 crores. The platform shall allow new, early stage ventures and small quality companies to raise much needed growth capital as they grow, mature and transit to the Exchanges' main board; Emerge, Investment Opportunities in Emerging Companies, https://www.nseindia.com/emerge/sme_brochure.pdf pp2-4

[17] supra note 14 p 8

correction by the policy makers. If not corrected, the big cats in defence industry will occupy the space by creating a network of small companies; reap the advantages of economies of scale by outsourcing some of the accessories to the MSME sector[18]. This mechanism will promote cartelization and concentration of manufacturing facilities with restricted few, destroy the competition and gradually eradicate the small players. Also it will wreck the role of MSMEs in defence sector; least enhancing its role.

**Indian Offset Partner – an intriguing omission**

The complete omission of the IOP (Indian Offset Partner) from the DPP 2016 is another critical policy gap in the document.

India is the world's largest importer of defence acquisitions, previous year it spent $ 5.57 billion- 7 per cent of global arms purchase; 15 per cent of the volume of global arms imports in the last five years[19]. To put it differently, India spends a substantial quantum of precious foreign exchange in maintaining its sovereignty.

As a mechanism of generating compensation (offsets)[20] against defence imports, an offset policy[21] was formulated in the Defence

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[18] By creating step-down subsidiaries and Associate Companies

[19] SIPRI Military Expenditure Database, 2015, https://www.sipri.org/databases/milex

[20] When a supplier places work to an agreed value with firms in the buying country, over and above what it would have brought in the absence of the offset. (Stephen Martin and Keith Hartley (1995), quoted in Jurgen Brauer and J. Paul Dunne (eds), Arms Trade and Economic Development: Theory,

Procurement Procedure (DPP) 2005 with focus on contributing to the nation's goal of developing its domestic defence industry. The policy introduced a trigger offset per cent under "buy" and 'buy and make" categories. The foreign vendors had the liberty to discharge their obligations either through the execution of exports of Indian items and services or through investments in India's partner company (referred to as IOP) by way of JV. The results have been underwhelming. Buoyed by the success of the Offset Policy and also to succeed 'Make in India programme, some major enabling amendments were made DPP 2013, in the last quarter of previous year.

While it is reported that defence ministry has firmed up its futuristic offset policy to promote technology transfer and skill development under 'Make in India' programme, the complete absence of reference to Indian off set partner is intriguing[22].

**Decentralised Procurement – breeding ground of corruption, violative of CVC Guidelines**

In defence the procurement is decentralized. Annually scores of items worth crores of rupees are purchased by the respective

Policy, and Cases in Arms Trade Offsets, Routledge, London and New York, 2004, p. 4.)

21 Offsets have long been identified as the tools to drive defence manufacturing in India.

22 Defence ministry to change offsets policy; proposals worth $16 billion underway, December 26 2015, http://economictimes.indiatimes.com/news/defence/defence-ministry-to-change-offsets-policy-proposals-worth-16-billion-underway/articleshow/50328590.cms

units/departments of each of the wings of defence forces. It is reported there are around three thousand units, in aggregate, that procure various items/spares in silos. Each Unit/department has separate Rules and procedures including registration of each vendor. Since each of the units procures independently there is no or minimal coordination amongst the units least in the wings of defence services or MoD. E tendering through Central Public Procurement Portal[23] in compliance with CVC Guidelines is made by Defence Research and Development Organisation (DRDO) and Indian Ordinance Factories (Ministry of Defence). Standalone procurement by each of the wings of services as well as their separate units not only propagates corruption but also is costly as well as time consuming. This procurement system violates the Guidelines, Orders etc issued by Central Vigilance Commission with regard to public procurement from time to time. General Financial Rules also mandates that 'every authority delegated with the financial powers of procuring goods in public interest shall have the responsibility and accountability to bring efficiency, economy, transparency in matters relating to public procurement and for fair and equitable treatment of suppliers and promotion of competition in public procurement.[24] The Hon'ble Supreme Court has also reiterated that 'the award of Government contracts

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[23] https://ofbeproc.gov.in/ofbeproc/partner_login.html? and http://drdo.gov.in/drdo/tenders/liveTenders.jsp (as accessed on 20th April, 2016)

[24] Rule 137 , General Financial Rules 2005, http://finmin.nic.in/the_ministry/dept_expenditure/gfrs/GFR2005.pdf p 27

through public-auction/ public tender is to ensure transparency in the public procurement, to maximize economy and efficiency in Government procurement, to promote healthy competition among the tenderers, to provide for fair and equitable treatment of all tenderers, and to eliminate irregularities, interference and corrupt practices by the authorities concerned.'

This lopsided policy in the name of security and sensitivity must give way to law of the land.

## PROPOSED AMELIORATIVE STEPS

### Corporate and Demutual Indian Vendors

The defence arms market is churning, resulting in increasing competition; it is under intense pressure from the twin forces of Globalisation and Technological advancement. Technological development also changed the conditions of competition in the arms market, and, as a result, the vendor now has to face domestic and international competition. As the volume of the business has increased manifold, so has the risk in the business increased. The sustainability risk needs to be addressed and mitigated. The Indian Vendor, to stay relevant under these conditions needs to be responsive to dynamic market ecosystem; it should be a Corporate and Corporate only.

In Section II we had elaborated and established the shortcomings of this 'mutual' form of business model. The Ownership and Management of the business must be segregated; risk of the

business should be distinct and transferred to another Person. The other Person, when corporate, will enjoy a higher risk appetite; higher the risk, higher the profit, as the saying goes. Besides, a corporate is bestowed with the veil of legal persona; it enjoys the privilege of being bound and also can bind the other party with contractual obligations. Its operations are accountable and verifiable. Accounts preparation and Auditing systems and procedures are well regulated. Financial institutions rely on them. Such corporate form of business therefore has an easy access to public funding. Moreover, segregation of Ownership and Management in the corporate model brings in Transparency, Predictability and Responsibility Fixation (should the default happen) and to cap it all the benefits, such model is also the harbinger of Professionalism - the way one does the business. Professionalism will promote innovation and coupled with public funding, the benefits will accrue to Indian Vendor; and Indian economy as a whole. This will also facilitate the Indian Vendor to meet its financial and other obligations as set out in the DPP 2016.

**Companies Act 2013 facilitates various models of Company for SMEs**

Companies Act 2013 the recently enacted market-centric legislation is the springboard for corporate business models. As a startup, various models of SPV have been provided for in the new act. Entrepreneurs may pick up either of them on need-based basis

and as the business matures, complex models of Company will ease governance of the business.

Sole proprietary entities can be converted into One Person Company having liberal compliance requirements. The definition of private companies has been enlarged. Now 200 persons may be the shareholders in a private company, thus scope of private equity funding has also been widened. The hitherto onerous compliances have considerably been liberalized. To promote techno entrepreneurs, a noble gateway has been created. Till the business reaches commercial stage, Dormant Company status will be insulating the IPRs. In addition, to nurture a company it is no more necessary to have a financial risk exposure of 51%; one may invest as low as 20% in an Associate Company and achieve almost similar objectives. Global search and protection of IPR on country-reciprocity basis is one of the marvels of the new Act. The mandatory and all pervasive Straight Through Process in the corporate filings and administration has brought in much desired Transparency, Efficiency and Audit Trail in the system. Incorporation procedures have been simplified and made on click of button. Insolvency laws also under liberalization. To cap it all, the Indian Accounting Standards as well as the Annual Report contents, structure and the (software) language has also been integrated and brought at par with the best global standards and practices.

Consultants and other Professionals can mitigate their financial risks besides may avail access to the bank funding by creating a corporate under the Limited Liability Partnership Act 2008. The owners will enjoy the privileges of a partner while at the same time Enterprise is a corporate.

To sum up, the definition of Indian Vendor in the DPP 2016 should be amended to say 'an Indian entity, which could include incorporation models as per Companies Act, Limited Liability Partnership Act 2008 or other similar Acts' by deleting 'partnership firms, proprietorship, and other types of ownership model as per relevant Indian laws,…..' The proposed amendment will put the Indian Vendor on a high pedestal of growth and remain highly competitive in the global defence arms market.

**Restore IOP in DPP 2016 - the SPV of defence arms industry**

The key to creating a modern defence industrial complex in India is by leapfrogging through the induction of latest defence technologies. Skill development, innovation centers, training institutions and labs are essential to raise a new generation of skilled workers for the defence and aerospace sector. SMEs contribute most to innovation because of low scale of economies and the high importance of knowledge. Collective learning networks encourage innovation, especially for SMEs that lack the assets and resources to invest directly in R&D. In the current economic context, the ability to innovate and build entrepreneurial societies is even more compelling than before.

2015 Framework for the U.S.-India Defense Relationship under the Defense Technology and Trade Initiative (DTTI) between India and United States is an unprecedented joint endeavor between United States and India to guide, co-develop, co-produce and expand by fostering bilateral defense and strategic partnership over the next 10 years. This agreement is expected to serve as the springboard for American investment in the Indian defence sector and for the Transfer of Technology. Moreover after the recent visit of President Barack Obama to India both the countries have agreed to proceed on four items under the DTTI. If this model of defence cooperation succeeds, India will eventually become a producer of lucrative big-ticket items. This is likely to fit in well with the Indian government's 'Make in India' initiative.

Also during the recent meeting of Defence Ministers, both countries have pledged to expand their collaboration to bolster India's indigenous defense industry. The Logistics Exchange Memorandum of Agreement [LEMA] to share critical military logistics has also received in principle approval of both the ministers. Recently approved, Uniform Integrated Protection Ensemble - Increment 2 (UIPE I2) will see US companies collaborating with an Indian partner for the manufacture of new-generation chemical and biological resistant protective clothing for the entire Indian army. Two new pathfinder projects under the DTTI on Digital Helmet Mounted Displays and the Joint Biological Tactical Detection System have also been agreed between the two countries.

Due to the shift of balance of strategic military power, it is apparent that there are positive indications of favourable geo-political environment in the world; it is possible for India to upsurge to a higher technological pedestal through the induction of advanced defence technologies from the US and West.[25]

India will have to set its regulations and procedures as facilitators by making the business environment business friendly and enticing enough to attract massive Foreign Direct Investment and creation of joint ventures. It is thus, imperative that the provisions of off set policy through the IOP route be restored in the DPP 2016. Transfer of Technology by IOP is ideally the most economical and viable alternative to bring in latest technologies in India. This will enable creation of local employment, upgradation of technology levels while ensuring substantial increase in both domestic production and export capability. This will also leverage the domestic industry specifically the SMEs to enter the sophisticated markets of defence products; the most cherished principle of DPP 2016.

**Centralized Registration of Vendors and web hosting on Central Public Procurement Portal**

One of the focus areas of Defence Procurement Procedures is facilitating 'contractual obligation in a transparent, cost effective,

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[25] Verma, Bharat; How to Setup A Modern Defence Industry in India?, Indian Defence Review, Issue Vol. 29.1 Jan-Mar 2014 | Date : 10 Apr , 2016, http://www.indiandefencereview. com/news/defence-industry-reach-for-the-sky-2/

reasonable and responsive manner'. In the context of Public Procurement, best practices commend that such procedural obligations are incorporated in the DPP itself bringing in uniformity and predictability in defence acquisitions.

The registration as well as the tendering process in all the wings of the three services should be centralized and digitized. The use of ICT is one of the bedrock principles of public procurement in Digital India. The centralized registration of vendors through a web portal will make the procedures predictable, transparent, seamless, cost effective and reasonable. In case of any investigative enquiry, Forensic Audit may also be conducted to reveal the truth which no other mode of document keeping can afford. The Vendors (contractors) do not have a case that e-tendering process is either arbitrary or mala fide and the fundamental rights of the contractors were (are) not affected in any manner. 'If the Statute is silent about e-tendering process, definitely the Government can issue executive orders permitting such new procedure to be adopted which is a welcome gesture and cannot be interfered by invoking writ jurisdiction under Art. 226 of the Constitution of India'. [26]

## CONCLUSION

DPP 2016 makes a pioneering effort to underline the cardinal principles and procedures for defence arms acquisitions as

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[26] Contractors Union v. Corporation of Thiruvananthapuram, WP(C).No. 28179 of 2013 (V), Kerala HC, https://indiankanoon.org/doc/119645578/

envisaged in the Preamble. Radical shifts in the procedures have been proposed in the document. The centerpiece of the new policy is to boost home grown defence industry and give a fillip to Prime Minister Narendra Modi's 'Make in India' initiative. The private sector is envisaged to play a much bigger role in production of military hardware.

With that as flagpost objective of DPP 2016, it is imperative that procedures must encourage the domestic manufacturers to indigenously produce equipments in a phased manner involving Transfer of Technology (ToT) of critical and complex components, depth and scope from the foreign OEM.[27] Policy gaps, left unattended in the document, will be the roadblocks to achieve the desired outcome.

As new technologies and globalization reduce the importance of economies of scale, the potential contribution of smaller firms is increasingly enhanced. Manufacturing defence equipments involve substantial investment in financial as well human capital. However, with the present form of business model followed by MSME, it cannot play the pivotal role in Make in India. This sector is characterized by low adoption of technology due to poor or no access to public funding that impacts the sector's competitiveness. DPP 2016, in its present form, is leading MSME to dark aisles. DPP should promote a business model wherein the risk of the business is transferred to the risk of the enterprise.

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[27] Supra note 1 p1

Precedents are many. The Stock Exchange and the film industry in India are corporatized and demutual. Today both of them have enviable growth trajectory.

Then, there is a silver lining. The encouraging words have come from the Defence Minister himself. He has put it on record to say 'DPP remains a work-in-progress and a review will be undertaken after six months'. In the previous editions of DPP also modifications as well as policy interventions were made to encourage the indigenous development of domestic defence industry so that the large scale drain of wealth is prevented. Thus it is hoped, stated grey areas in the DPP 2016 will receive the attention of the policy makers to truly attain the objectives enshrined in Make in India programmes.

# STATE LIABILITY FOR PRIVATE SPACE ACTIVITIES: A CRITIQUE

*Dr. Vijaya Chandra Tenneti*[*]

## INTRODUCTION

The space era in the recent times has been witnessing a more revolutionary development in the form of the rapidly increasing involvement of private entities in space activities. The entry of private sector into the field of space activities has resulted in the commercialization of outer space. Today the commercial activities of private space players are assuming wider proportions, ranging from remote sensing, direct television broadcasting, communication, space tourism, space research etc., from the major part of outer space activities. The States are confronted with the problem of regulating these private space activities, as they are liable for any damage caused by the private space activities. It is pertinent to note that, the existing legal regime governing the outer space activities, are inadequate to deal precisely with the nature and extent of the liability of States for the private space activities. The successful application of space technology to various walks of human life has induced space commercialization and privatization. This has been identified to be one of the major challenges in the post-UNISPACE III Conference. This trend has led to significant increases in the number of non-State actors involved in the use,

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exploration and exploitation of outer space, as well as the number of different activities in which they are engaged.

## PRIVATE SPACE ACTIVITIES: THE EMERGING CHALLENGES

The growing role of private industry and other non-governmental organizations in space activities, coupled with the parallel decline in government funding for space programs are important aspects of another issue reflecting the overall economic trends. The private sector is becoming a viable potential partner in future activities. Because the primary role of private entities is not necessarily to work for the benefit of humanity, rather to make profit, attention should be focused on ensuring that the private sector activities benefit mankind and public serviced activities are given due consideration. It well be necessary to provide efficient activity control and monitoring, based on a legal framework that at the same time, facilitates and encourages business and cooperation. Currently, the exploration and use of outer space is not the sole domain of government. Private enterprises have discovered that quick bucks can be made in outer space.[1] Initially private enterprises were involved in the space activities of certain countries like the US by way of manufacturing of components for satellites, the launch equipment and other ground services. In the recent times there is a great upsurge in the number, role and

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[1] Michael S. Straubel, "The Commercial Space Launch Act: The Regulation of Private Space Transportation", Journal of Air Law and Commerce, Vol. 82 (1987) p.941.

participation of private enterprises in space activities.

Following are some of the challenges that need to be addressed in the near future, to have an effective and efficient legal control regime over the growing commercialization of space activities due to the increasing private space activities.

1. **Space activities are hazardous in nature**: It has long been recognized that space flights and exploration pose a risk not only for direct participants, but also for those who remain earth bound.[2] Space activities as they currently stand are highly sophisticated scientific adventures, failures and consequent disasters are also quite common.

2. **Space Launch Services**: Over the last decade, the character of space launch services has changed dramatically, needing our attention to its implications. There has been a growing trend towards the deployment of whole satellite constellations, by commercially organizes, multiple payload launches into the orbit, mainly the Low Earth Orbit (LEO). National and international telecommunications companies and organizations are becoming the main customers of governmental launch service providers. The needs and requirements of these private customers are becoming more and more relevant for service providers. This gives rise for a relook into the legal aspects of expanding global launch

[2] Ronals E.Alexander, "Measuring Damages under the Convention of International Liability for Damages caused by Space Objects", Journal of Space Law, Vol. 6 (1978) p.151.

services keeping in pace with this development.

3. **Space Traffic**: The use of telecommunication and broadcasting satellites for commercial reasons has been increasing immensely in the recent past, in both developed and developing countries. The post 1980s have witnessed the privatization of telecommunication services. The result of this liberalization is global competition between new telecommunication providers. This increased commercialization of space activities has characterized the space commu8niation industry and in course of time this has been extended even to such crucial areas of space exploration like remote sensing data. Many space faring nations are now entering into substantial long-term purchase agreements with commercial entities for the delivery of requires imagery rather than building their own remote sensing satellite systems.

4. **Intellectual property rights**: this is yet another important area which has a great bearing on the growth of private space activities. With the participation of private actors into the arena of space activities, there has been growing interest shown in the intellectual property regime, wherein, many private companies are laying their claims for IPRs, which run counter to the letter and spirit of the fundamental principles governing the exploration and exploitation of outer space. While IPRs encourage private monopoly rights, space

activities are associated with the common interest and welfare of the mankind. Hence there is a need to reconcile these two contradictory interests.

International space law, which essentially constitute the five space treaties and five UN Resolutions on space, has developed for its most fundamental part when only States were undertaking space activities in any meaningful sense of the word. This poses the fundamental question whether international space law is adequate to deal with private space activities, and notably to balance valid private interests with the general public one in outer space and space activities.

## REGULATION OF PRIVATE SPACE ACTIVITIES: THE INTERNATIONAL LEGAL REGIME

It is significant to note that ever since the dawn of the space age, the United Nations has initiated measures to develop a regulatory regime for the outer space activities by the States in the larger interests of mankind, considering also the fact that space is the province of mankind and that it constitutes the common heritage of mankind. The efforts of the UN ultimately culminated in formulation of five multilateral treaties. The international legal principles in the five outer space treaties have established that the exploration and use of outer space shall be the province of all mankind and that outer space, including the Moon and other celestial bodies, is not subject to national appropriation. Those legal principles have also ensured freedom of exploration. They

have banned the placement of nuclear weapons and any other kinds of weapons of mass destruction in outer space and provided for international responsibility of States for national activities in outer space, liability for damage caused by space objects, the safety and rescue of spacecraft and astronauts, the prevention of harmful interference in space activities, the avoidance of harmful contamination of celestial bodies and adverse changes in the Earth environment, the notification and registration of objects launched into outer space, scientific investigation and the exploration of natural resources in outer space, as well as the settlement of disputes. Each of the treaties lays great stress on the notion that outer space, the activities carried out there and whatever benefits might accrue from them should be devoted to enhancing the well-being of all counties and humankind, and each includes elements based on the principle of promoting international cooperation in outer space activities.

The Outer Space Treaty, Article VI provides that the States parties to the treaty shall bear international responsibility for activities in the outer space, including the Moon and other celestial bodies. The activities of non-governmental entities in the outer space, including the moon and other celestial bodies, shall require authorization and continuing supervision by the appropriate State party to the treaty. It ensures that the parties cannot escape their international obligations under the treaty by virtue of the fact that the activity in the outer space or in celestial bodies is conducted through the medium of non-governmental entities or international

organizations.

Further, Article VII of the Treaty States that 'Each State party to the Treaty that launches or procures the launching of an object into Outer Space, including the moon and other celestial bodies, and each State pat from whose territory or facility a object is launched, is internationally liable for damage to another State party to the treaty or its natural or juridical persons by such object or its component parts on the Earth, in air space or in outer space, including the moon and other celestial bodies.

Reading from the Article, doubts were expressed as to whether the expression international liability used in the Article embraces no fault liability or it refers to the principle of absolute liability on the part of an erring State. During the debates at the UN COPUOS on Outer Space, on the nature and scope of the term 'international liability' views has been putforth about the doubting of the inclusion of the principle of the concept of absolute liability to the term 'international liability. The implication of such debate was that eh term 'international referred to international customary law standard. The international customary law dictates that a State is liable to make reparations for breach of its international obligations or rights of another State, which results in damage to the latter. The international customary law dictates that a State is liable to make reparations for breach of its international obligations or rights of another State, which results in damage to the latter. It is well established in domestic law that two sets of

rules would apply depending on the nature of the activity which caused damage to the claimant. In domestic law, liability is generally based on fault or negligence in the case of ordinary kinds of activities. On the other hand, if the activities are inherently dangerous or ultra hazardous, liability would be fixed independent of any fault or negligence on the part of the defendant.

The system of dual standards, even though almost well settled in domestic law, is not yet concretized in international law. There is no agreement among writers and decisions of the World Court and other tribunals on the question, whether liability of States is based upon the existence of fault or negligence r culpa, or independent of all these.[3] Thus, the basic question that rises in the case of the liability of State is whether the absolute liability principle is elevated to the status of a general principle of law, part of customary law, general principles of international law, or such subsidiary sources of the law as eth decisions of international tribunals and writings of publicists. If the answer is positive, then international liability means absolute liability at least in certain circumstances.[4] Since the Outer Space Treaty virtually applies international law including the Charter of United Nations into outer space to regulate the activities of contracting parties in outer space, it should mean that absolute liability would be the standard

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[3] See Judgment of PCIJ in the Chorszow Factory (Indemnity)case (1928) PCIJ Series A.No. 17 and ICJ Judgment in Corfu Channel (Merits) Case ICJ Reports 1949, p.4.

[4] John M.Eelsen, “State Responsibility and Abnormally dangerous Activity”, Harvard International Law Journal, Vol. 13 (1972) pp. 200-201.

of liability at least in certain specific circumstances.

The Liability Convention 1972 is yet another Convention, which regulates the regime of international liability on the part of the States for their outer space activities. The Convention is essentially an elaboration of the provisions related to liability for outer space activities under the outer space Treaty. The general statements of liability in the treaty were altered, systematized and better and more comprehensively formulated in the Liability Convention. The major alternation in this direction was the substitution of 'absolute liability' for international liability concerning the liability of States for damages caused by space objects. The scope of the Convention is limited to damage resulting from space objects and not concerned with liability for damage resulting from primarily other causes such as abuse of rights in outer space. The convention provides for two standards of liability depending on where or in which spatial areas, the damage has occurred- that is under certain conditions absolute liability, independent of fault or negligence and under certain other conditions liability based on fault or negligence.[5]

The general doctrine on State responsibility provides, that States are responsible for internally wrongful acts; acts violating obligations under international law.[6] Article III of the Outer Space

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5 See V. Madhusoodhanan, "Law of Liability in Outer Space", in Balakista Reddy and others (ed), Recent Trends in International Space Law, New Delhi, 2000, pp. 427-428.

6 See Arts 1,3, 4, International Law Commission Draft articles on State Responsibility ILC YB 1980 Vol II, 30-4.

Treaty makes it clear that general public international law functions as a lex generalis where the lex specialis of space law itself is moot, unclear or open to conflicting interpretation. Under het terms of Article VI of the Outer Space Treaty States are responsible to the same extent for private activities as they are for public activities. No exemption from international responsibility for private activities can be claimed by arguing that a State acted with due care. Private space activities are without further qualification equated for the purpose of international responsibility, to the activities of States. Thus, the States would have to answer internationally for private apace activities violating international space law.

A State will be inclined to exercise any jurisdiction available to it primarily vis-a-vis those particular categories of private activities for which it can be held accountable under international space law.[7]

**Regulation of Private Space Activities: A Critique on Existing Legal Regime**

A look into the existing legal regime governing the space activities of States and their application to the private activities reveals that, the existing regime is inadequate to deal with the private space activities and he increasing trends in commercialization of space activities.

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[7] See B.Cheng, The Commercial Development of Space: The Need for New Treaties, (1991) 19 Journal of Space Law, 37.

Following are some of the shortfalls in the existing legal regime so far as the regulation of private space activities are concerned:

1. The Outer Space Treaty and the Liability Convention fails to distinguish State responsibility and State liability in their modern sense.

2. The Outer Space Treaty and the Liability Convention provide two different regime of liability for space activities. While the former does not make any distinction between the liability for damage caused on Earth, air space and outer space, while latter applies absolute liability for damage caused o Earth and air space, and fault liability for damage caused in outer space.

3. The State responsibility regime provided under the Outer Space Treaty is not in conformity with the traditional notion. Traditionally, the State responsibility for injurious acts done by the private persons is limited only to the extent of failure of the State to exercise due diligence in punishing the offenders and compelling them to pay damages. But under the Outer Space Treaty State must bear responsibility for whatsoever act conducted by its agents or private persons within the State.

4. The Outer Space Treaty imposes a duty on appropriate State to authorize and supervise private space activities but it fails to define 'appropriate State' in clear terms. Though the term used here is appropriate State its meaning is confined to one

single State. There might be several States which fit into the ambit of appropriate State, within Article VI of the Outer Space Treaty.

5. The Outer Space Treaty also confines the State liability only for damage caused to another State which is a party to the Outer Space Treaty. It is silent about the liability for damage caused to other States (non-parties) and to their subjects. The existence of two different regimes has resulted in confusion especially in determining liability in cases of joint launching. It may result in absurd consequence of imposing liability on some of the States involved in joint launching while making others not liable.

## CONCLUSION

The outer space treaty, the '*lex generalis'* and the Liability Convention, the 'lex specialis', heavily relay on the traditional principles of State responsibility, combined with justice and equity for attribution of liability and assessment of compensation for damage, with minor variations such as exclusion of the rule of exhaustion of local remedies, to suit the needs of the current State practices in outer space. The normative system of international space law, though addressed to States, obviously is also applicable to private space activities, which are allowed under pace law albeit subject to authorization and continuing supervision by a State. These private activities should conform to the same rights and obligations which public space activities are obliged to comply

with even if, private enterprise is currently not directly bound by those rights and obligations. Consequently, the task of authorization and continuous supervision rests squarely upon the shoulders of states to realize this.[8] It should be noted that, the Outer Space Treaty and the Liability Convention were drafted at a time when the global community could not visualize the entry and role of private space activities.

The new international space industry, with numerous countries being involved in every commercial space venture, has highlighted the commercial inadequacies of the present liability regime which apportions strict liability to countries and companies responsible for damage caused by space debris. Accordingly, in order to adapt to the growing role and involvement of the private space activities in outer space, the allocation of liability and the means of resolving disputes would have to be streamlined and clarified to make the present space law regime respond to these shortfalls effectively.

The law for space activity now requires more clarification and precision for addressing and extremely sophisticated and diverse space industry, especially one that has become so privatized and commercially intense. This situation may demand a new regular and regime that would establish more efficient international legal standards and recommendations.

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8 See Frans G Von'der Dunk, "Sovereignty Versus Space: Public Law and Private Launch in the Asian Context", Singapore Journal of International & Comparative Law, (2001) 5 p 25.

Time has come to draft a separate legal framework on State responsibility and liability for Outer Space activities. As the private space activities are expected to increase by many folds in the near future, the legal framework must strive towards a viable solution to the above discussed problems. The regime must strike a balance between the interests of private persons on the one hand and that of the States on the other to avoid undue burden on either parties.

# EXAMINING THE NEED FOR A NATIONAL INDIAN SPACE LEGISLATION: IMPEDIMENTS AND POLICY SOLUTIONS

*Devarshi Mukhopadhyay*[*]

*Abstract*

*A significant section of space industry research experts claim that the policy regime surrounding a comprehensive national space legislation for India hasn't developed at par with her entry into the global satellite and space product market, fifty years ago. Consequently therefore, the need to adopt a national space legislation in order to protect the sovereign and commercial interests of the country, has assumed significant momentum in policy discourse. While ISRO early this year launched discussions on a law, space activities are currently guided by a set of various international space agreements, the Indian Constitution, national laws, the Satellite Communications (SatCom) Policy of 2000 and the revised Remote sensing policy or 2011. K.R. Sridhara Murthi, former Managing Director of ISRO's Antrix Corporation, was of the opinion that a national law should have preceded ISRO's international launch services as the country could face huge liabilities. As a new set of*

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*entrepreneurs had emerged and government spending in the sector increased, we have also observed a change in the risks vested by different actors in the space industry. Naturally therefore, the question of regulation has plagued policy-making. The apprehension of losing control over development and direction of space policy and activities is perhaps the single most important reason why space programmes continue to be controlled by government agencies in many countries that have taken neither an initiative to harmonize international space law conventions nor legislate specific national space laws.*

*Given the pace at which the industry continues to expand with its commercialization as well as private participation in outer space, an effective regulatory mechanism for governing space assets and applications must guide the future of space activities in India. Having kept this broader developmental agenda in mind, the author shall deal with the following aspects, in the course of this paper:*

*(a) In light of a significant expanse of space tourism and the subsequent presence of close to 15,000 space objects, how must we ensure,*

*through a law, that such activities do not impede the activities of working satellites? Attention will also be drawn to space transportation systems and satellite broadcasting.*

*(b) Viability of unanimously adopting the Bangalore Declaration into statute, especially with regards to indemnification, sale of space objects, technology transfer, intellectual property and space governance. Attention will also be drawn to licensing and registration policies that could be used without significant logistical impediment.*

*(c) Possibilities of a licensing regime for private players, with special powers reserved in the interest of national security. If such a regime is possible, then how can it be designed?*

*(d) Dealing with space debris: Challenges Ahead.*

*(e) Mandating insurance cover for outer space projects, specifically in a PPP model.*

## INTRODUCTORY NARRATIVE: LOCATING THE NEED FOR A NATIONAL SPACE LEGISLATION

The requirement for national space enactment is fundamental, particularly in light of the fact that India is progressively hoping to

privatize and popularize space resources, extend capacity in space investigation and exploratory revelation, market its ability to assemble satellites and offer dispatch administrations from its offices.[1] In perspective of this rising advancement, the creator is guided by the conviction that national space law should be to administered with the end goal of making clear and straightforward administrative rules for residential industry keeping in mind the end goal to quicken speculation and to guarantee the development and improvement in this capital concentrated - exceptional yield vital division. [2]

This paper will look at whether India needs to institute space laws in connection to its present state hone and to its developing household prerequisite in the space division. [3]

The reason for nations to build up national space enactment inserted in settlement procurements contained in the corpus of worldwide law of space is understood.[4] However it is useful to review the particular procurements that require such activity by nations that have approved the assentions. It is on the premise of those all around embraced rule that this paper urges India to build up national space enactment at the most punctual to satisfy arrangement commitments as well as in light of the fact that the condition of advancement of space exercises and space industry in

1 Dr. V Balakista Reddy, Space Law and Space Policy in India, *Centre for Air and Space Law*, NALSAR.

2 *Ibid,* pp. 1.

3 *Id.*

4 *Id.*

the nation have achieved a level puts forth a convincing defense for administrative activity.

## GLOBAL ENACTMENTS AND INTERNATIONAL SPACE OBLIGATIONS: FROM TREATY TO CUSTOM AND BEYOND

Worldwide law on space is contained in five universal instruments received under the sponsorship of the United Nations (UN) through the General Assembly's Committee on Peaceful Uses of Outer Space (COPUOS). Obligations forced on approving states are contained in particular bargain procurements as under:

### 1967 Outer Space Treaty [5]

i) State Parties to the Outer Space Treaty bear global obligation regarding national exercises in space including the moon and other heavenly bodies, whether such exercises are done by legislative or non-administrative elements (NGO) and for guaranteeing that national exercises are completed in similarity with the procurements put forward in the OST. As it were a sanctioning State is bound to the standards of investigation and utilization of space for quiet purposes, universal participation, no national allocation and no weaponization. Moreover the State will undoubtedly guarantee that all that such exercises are appropriately approved and completed under its proceeding with supervision.

ii) The Outer Space Treaty forces obligation for harm by making a

[5] Outer Space Treaty, 1967.

starting state globally at risk for harm to another State Party, its own particular regular or juridical individual on earth, air and space, if its space article or segment causes harm .

**1972 Liability Convention[6]**

The risk procurements of the OST have been supplemented and extended by the 1972 Liability Convention. Article I of the Liability Convention characterizes the expression "dispatching state" and Article II builds up outright risk for harm brought about on the earth or to flying machine in flight. As such, no verification of harm brought about on earth or to airplanes in flight is required to be proffered by the petitioner. In any case, Article IV permits alleviation of obligation on the premise of evidence of gross carelessness on the part the petitioner. Then again, Article III of the Convention sets up shortcoming based risk for harm brought about in space. Article VII excuses the starting state from risk in admiration of nationals of propelling state and outsiders taking an interest in dispatch. With regards to this Paper, the most critical point to note is that it is the State, and not a private individual whose space object has brought on harm, that is straightforwardly held globally obligated. In this manner, national lawful framework should be set up for the repayment of the pay to the State which has been required to pay to the victim(s) of a mishap by the space object of a NGO.

It needs no emphasis that the general purpose of the obligations

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[6] Liability Convention, 1972.

and liabilities forced by the worldwide arrangements identifying with space is to empower the concerned States that endure harm to claim remuneration regarding the methodology identified in the bargains.

The late decades have seen some jamming in space, especially the Low Earth Orbit and in some measure the Geostationary Orbit which convey satellites that perform non military personnel capacities from route and remote detecting to information transfers and TV. The incessant endeavors by COPUOS, OOSA to urge part states to embrace national space enactment have not met with agreeable results. [7]

## EFFECTUATING SPACE GOVERNANCE: EXAMINING THE '*WHY LAW*' QUESTION IN INTERNATIONAL SPACE ARENAS

The prerequisite to blend global arrangement commitments is innate in the worldwide settlements under audit. Harmonization hence speaks to the key physical connection, so to speak, between a country's all around pronounced stand in the global stadium on space (or some other matter) and its national application. In its spatial connection blending settlement commitments with national law shows the proceeding with resolution of a nation to bolster the basic requirement for aggregate measures to oversee global undertakings so as to guarantee that space does not turn out to be

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[7] *Supra* Note 2, pp1.

yet another battleground for countries. [8]

Besides, in global law every State must satisfy every single worldwide commitment in accordance with some basic honesty, regardless of whether or not it fits those commitments with its national law. Orchestrating global traditions with national law gives a State a vital reason or premise to administer residential law in way imperative to national circumstances and necessities, while yet holding at all times the privilege to alter, annul and institute new laws. This component is to be particularly underlined[9]. The misgiving of loosing control over improvement and heading of space approach and exercises is maybe the absolute most critical motivation behind why space programs keep on being controlled by government organizations in numerous nations that have taken neither one of the initiatives to blend universal space law traditions nor administer particular national space laws.[10] This is especially valid for creating nations in the Asia-Pacific area a couple of which are all around perceived for staggering accomplishments and future capability of space advancement.[11] But Australia, Japan and South Korea none of alternate nations in the Asia-Pacific locale have actualized universal traditions through national space laws. This is valid for space faring powers Indonesia, Pakistan, Singapore and Thailand that have space applications programs

[8] *Ibid.*
[9] *Id.*
[10] Dr. Ranjana Kaul, Does India Need Space Laws? *Journal of Law and Policy*, Vol.4 Issue 2, (2013), pp 34-36.
[11] *Ibid.*

without dispatch capacity. It is similarly valid for China and India which are space powers with indigenous business dispatch capacity.

The fact of the matter is of exceptional significance to China and India[12] which have both made marvelous advances and are currently ready to set up another request in worldwide rivalry. Maybe the improvement of space capacity programs under close government control without the mediation of particular national space enactment was deliberately important in the early years for these nations. It is unmistakably clear that the system has attempted further bolstering their best good fortune. It is learnt, be that as it may, that China is in a matter of seconds during the time spent building up its national space law. India would do herself injury in neglecting the way that quickened regular citizen business utilizations of space innovation will essentially require full cooperation of the private segment including more noteworthy transnational, respective and multilateral communications[13]. In such a situation national space enactment gets to be basic. Clarity, straightforwardness and an easy to understand lawful administration taking into account effortlessly open data is cardinal if the nation would like to harvest lucrative comes back from a national space economy.[14]

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12 China's Space Activities, *The State Council Information Office, P.R.C.,* November, 2000 Beijing.

13 *Ibid.*

14 *Id.*

Constitutions in nations with equitable types of government as a rule require particular national enactment to enable the legislature to pull back cash from its national treasury keeping in mind the end goal to make installment to release obligation to petitioner states . This component is particularly important to nations promoting business dispatch administrations which convey characteristic money related obligation, protection and repayment measurements. More so now than any other time in recent memory as nations of the world turn out to be progressively occupied with the productive utilization of space empowered advancements as an instruments for household improvement, development and national security, whether they are space powers or space faring powers. Unavoidably, then, is national space enactment[15] basic as well as vital that pertinent national laws right now in power be returned to guarantee that they react to rising space innovation applications issues. [16]

In this setting it is essential to highlight an exceptional property of the worldwide space law arrangements under survey. Albeit universal space arrangements don't force sanctions if commitments emerging out of them are not actualized in national law, they may yet be considered, by their demonstration or oversight, in break of worldwide law. The arrangements accommodate conferences through political channels or through the Office of the Secretary General of the UN as the favored system to determine debate, to

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[15] *Id.*

[16] *Id.*

summon obligation for harm and to look for pay.[17] The utilization of this component is, notwithstanding, restricted to the determination of a question or claim as between gatherings which have sanctioned the settlements. It doesn't fit national application.[18] Along these lines the nonappearance particular national enactment does not exculpate Member States from the obligation to release risk under the Liability Convention. An inability to do as such for what so ever reason would be a rupture of the space settlements and general global law. [19]

An audit of status of harmonization of worldwide space traditions and the improvement of national space enactment by approving Member States yields two oppositely inverse positions as amongst created and creating nations. Australia, Canada, UK, Sweden and Israel are nations with national space laws in different structures. The United States and the Russian Federation (previous Soviet Union), first to investigate and utilize space and push for the finish of global space law traditions under the support of the UN have locally orchestrated the universal traditions in unfathomably distinctive ways. An imperative point to note in this connection is that American and Russian national space laws have fused a few, however not all, standards cherished in OST and different traditions without really utilizing the particular literary expressiveness of those settlements.

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17 Ms. Fatimah Yusro Hashim: Faculty of Law, National University of Malaysia , *' Status 2003 Space Policy and Institutions in Malaysia',*

18 *Ibid.*

19 *Supra* Note 2, pp. 1

National space laws are the after effect of national space approaches. Changes in approach require relating adjustment in separate laws. For instance, the United States National Space Policy has been created over numerous years. It keeps on developing in light of changed objectives and targets of the country, spending plan limitations, past space approaches, current projects, national and global law, and arrangement commitments. The strategies are concretized by a few particular national laws that set up the vital lawful administration for accomplishing the target of ensuring and encouraging national interests and strength in all matters concerning the investigation and utilization of space . [20]

Russia has fit the global traditions into a solitary omnibus law suited to further its national advantages including financial advancement, national security and predominance in space. Law of the Russian Federation on Space Activity 1993[21] is a far reaching enactment which pronounces the advancement of prosperity of the residents of Russian Federation, the improvement of Russian Federation and guaranteeing its security, and also taking care of worldwide issues of humanity as the objective and reason for its space action. The Act endorses national treatment for issues running from permitting, affirmation of space innovation, wellbeing of space movement, subsidizing of space action, protection, obligation, risk for harm, question determination, security of environment and biology, advancement and money

[20] *Ibid.*
[21] *Id.*

related backing to improvement of space sciences to worldwide collaboration. The Act consolidates the guideline of universal obligation regarding its exercises in space also a few preclusions recorded in the traditions sanctioned by Russia[22]. The Russian space project is controlled by the Russian Space Agency (RKA)[23] which was built up on February 25, 1992 specifically under the supervision of the Russian Federation portrayed in the Edict 'About the structure of administration of space movement in Russian Federation' issued by President Boris Yeltsin around the same time. The RKA is presently additionally vested supervisory power over the flight segment . Along these lines the consolidated substance Rosaviakosmos directs both the non military personnel flight and space segments. Russian military resources stay under the control of the Russian Military Space Forces (VKS). [24]

## EXISTENT REGULATORY MECHANISMS IN INDIA: PAVING THE WAY TO A POLICY ALTERNATIVE

The beginning stage for a discourse on the general logic which guides India in the behavior of worldwide relations and in the fastidious release of universal commitments is enunciated in the Constitution of India.

Article 51[25] in the Constitution guides the Executive to (advance) universal peace as India's target in the worldwide circle and gives

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22 Law of the Russian Federation on Space Activity, 20th August, 1993.

23 *Ibid.*

24 *Id.*

25 Article 51, Constitution of India, 1949.

the premise to the residential actualizing global bargain commitments.

Notwithstanding Article 51 two different Articles in the Constitution of India have an immediate bearing on the law making process in India significant to the point under exchange:

(i) Article 253[26] gives power to Parliament to make laws for actualizing India's worldwide commitments emerging from settlements, assentions, traditions or choices made at global gatherings, affiliations or bodies. In this manner it gives ability to the lawmaking body to instituting national space laws to satisfy the Order inborn in Article 51 in national interest ; and

(ii) Article 53[27] allows the President of India to practice the official force of the Union of India as per the Constitution. The Article additionally engages the President to delegate power to the VP of India or to Governors of States to practice official force for his sake.

Along these lines the Administration of India is skillful to offer impact to worldwide arrangement commitments through the activity of official force by the President of India straightforwardly or by implication as far as under Article 53 without summoning force of the Lawmaking body under Article 253 keeping in mind the end goal to satisfy the command of Article 51. At present, this is the standard on which state practice is established in

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[26] Article 253, Constitution of India, 1949.
[27] *Ibid.*

appreciation to global commitments emerging out of the four universal arrangements on Space approved by India.

To date no event has emerged when the obligation and risk statements have been globally conjured against India . That being said, it is impractical to foresee if there will be event later on when the Risk Tradition will be conjured to claim pay for harm brought on to another Part State or outsider by an Indian space object on the surface of the earth, to air ship in flight or in space. As effectively expressed the nonappearance of particular residential law to encourage release of obligation in exchanged harms is not a resistance in law and can't clear global risk under the Obligation Tradition. [28]

In this perspective of the matter, it gets to be crucial to comprehend rules set up by the four Exemptions that limit the general utilization of Article 51 of the Constitution. These principles have an immediate bearing on the present state rehearse in appreciation to global space law traditions and demonstrate the path for advancement of Indian national space laws for what's to come. The Exemptions must be comprehended in light of the way that Article 51 does not set out that universal bargains or understandings went into by India have power of metropolitan law without suitable enactment. This position was definitively chosen by the Incomparable Court of India in Varghese v. Bank of Cochin and Social liberties Board v.Union of India . Besides, albeit civil

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[28] *Supra* Note 11, pp. 3.

courts in India do regard standards of universal law without opposite enactment, Indian Courts will undoubtedly offer impact to the Indian law if there is an express enactment in opposition to a guideline of worldwide law, in spite of the fact that in this manner they are coordinated to decipher law in such a way, if conceivable, as won't abuse any settled rule of global law. The beneath recorded Exemptions to Article 51 portray particular conditions specialist to global bargain commitments which can be released by the Administration of India just through particular national law official on city courts. Subsequently particular national law is fundamental when a worldwide arrangement:

(1) Accommodates installment to a remote force, which must be pulled back from the Solidified Asset of India ; or

(2) Influences the justiciable privileges of a national ;

(3) Requires the taking of private property [Art.31(1), taking of life or freedom [Art.21], for example, removal or burden of an expense [Art.265], which under the Constitution should be possible just by enactment ; or

(4) Changes the laws of the State .

India has a long and built up point of reference for executing global traditions through particular national laws when commitments fall inside the circumstances depicted the Special cases to Article 51. In this manner we find that of the global traditions on space confirmed by India, commitments emerging out

of the 1972 Risk Tradition falls the principle of Exemption 1 while commitments specialist to the 1968 Salvage Understanding fall inside the domain of Special case 2,3 and 4. It needs no emphasis that standards of worldwide law urgent to the administration of national exercises in space exemplified in the 1967 Space Settlement should fundamentally discover reverberation in national space laws.

The 1972 Strategic Relations (Vienna Tradition) Act; 1960 Geneva Traditions Act; and Area 364 An of the 1960 Indian Corrective Code which offer impact to commitments emerging out of the 1979 Universal Tradition Against the taking of Prisoners are a couple case of national laws that offer impact to worldwide commitments emerging out of relating global traditions inside the domain of exceptional cases 2, 3 and 4. [29]

Worldwide Common Aeronautics gives a nearby relationship when managing the issue of regardless of whether to blend global settlements on space. As an Individual from the Worldwide Common Avionics Association , India has executed a few global common flight traditions through local law where orderly arrangement commitments have been inside the domain of Special cases. Along these lines the 1975 Tokyo Tradition Act (20 of 1975) offers impact to the 1963 Tradition on Offenses and certain different Demonstrations conferred on Board Air ship, Tokyo; the Counter Capturing Act, 1982( 65 of 1982) offers impact to the

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[29] *Ibid.*

1973 Hague Tradition for the Concealment of Unlawful Seizure of Flying machine; the 1982 Concealment of Unlawful Acts Against Security of Common Avionics Act (66 of 1982) offers impact to the1971 Montreal Tradition for the Concealment of Unlawful Acts against the Wellbeing of Common Aeronautics and the 1988 Montreal Convention for the Concealment of Unlawful Demonstrations of Brutality at Air terminals serving Worldwide Common Flight. These cases all fall inside the domain of exceptional cases 2, 3 and 4.[30]

. The most critical distinction is that while Warsaw Tradition fixes obligation for harm on the aircraft transporter though the Risk Tradition fixes obligation on the starting state for exercises in space of its nationals and its own organizations. The Warsaw and Obligation Traditions build up two sorts of risk: total obligation and issue based obligation. (i) Air bearers are held completely subject under certain conditions in appreciation to harm brought on to travelers and products and for deferral in universal common avionics, while a starting state is at risk for harm created on earth and to air ship in flight by space questions and parts thereof . The supreme risk of plane carrying warships or propelling state can be moderated on verification of due consideration by the transporter and contributory carelessness by the inquirer . In appreciation to the remuneration which can be guaranteed in sold harms, Warsaw

[30] *See generally*, Protocol to Amend the Convention for the Unification of certain Rules Relating to International Carriage by Air at Warsaw on 12 October 1929 .

Tradition endorses an altered money related roof while the Obligation Tradition abandons it open to contracting gatherings to touch base at a common settlement as to its quantum. (ii) Shortcoming based risk is forced for harm brought about on confirmation of adamant unfortunate behavior by the air transporter in course of worldwide common avionics and for harm created by a space item or its parts in space as far as the Obligation Tradition. [31]

The cardinal distinction between the global common avionics tradition and the universal tradition on space is that the last abandons it to the gatherings worried to achieve a shared settlement on the quantum of pay to be paid to the inquirer. This is a viable methodology which gives solace level to Part States following forcing particular quantum of obligation in sold harms would spell fate to beginning industry in space especially in the creating scene. [32]

To the extent India is concerned, the conditional opening of the space empowered administration division, especially permitting of private substances to satellite frameworks needs particular national law to be established critically since it is the Legislature which bears obligation and risk for exercises of its nationals in space. It is critical for India to consider this point particularly since the ISRO is presently effectively advertising dispatch administrations. The obligation joined to a 'starting state' is surely understood. Releasing

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[31] *Supra* Note 11, pp. 3.
[32] *Ibid.*

that risk will force a charge on the Solidified Asset of India. In the blink of an eye the Administration of India does not have capability to release obligation as a starting state. This is a genuine concern and should be managed as soon as possible.

A talk on any part of exercises in space can continue just in setting to the essential structure of worldwide space law epitomized in the 1967 Space Settlement considered major for exercises in space. Started by U.S., the Unified Kingdom and the previous Soviet Union and confirmed by 119 nations, the OST commands that Part States should bear universal obligation and risk for harm to another State Party or to an outsider and to the earth, throughout properly approved and managed national exercises in space, in air and on the earth which might exclude the setting in circle around the Earth any articles conveying atomic weapons or some other sorts of weapons of mass annihilation.

The Obligation Tradition sets a State-to-State risk and does not consider the relationship between the State and privately owned business for which the state is capable or/and at risk. This perspective must be considered by local law. The 1984 US Business Space Dispatch Act (as altered) and the 1998 Australian Space Exercises Act are germane in such manner. They don't imperil the universal obligation and risk towards the casualty however clear up the circumstance and through the foundation of most extreme likely misfortune disentangle and incredibly bolster

private exercises. [33]

An exchange on state obligation for harm brought about in space must reflect upon the subject of atomic harm created by space objects in space . The U.N. General Get together received the Standards Pertinent to the Utilization of Atomic Force Sources in Space Exercises in 1992 regarding which exercises including the utilization of atomic force sources might be done as per global law, incorporating into specific the Sanction of the Unified Countries and 1967 Space Bargain. The Standards augment risk for atomic harm brought on by space articles to dispatching states.

In setting to quantum of pay for atomic harm, it would not be strange to make a reference to the 1963 Vienna Tradition on Common Obligation for Atomic Harm, the 1997 Correcting Convention and the Tradition on Supplementary Pay for Atomic Harm despite the fact that these instruments don't manage atomic harm brought on in space. The Convention sets the conceivable furthest reaches of the administrator's risk at the very least 300 million Uncommon Drawing Rights (SDR) (generally comparable to 400 million US dollars). The Tradition on Supplementary Pay characterizes extra adds up to be given through commitments by States Parties on the premise of introduced atomic limit and UN rate of appraisal. [34]

In light of the above and in particular setting to steps received

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[33] *Id.*
[34] *Id.*

through household law to constrain the pay payout if there should arise an occurrence of "atomic" harm in space the 1991 Value Anderson Act offers an aggravating point of reference. In 1991, the U.S. National Air transportation and Space Organization (NASA) and the U.S. Bureau of Vitality went into a Space Atomic Force Consent to cover its atomic space flights including plutonium-powered space test mission. In case of atomic harm brought about by US space questions, the 1991 Value Anderson Act limits obligation of the Administration to $8.9 billion for U.S. residential harm and just $100 million for harm to every outside country. Last Ecological Effect Explanation NASA, alluding to the Cassini mission, gives us a thought of the degree of harm that will come about because of an atomic fiasco in space. In that Announcement NASA has surrendered that in case of a unintentional reentry into the world's climate, Cassini would separate. Plutonium would be discharged, and that roughly 5 billion of the evaluated 7 to 8 billion world populace at the time could get 99 percent or a greater amount of the radiation presentation. With a 12% disappointment rate as of now in the utilization by the U.S. (furthermore Russia) of atomic force in space, mishaps - and catastrophe - are inescapable. In this way if U.S. space items are the reason for a worldwide atomic disaster, the 1991 Value Anderson Act will shield the degree of universal risk of U.S. government as far as the quantum of sold harm which influenced nations can assert as remuneration.[35]

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[35] *Id.*

## COMMERCIALIZATION AND PRIVARTE INVESTMENT IN SPACE: BALANCING COMMERCIAL INTEREST AND NATIONAL SECURITY

As noted above, India has neither executed applicable worldwide space arrangements nor enacted particular national space laws. We have depicted the constraints of present state practice to offer impact to arrangement commitments through activity of official force by the President of India in appreciation to the worldwide space law traditions which consider the administration capable and at risk. As far as the 1967 Space Treaty, the administration of India bears the onus of obligation, approval, proceeding with supervision and risk of all space exercises directed by its own particular organizations and by local private elements. It is additionally surely understood that India has a distinct space project to support deliberate and solid improvement of space capacity and the utilization of space science and innovation for recognized national targets has developed throughout the most recent four decades. Nonetheless, no archive issued by the Space Commission, the zenith government body in charge of strategy detailing, is accessible openly area which explains a space arrangement for India. Truth be told, it is interested that the main reference point to comprehension India's vision and destinations for the investigation and utilization of space is found in the Subject's Sanction of the Bureau of Space issued by ISRO an office truly ordered to do inquire about in congruity with the arrangement set around the Space Commission and executed by DOS. Truth be told all

correspondence identified with the space segment is issued by ISRO and not the Bureau of Space. [36]

A conceivable clarification for the nonattendance of a space approach and relating household laws could be that since exercises in space were totally out of private area and led only by government until 2000 it was not felt important to explain a space strategy or create national space laws. Truth be told a plain perusing of the Nationals Contract exhibits obviously that the archive identifies to responsibility of the administration to make advantages of space innovation for in different areas yet does not have any recommendation of the goal to encourage commercialization and private support of private division in that exertion.

The main verbalization on private undertaking in space is in the New Telecom Strategy 1999[37] at passage 3.9 entitled *'SATCOM Approach'* which is restricted proclamation declaring authorization to clients to benefit transponder limit from household and remote satellites for certain administrations in the Ku band recurrence in conference with the Division of Space for application in the information transfers and the TV segments. Rules and techniques were declared by ISRO in 2000 for actualizing the SATCOM Strategy and for setting up private satellite frameworks. The ISRO

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36 *See generally*, United Nations Office for Outer Space Affairs : *Outer Space Scientific and Technical Subcommittee: 42nd Session in Vienna* ; Last accessed: May 7, 2016.

37 New Telecom Policy 1999: can be accessed at www.dot.gov.in, Last Accessed: May 7, 2016.

Rules and Techniques don't have power of law. In the interim despite the fact that space has been "opened" for business private cooperation throughout the previous five years the division keeps on being directed through rules and techniques issued by ISRO every once in a while and through utilization of significant standardizing laws in power .[38]

In the event that commercialization and private investment in space exercises is indeed an objective genuine objective then it will fill a valuable need to perceive that commercialization of space exercises requires a reasonable and unambiguous space arrangement (s) and comparing law (s) as fundamental foundation for its development and speeding up. It is no more adequate to declare rules and strategies which don't have power of law. In particular, from the Indian point of view, it is vital to comprehend not just administrative prerequisites for national space law for India so as to execute its global commitments inside Indian legitimate framework, however make a corpus of household law in admiration to: (i) the lawful issues identified with dispatch administrations (space transportation frameworks); (ii) the lawful issues identified with satellite information transfers, including satellite TV; (iii) break down issues identified with earth perception administrations including information handling and dispersion; (iv) satellite navigational frameworks and (v) examines the licensed innovation rights (IPR) administration and exchange

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[38] *Ibid.*

of innovation. Regularly these segment particular laws (or even a solitary omnibus national space law) will need to recommend national treatment for issues including (i) Authorizing; (ii) Affirmation of space technology;(iii) Security of space activity;(iv) Subsidizing of space activity;(v) Insurance;(vi) Obligation; (vi) Risk for harm; (vii) Assurance of IPR ensuing to space activity;(viii)Dispute resolution;(ix)Protection of environment and biology; (x)Promotion and budgetary backing to improvement of space sciences; and (xi) Worldwide collaboration.

The ISRO Citizen's charter which is obsolete must be traded by a space strategy for India enunciated by the Space Commission of India. The objective and motivation behind India's space movement including responsibility "advantage to all humankind" and its own natives and to (i) Improve the accomplishment of national security; (ii) Advancement of a space economy and advantage to the Indian economy; (iii) Give an opportune and responsive administrative environment for permitting business space action; (iv) Support and encourage Indian common space transportation targets and business space transportation industry; (v) Universal participation; and (vi) Expand the business' worldwide intensity. [39]

## REACHING SETLLED SHORES IN THE LEGISLATION DEBATE: CHALKING OUT THE POLICY ROUTE

In conclusion clearly the quick changes in the worldwide space

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[39] *ISRO Citizen's Charter.*

industry and solid rivalry structure other space powers, especially the Asia-Pacific area, must manage India to take a gander at the noteworthy negative effect that may take after the nonappearance of national space law on the eventual fate of its space economy.

In admiration to the space transportation administration division it is required that the Administration step in building up a fruitful lawful structure for satellite financing considering the best possible administration of credit danger, innovation hazard and political danger. The issues identifying with the control and wellbeing of space resources, security of satellites or transponders, residential approval, effect of satellite limit assentions and question determination systems should likewise be tended to. The laws of agreement, exchange of property, stamp obligation, enlistment, copyright and patent among other pertinent statutes must be returned to bring space related issues inside their ambit. In admiration to remote detecting government must consider permitting the advancement of the area as an industry. This will require all over again considering IRS information items conveyance strategy at present set up both locally and universally.

New open doors in space application industry including information transfers, TV, remote detecting, dispatch administrations, satellite route commercial enterprises on the back of constantly expanding market request must be allowed to change the Indian scene at the earliest opportunity. Another open door made by the effective sub orbital flight by Burt Rattan's Spaceship

One flying machine must show the colossal potential which suborbital transportation frameworks hold for payload, travelers, particularly tourism. The U.S. has as of now passed enactment to bring advantages of the sub orbital space area to its citizen's. The FAA has been assigned the controller and has officially confined rules in the matter. The Space Commission should quickly investigate the path in which avionics and space can be united further bolstering its good fortune.

It must be brought up that at present there is an absence of clarity in the managerial set up on to the exact part of different government offices built up to satisfy characterized assignments in space advancement programs. What are the real parts of the Space Commission, Bureau of Space and ISRO? Does ISRO, indeed, do the elements of these associations notwithstanding its examination command? Would it better fill the need expressed in the Natives Contract if the Space Commission of India were to verbalize a space approach for India? Would it better serve to the improvement of a space economy if the Division of Space were to actualize the space strategy by starting strides to structure suitable lawful administrations? The way things are the main data about Indian Space Program, its points, targets, accomplishments and managerial mandates thereto is accessible just from the ISRO and Antarix sites.

In the last examination, India is an adult space power, in this way, the steady boundary made by the hesitance to be straightforward,

the absence of data out in the open area, the nonattendance of a general strategy and particular division astute arrangements and the absence of activity to build up a fitting legitimate administration to encourage more full private cooperation and general advantage by the legislature is as strange as it is hard to get it. Over assurance makes bends that repress development of the household economy nor if it be the picked reaction to global rivalry. In the event that the administration has accomplished 8.5% tele thickness toward the end of December 2004, 91.5% of the populace stays under served. This is the position following eleven years of continuous change process in information transfers subsequent to 1994. India is a world pioneer in remote detecting imaging yet has caught just around 8% of the worldwide piece of the pie as an aftereffect of its present strategy on universal conveyance of IRD information items which are liable to U.S. law. While fake obstructions victimize our own residents from getting to the same information.

India is making extraordinary steps in creating satellite route ability yet no data is accessible whether rules exist in appreciation to deal in India of handheld GPS gadgets. Private satellite frameworks are allowed to be built up however no lawful administration exists to secure both the administrator and the legislature when risk is activated if there should be an occurrence of harm in a specific dispatch. Standardizing laws in a matter of

seconds pertinent, particularly IPR laws, have not been returned to incorporate the *'space measurement'*. [40]

[40] *See generally*, Principles Relevant to the Use of Nuclear Power Sources in Outer Space Activities adopted by United Nations General Assembly 1992 www.un.org/documents.

# A CONCEPTUAL ANALYSIS OF LIABILITY FOR SPACE ENVIRONMENTAL DAMAGE FROM FEASIBILITY PERSPECTIVE

*Hina Kausar*[*]

*Abstract*

*When man first began exploring our solar system, the outer space he encountered was pristine. Every object floating in space was naturally occurring; every surface on which he or his instruments landed was previously untouched by humankind. But in the following decades the number of manmade objects in space grew exponentially. This paper aims at analysing the current legal regime applicable to the issues of environmental protection of space. It is a principle of customary international law that no State has the right to use or permit the use of its territory, or to use the territory of another State to pollute the global commons. Nations who pollute outer space with orbital debris would therefore be in violation of customary international law. Unfortunately, enforcement of customary international law is almost non-existent. The paper also evaluates the loopholes in the treaties governing space law. All space activities are ultra-hazardous. Along these lines it has*

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*been regarded proper that those occupied with such exercises (and gaining benefits from them) ought to likewise hold up under the danger of any following harm, whereas possible victims on Earth deserve full remuneration.. The intention of the liability regime of all of the U.N. space treaties has indeed been to give a high level of protection to third parties not involved in a space project. Another source of international law applicable to the environmental regulation of space is the U.S. Outer Space Treaty. The provisions of this Treaty require that activities in outer space, be carried out for the benefit and in the interests of all countries. Moreover, it requires the States Parties to the Treaty to pursue studies of outer space and conduct exploration of them so as to avoid their harmful contamination and also adverse changes in the environment of the Earth resulting from the introduction of extra-terrestrial matter. The space debris population and its projected growth in the Earth's vicinity have alarmed the international community of the space debris problem as a potential hazard for outer space activities and as a potential cause of damage on the ground. This dearth of applicable international laws has prompted space enthusiasts to advocate for the extraterritorial application of U.S. domestic laws to outer space. The*

*problem with this approach is that outer space is and always has been viewed as a global commons, and the application of one sovereign jurisdiction's laws to all of outer space does not seems to be more feasible. Space can and should be governed by international law. Framing a legitimate space liability system may not be a simple task, yet an imperative one. Given the potential for massive adverse impacts caused by space activities, this sector would need feasible and functional risk management just as the other areas of human activity entailing risks of similar severity. It is not always easy to establish liability pursuant to international law of outer space, yet damages in the space sector can be considerable. The damaging potential of space activities can exceed the capacity of any single space faring entity to make reparation. Absolute and unlimited liability could render the highly hazardous activities uninsurable. The mere determination of the liable entity can be a problem. Accordingly, portion of misfortunes inside a bigger group of applicable substances to adjust the contending concerns would appear to be helpful. In the end, the authors would like to give suggestions for strengthening the international law and the policy in protecting environment and minimising the damage caused to it due to growing space related activities.*

## INTRODUCTION

The investigation and utilization of the space environment, comprising of space in essence, the moon, and heavenly bodies, may bring about mischief to persons and to property. Global law and metropolitan law have concentrated on standards taking into account the instalment of harms for mischief brought about by space objects and their segment parts, including the "payload." Both types of law have acknowledged the fundamental recommendation that money harms ought to make up for damage. Essential consideration will be given in this examination to the sorts of mischief brought on by space questions that are thought to be compensable under worldwide law at the present time. In evaluating this issue it must be recollected that universal space law has been built on the premise that legitimate employments of space items are those that are serene, i.e., non-forceful, and valuable to humanity. In spite of the fact that entrance to the space environment for the reasons for investigation and use has demonstrated advantageous to humanity's imperative needs and wants, it has been recognized that space objects also carry the possibility of causing great harm[1].

## THE SHUTTLE AS A SPACE OBJECT

At the point when the space transport turns out to be completely operational, the space environment will be utilized substantially

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[1] Carl Q. Christol, "International Liability for Damage Caused by Space Objects", *The American Journal of International Law,* Vol. 74, No. 2 (Apr., 1980), pp. 346-371

more widely than at present on the grounds that the vehicle was intended to give routine access to space. Moreover, during the coming decade there will undoubtedly be a progressive and wide-ranging build-up of increasingly large and specialized space objects and attendant services to meet commercial, scientific, and industrial needs in space[2]. The larger number of space launches will increase the possibility of accidents and the prospect for catastrophic hazards. The bigger number of space dispatches will build the likelihood of mischance's and the prospect for cataclysmic perils. On the off chance that operational space transports encourage the production in space of huge space objects, there will be a more substantial prospect for collisions between such spacecraft.

## THE EVOLUTION OF CURRENT LEGAL REGIME RELATING TO SPACE ENVIRONMENTAL DAMAGE

The requirement for insurance of space environment was felt at the worldwide level. It was seen from the earliest starting point that space action would deliver wounds for which recuperation ought to be permitted. Ideally, to the extent that money can ever adequately compensate for injury, the objective must be to restore a claimant to the condition existing prior to the injury."[3] In taking this position, the United States accepted the principle of international

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2 Disher, "Space Transportation, Satellite Services, and Space Platforms", *ASTRONAUTS & AERONAUTICS* pg No. 4, Apr. 1979, at 42.

3 Reis," Some Reflections on the Liability Convention for Outer Space*",* *International Journal of Economic Law* 6 J. SPACE L. 126 (1978).

law identified in the *Chorzow Factory case*,[4] according to which, reparation for unlawful conduct "must, as far as possible wipe out all the consequences of the illegal act and re-establish the situation which would, in all probability, have existed if that act had not been committed."[5]

Because international law is applicable to such conduct, it is important to identify some international principles concerning space activity that do not derive from formal treaties.

This urge for environmental damage of space has also found expression in the declarations of international conferences, such as in Principle 21 of the 1972 UN Conference on the Human Environment, which asserts that states have "the responsibility to ensure that activities within their jurisdiction and control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction." This principle was confirmed by General Assembly on December 14, 1972, as "laying down the basic rules governing" the international responsibility of states concerning the preservation and protection of the environment[6]. The duty to avoid causing damage to other states and to natural persons, as well as the duty to pay for damage, has also been established in international case law. In the well-known *Corfu Channel case*, the International Court of Justice held that

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4 [1928] PCIJ, Judgment No. 13 (Merits), ser. A, No. 17, at 47.

5 Ibid pg 3

6 General Assembly Resolution 2995 (XXVII) of December 15, 1972, also acknowledges the legal significance of Principle 21.

there is an obligation of every state "not to allow knowingly its territory to be used for acts contrary to the rights of other states[7]." The same principle, coupled with the duty to pay monetary damages for identified harm to property, was promulgated in the earlier *Trail Smelter arbitration*[8]. The foregoing resolutions and judicial holdings must be taken into account both in identifying the duty under international law to compensate for harm and for their influence on the formulation of standards relating to the measure of damages.

## COPUOS

From the outset of the space age it was accepted that priority should be accorded to formulating an international agreement on liability for damage. As the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) turned its attention to this subject and sought to arrive at a set of general principles, it reviewed various proposals that had been put forward as early as 1963.[9] Consensus in COPUOS was quickly reached that liability should extend to both natural and juridical persons and to damage caused by a space object or a component part on the earth, in airspace, and in outer space, including the moon and other celestial bodies. However, during the negotiations several views were advanced as to the nature of the liability to be included in the

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7 [1949] ICJ REP. 4, 22, reprinted in 43 AJIL 558 (1949).

8 Int'l Arb. Awards 1965-66 (1949), reprinted in 35 AJIL 684 (1941).

9 27GA Res. 1963 (XVIII), Dec. 13, 1963; GA Res. 2130 (XX), Dec. 21, 1965; GA Res. 2222 (XXI), Dec. 19, 1966.

agreement. On September 24, 1965, the United States submitted a draft convention that proposed that the launching state be "absolutely liable" for launch activities[10] and that a defence against such liability be "a wilful or reckless act or omission" on the part of the claimant state.

## OUTER SPACE TREATY 1967

With the entry into force of the 1967 U.S Outer Space Treaty,[11] it became evident that use of the space environment was subject to limitations and that space activities could produce liability for damage in the event of misuse. In ratifying the treaty, the United States became bound to the general proposition that a launching state may incur international liability for damage from space objects occurring in the space environment, in airspace, and on the earth's surface. While Article 7 formally established the principle of liability for damage, it did not "specify the conditions under which liability is to be assessed and paid. It looked to physical harm of the kind that would result from collisions with space objects or aircraft, or from impacts on individuals or their property on the earth. It focused on non-electronic and physical injury and did not take into account such possibilities as environmental harm or events producing pollution in outer space.

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[10] UN Doc. A/AC.105/C.2/SR.60, at 4 (1966).

[11] Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies, Jan. 27, 1967, 610 U.N.T.S. 205.

## THE LIABILITY FOR DAMAGES CONVENTION, 1972

Taking after the drafting and passage into power of the 1967 Outer Space Treaty, which left indeterminate the extent of the expression "harm", COPUOS Treaty resumed its deliberations on what was to become the Convention on International Liability Caused by Space Objects. In 1969, the General Assembly particularly identified the need for a liability convention "intended to establish international rules and procedures concerning liability for damages caused by the launching of objects into outer space and to insure, in particular, the prompt and equitable compensation for damages."[12] The Liability for Damages Convention contains an arrangement of tenets that supplements the procurements of the 1967 settlement. Its coverage is broad since it "makes no distinction between civil and military space objects and applies equally to each."[13] It provides for the possibility of collisions and mal-functioning and their consequences, including the identification of certain kinds of harm for which damages might be recovered. Moreover, the convention contains provisions that define space objects and component parts. Unlike the 1967 treaty, this agreement identifies spatial areas in which varying standards of proof of harm are applicable, identifies principles of liability, makes precise the parties who can be held responsible, defines who can be a claimant, establishes claims procedures, fixes the rule of law to be applied to damages, and formalizes the dispute settlement process.

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[12] 40GA Res. 2601B (XXIV), Dec. 16, 1969

[13] [1928] PCIJ, ser. A, No. 17, at 47

By its terms the convention allows claims to be made against a launching state by natural or juridical persons. However, it does not afford protection to the nationals of a launching state, who must make use of municipal remedies. The convention does allow claims to be made by foreign countries directly against the launching state. The term "launching State" is defined in Article 1 as follows:

"(i) A State which launches or procures the launching of a space object;

(ii) A State from whose territory or facility a space object is launched."

A launching includes an attempted launching. The term "space object" is defined to include the "component parts of a space object as well as its launch vehicle and parts thereof." For the purposes of the 1972 Liability Convention, Article I defines "damage" as "loss of life, personal injury or other impairment of health; or loss of or damage to property of States or of persons, natural or juridical, or property of international intergovernmental organizations." Article II applies the foregoing concept of damage to "damage caused" on the surface of the earth or to aircraft in flight. Article III applies the concept to harm caused elsewhere than on the surface of the earth to a space object of one launching state or to persons or property on board such a space object by a space object of another launching state. Article XII of the 1972 convention provides: The compensation which the launching State shall be liable to pay for

damage under this Convention shall be determined in accordance with international law and the principles of justice and equity, in order to provide such reparation in respect of the damage as will restore the person, natural or juridical, State or international organization on whose behalf the claim is presented to the condition which would have existed if the damage had not occurred. Further, as previously noted, the *Chorzow Factory opinion*, which relied on established international practice and in particular on the decisions of arbitral tribunals, had confirmed that the function of international tort law is to restore an injured person to the condition that would have existed had the harm not been experienced[14]. The provisions of Article XII calling for the application of international law, justice, and equity constitute a new approach to international tort law.

## SHORTCOMINGS OF THE PRESENT LEGAL REGIME

Despite of the existing Treaties and Conventions governing various dimensions of environment related aspects in the arena of Space law, still there are some loopholes and ambiguities that needs to be interpreted to make the system more efficient and clear. There are certain terminologies which require clarification for a deeper understanding. Some of them are regarding the application of the law to direct & indirect damages, identification of the entity from whom compensation has to be obtained in case of damage.

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14 [1928] PCIJ, ser. A, No. 17, at 47

## Direct Damages

Direct damages traditionally are those resulting from an act without the intervention of any intermediate controlling cause. One American scholar refers to damages as the sum of money awarded to a person injured by the tort of another[15]. The varied nature of the harm experienced by those who have been injured has allowed for the refinement of the damages concept. Thus, one classification is that of actual or direct damages-with general, foreseeable, or compensatory damages falling within the same category. A standard view in the United States of this kind of damages calls for compensation that would put the injured party into the position occupied by him before the injury. Thus, the American concept of actual damages is essentially identical with the recovery mandated by Article XII of the convention. The convention has been characterized as victim oriented. If taken literally, this description means that the victim is to be assured not only of adequate access to available dispute-resolving processes but also of full restoration of pecuniary losses. It raises the question of the full nature of such losses and the causative forces that have produced harm. Considerations of justice and equity will influence any assessment of the proper measure of the compensation. Article I of the convention straightforwardly enumerates four kinds of recoverable harm, namely, loss of life, personal injury, other impairment of health, and loss of or damage to property. These all fall within the

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15 W. L. PROSER, "LAW OF TORTS" 49-51 (4th ed., 1971).1980]

actual, direct, general, foreseeable, or compensatory classification. Within the context of these concepts, a claimant would be required to show that the harm flowed directly or immediately from, and as the probable or natural result of, the malfunctioning of the space object. Malfunctioning that produces liability can take numerous forms. It may result from launch failure, with harm to persons and objects on the ground or in the air. Although quite unlikely, there is the possibility of collisions between space objects. Loss of function can take place after successful entry into orbit, which may result in fragments or radiation or other forms of contamination-pollution reaching the earth. Harm for which recovery is in fact allowed can be produced by contamination as well as by solid debris in the form of fragments. When the contamination-pollution takes the form of radiation that causes damage to property, as in the Cosmos 954 incident[16], recovery could be based on this source of damage[17]. The space object and its component parts, or payload, would be shown to have been the proximate cause of the harm. If the required causation were present and harm were experienced pursuant to U.S. practices, compensation for the following would be appropriate: lost time and earnings; impaired earning capacity;

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16 Thus far the most famous incident of the type has been the Cosmos 954 case, where a former USSR nuclear-powered satellite disintegrated over remote northern areas of Canada in 1978. The case was settled by an ad hoc protocol between the two countries in 1981. Protocol between the Government of Canada and the Government of the Union of Soviet Socialist Republics 1981. For a more detailed treatment of the Cosmos 954 case, see PHILIPPE SANDS, PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW, 897-898 (2003).

17 Christol, "Protection of Space from Environmental Harms", 4 ANNALS AIR & SPACE L. 433 (1979).

destruction or deprivation of use of property; rendering the property unfit for the use for which it was intended; loss of profits resulting from an interruption in business activities; loss of rents; reasonable medical, hospital, and nursing costs occasioned by harm to the person; physical impairment, including impairment of mental faculties; pain and suffering; humiliation; reasonable costs for the repair of property that has been wrongfully harmed; costs incurred in mitigating existing wrongful harm; and loss of the services of a third party to which the injured party was entitled. The World Health Organization has identified health as "a state of complete physical, mental, and social well-being[18]."Thus, the terms of the Liability Convention, "other impairment of health," can be interpreted as extending beyond the harm associated with loss of life and physical injury. Impairment of mental resources or faculties would support claims for monetary compensation. Undoubtedly the clearest, but not the only, case for recovery of damages is where there is a direct relationship between the cause of the harm and the harmed individual or property.

**Indirect Damage**

The question has been raised whether the convention covers indirect or consequential or remote or unforeseeable consequences. These concepts relate to harm produced by a tortious act that flows naturally but indirectly from the wrongful act. Consequential damage has been identified as "such damage, loss or injury as does

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[18] Preamble, Constitution of the World Health Organization, WORLD HEALTH OR- GANIZATION, 2 OFFICIAL RECORDS 100 (1948).

not flow directly and immediately from the act, but only from some of the consequences or results of such act[19]." Recovery depends on a showing of the medical and hospital expenses occasioned by the injury, the extent of the injury and the physical suffering resulting there from, loss of time from gainful employment, extent of impairment of earning capacity, and, where there is personal injury, "mental suffering, shock, grief, worry and the like."

Both Articles II and III of the Liability Convention specify that damages can only be recovered if the harm is "caused by" the space object of a launching state. The word "caused" should be interpreted as merely directing attention to the need for some causal connection between the accident and the damage, while leaving a broad discretion so that each claim can be determined on its merits and in the light of justice and equity, for it is difficult, if not impossible, to foresee all the circumstances that may result in damage. The terms "caused by" needs to be examined from two perspectives. It might be interpreted as providing that only a direct hit by space debris would allow for the recovery of damages. Or, more reasonably, it would allow for the additional consequences produced as a result of the initial hit. Thus, this expression would allow for the recovery of damages both for a direct hit and for the indirect or consequential aspects of an accident involving a space

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19 Staff of Senate Comm. on Aeronautical and Space Sciences, 92d Cong., 2d Sess., Report on Convention on International Liability for Damage Caused by Space Objects, Analysis and Background Data 44 (Comm. Print 1972)

object. The term "caused by" also can be interpreted in the context of causality, which means that there "must be proximate causation between the damage and the activity from which the damage resulted. Therefore, it may be anticipated that the convention will be interpreted as covering both direct and indirect damage resulting from the malfunctioning of a space object and its component parts.

**Drawbacks of other liability systems**

In addition to utilizing liability regimes of areas similar to the space sector as technical models when designing a new space liability regime it is, however, of utmost importance that also the shortcomings of the other liability systems are thoroughly examined. The different kinds of civil liability treaties outside the space sector have been criticized for not providing compensation in cases of damage to non-economic components of the environment when restoration is not possible (irreparable ecological damage), for instance. Even where damage is in principle compensable, it may not be fully compensated, either due to limits of liability or because the funds available eventually prove insufficient. Another problem seems to be that many liability systems do not address adequately the problems in establishing a causal link between the damage and the harmful activity suspected of having caused it. Causality presents a considerable challenge for any space-related liability regime as well.

The next problematic question would then be to whom such

compensation ought to be directed as outer space is a completely international area. One suggestion has been to make compensatory payments to those states which "have a vital interest in the contaminated orbital regions", i.e., states whose existing space activities or those under preparation are hampered by the space debris. However, the identification of such states and the allocation of compensation is not an easy task.

**Applicability of the Claim Mechanism**

Moreover, these mechanisms are retrospective: they are activated only when a damaging incident has already taken place. Especially in cases of major environmental disasters, this can easily lead to solutions that are 'too little, too late'. Even if pure environmental damage were compensated in principle, the compensation would remain an extremely problematic question for various reasons, some beyond the sphere of international space law, not least the challenges related to calculating the value of such damage in monetary terms. Even if these issues were resolved, there would be additional challenges in designing the liability system, including questions such as the determination of the relevant damage and appropriate time limits for liability given that the occurrence of damage in outer space may involve (very) long time lags[20].

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[20] See Robin R. Churchill, "Facilitating (Transnational) Civil Liability Litigation for Environmental Damage by Means of Treaties: progress, problems, and prospects", 12 Y.B. OF INT'L ENVTL. L. 3, 35- 36 (2003).

## Issues of Space Debris

On balance, it would clearly be far more effective to prevent damage altogether, all the more so as there does not exist sufficient technology for eradicating the space debris[21] already generated, for instance. Obviously, 'restitution in kind' is in most cases practically impossible where degradation of outer space is concerned[22]. In particular in cases of creation of considerable amounts of space debris, the only feasible remedy at the moment is financial compensation.

## Other Related Issues

The application of economic mechanisms for controlling space activities might prove infeasible also due to the fact that these activities do not completely fit into the framework of realities and rationality on which economic mechanisms are typically built. For instance, the presumption behind the polluter-pays principle is that the charges related to polluting activities increase in proportion to the seriousness of pollution. Hence it should be in the interest of the polluters to reduce environmental degradation emanating from their activities. This obviously requires that the charges are set at a level adequate for generating such a preventive effect. In the space sector, this level would typically need to be quite high, considering

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21 On technical aspects of space debris in more detail, see Lotta Viikari, The Environmental Element In Space Law: Assessing The Present And Charting The Future 31-45 (2008).

22 Carl Q. Christol, "Protection of the Space Environment - Debris and Power Sources in The Use Of Airspace And Outer Space For All Mankind In The 21st Century" – Proc. Of The Int'l Conf. On Air Transport & Space Application In A New World 253, 271-272 (1993).

how expensive space activities are in the first place. Given the high risks involved, this could prevent space activities altogether. Economic instruments may even be used for penalizing undesirable behaviour by levying charges which are substantially higher than the costs that the behaviour actually results in. This should further increase the preventive function of such instruments, but for space activities it would easily entail exorbitant costs. On the other hand, despite the extreme expenses involved, economic considerations do not necessarily always play the most prominent role in space mission design and operation; this is most definitely the case where national security interests are at stake.

An additional issue relevant to the scope of recovery under the Convention concerns on whose behalf a State may actually recover under the terms of the treaty. Pursuant to article III, only those people actually on board a (damaged) space object are eligible to recover for the harm suffered. Such a limitation apparently excludes compensation for astronauts (or, in the near future, space tourists) injured while engaging in extra-vehicular activities.

## SUGGESTIONS FOR AN IMPROVED SPACE LIABILITY REGIME

Given the potential for massive adverse impacts caused by space activities, this sector would need feasible and functional risk management just as the other areas of human activity entailing risks of similar severity. This should include clear allocation of the

burden of compensation between private and governmental stakeholders within a system where the victim of harm can easily, and without excessive cost, identify the entity from which to demand reparation in the first instance. Obviously, compensation for the victims of accidents and other negative consequences of space activities cannot be guaranteed simply by making the immediate actor at fault pay; the polluter-pays principle does not work very well in the space sector. The reasons have been explained above in more detail. They include the problems of potentially very high damages, as well as questions of proof and establishing fault (when damages taking place in outer space are concerned). Instead, tiered systems and collective loss-sharing arrangements similar to those adopted in other fields of high-risk activities internationally could prove useful in channelling the risks and ensuring means for adequate compensation.

## Need for International Damage Fund

One tool for achieving a balance between interests of the various stakeholders in the space sector might be an international 'space damage fund' or similar instrument that takes into account the extent of states' space activities as well as their economic situation[23].

The international fund could be financed by contributions based on

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[23] Motoko Uchitomi, "Sustainable Development in Outer Space - applicability of the concept of sustainable development to space debris problems", PROC. OF THE FORTY THIRD COLLOQUIUM ON OUTER SPACE 71, 77-78 (2000)

economic factors as well as the amount of space activities. Such a system seems fair in many ways. It does not burden an individual operator with excessive liability, yet clearly directs liability towards it that is commensurate with its control over and benefits derived from the hazardous activities. At the same time, it secures compensation[24] by resorting to the next tiers if needed. In addition, the level of state liability and the international fund would be constructed in a way that takes cognizance of states' actual role in space activities as well as their economic capacity.

When designing such a system, one needs to keep in mind the developing countries demand that it is the space faring nations who should bear the costs of their activities. At the national level as well, those gaining the economic benefits of space activities ought to bear the primary responsibility. In cases where the liable entity remains unknown, the entire reparation for damage should come from the international fund. This would be very useful where damage caused by debris that cannot be traced back to any launching state is concerned.

**Tier System**

The first tier would consist of strict operator/owner liability with compulsory insurance (or other financial security). It has been argued, however, that the common requirement in civil liability treaties of insurance coverage for the full limit of operator liability

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[24] Nicolas De Sadeleer, Environmental Principles: from political slogans to legal rules 59 (2002)

– even where this is restricted to a certain sum – may not necessarily be an advantageous one. At worst, it could discourage damage prevention as liability is covered by insurance in any case. On the other hand, if the safety record and practices of operators directly affected the terms of insurance, this would encourage (or even require) them to act more cautiously.78 Hence, the introduction of absolute but limited operator liability with obligatory insurance could optimally prove quite useful.

## CONCLUSION

The amount of space activities is rising steeply. It seems to be only a matter of time when this sector also will, in practice, need a feasible regime for the allocation of liabilities. Economic risks for space actors are excessive. In many cases even securing damages for the victims can be difficult, if not impossible. This article has proposed a practical approach drawing on international liability systems of similar areas of high-risk activities. Well-designed tiered systems and collective loss-sharing arrangements could prove useful in channelling the risks and ensuring means for adequate compensation in the space sector. The first tier could consist of absolute but limited operator/ owner liability with compulsory insurance. This could be backed up by supplementary state liability and, ultimately, by an international fund. If the source of damage cannot be identified or fault cannot be established, the entire reparation could come from the fund. This would be the case where damage has been caused by unknown

space debris, for instance. Such a system should include clear allocation of the burden of compensation between different stakeholders within a system where the victim of harm can easily identify the entity from which to demand reparation. At best, it could even support preventive measures, instead of providing mere post-disaster compensation. Although it might not be realistic to expect the space sector to endorse such a progressive approach in the very near future, the experiences from analogous areas of high-risk activities suggest that sooner or later something similar will also be needed for space activities.

# LEGAL ASPECTS OF HUMAN SAFETY AND RESCUE IN SPACE

*Sankul Kabra[*] and Anshul Agnihotri[**]*

*Abstract*

*Space law developed after the launch of Sputnik by the Soviet Union. However, the space law had already been established in pre-Sputnik years. The United Nations became the point of convergence for global collaboration in space and for improvement of worldwide space law and to keep up universal peace and security. The United Nations acted quickly to set up a legitimate structure for space exercises, and prevent conflict in space study and the utilization of space. The space technology has taken big leaps since the last couple of decades, nonetheless the space travel and its related activities still remain risky. Each space mission involves very careful selection and training for every individual involved in the space experiments. Thus the countries need to negotiate economic, political, legal and logistical relationship among themselves, for carrying out space activities and*

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*assisting each other in case of accidents. As the number of countries engrossed in space exploration activities is increasing, it will not be wrong to speculate that the number of space travels and travelers shall increase in the near future. Presence of mankind in the space and on celestial bodies symbolizes the need for a legal framework to govern them. In any case, there are certain advantages, and a few disadvantages in putting the default legal system in place for space missions. The increased number of space voyages gives rise to unfortunate events wherein the nations have to interact with each other to safe guard the interests of both the nations. This article aims at analyzing the existing legal framework associated with the human safety and rescue in space and the problem associated with it. The article also touches upon the rights and obligations of the states in case of unintended landing or distressed landing.*

## INTRODUCTION

There are no constraints or limitations on the commitments of states to safeguard and return space travelers and space objects. Along these lines, regardless of the fact that a spaceflight includes surveillance or other military exercises and came back to earth with data biased to the enthusiasm of another nation, that nation

would be lawfully obligated to give back the space travelers, the vehicle and the data to the launching nation.[1] Space teams have exceptional status not accessible to earth bound-individuals. Amid the arrangement of these standards, there were proposals, especially by the Soviet Union, that the assurances of these bargain procurements may be restricted to serene space exercises, however any such constraints were eventually barred.[2]

The designation of space explorers as 'agents of humanity' energizes a general enthusiasm in non space powers for human space flight while advancing the interests of the space powers.[3] It should be noted that no space teams have ever landed in a foreign country, thus, these provisions of existing space law have never been put in play by the countries.

## LEGAL ASPECTS OF HUMAN SAFETY AND RESCUE IN SPACE

### The 1967 Outer Space Treaty

The 1967 Outer Space Treaty states that space travelers should be viewed as 'agents of humanity' and should be given 'all assistance in the event of accident, distress, or emergency landing on the

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1 American Enterprise, the Law and the Commercial Use of Space, Washington D.C, National Legal Centre for the Public Interest, 1986.

2 Nandasiri Jasentuliyan, International Space Law and United Nations (Martinus Nijhoff Publishers, 1999)

3 *Id.*

territory of another State Party or on the high Seas.'[4] The Treaty states that if a situation of an emergency landing or unintended landing arises, the astronaut shall be immediately sent back to the State of registry of the space flight. This arrangement in the Treaty imposes an obligation that astronauts of one state ought to help space travelers of different states in exercises in space and on other celestial objects including the Moon.[5] The 1967 Outer Space Treaty has been signed by 104 nations, including the majority of the nations with launching abilities.[6]

**The 1968 Rescue Agreement**

The provisions of the 1967 Outer Space Treaty were further explained in 1968 Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space.[7] The Rescue Agreement reiterates the general standards of the Outer Space Treaty, and provides specifications of procedures in rescue operations and emergency landings in foreign territory. There were alterations in the language of the procedure. The Rescue Agreement has been ratified by 80 nations, including

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4 United Nations Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (Outer Space Treaty) (1967).

5 *Id.*

6 United Nations, Office for Outer Space Affairs, Available at http://www.unoosa.org/oosa/en/ ourwork/spacelaw/treaties/status/index.html (Accessed 10 March 2016)

7 Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, Resolution 2345 (XXII), (1967).

the majority of the nations with launching abilities.[8]

Among the adjustments in the language, the Rescue Agreement substitutes the expression 'personnel' for the expression 'astronaut' in the 1967 Outer Space Treaty. Since neither one of the terms is expressly defined, the importance of this change is not clear. Further that the 'accident, distress or emergency landing' covered in the Outer Space Treaty, the Rescue Agreement includes 'unintended landing' which would appear to some degree widen the applicability, in spite of the fact that the practical ramifications are unclear.[9]

Under the Outer Space Treaty, the commitment to return the astronauts to the 'State of registry' while in the Rescue Agreement the commitment is to sent back to 'launching authority'.[10] The ramifications of this change are brought out in the provisions of the Rescue Agreement. It states that the 'launching authority' means not only the country responsible for the spacecraft but also includes a 'international intergovernmental organization' under specific conditions.[11] Such an international organization is entitled to the advantages of the Agreement provided that the organization or majority of its members have consented to both the Rescue

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8 Paul Dembling and David Arons, the Treaty on Rescue and Return of Astronauts and Space Objects, William and Mary Law Review, Vol. 9, p. 631 (1968).

9 United Nations, Office for Outer Space Affairs, Available at http://www.unoosa.org/oosa/en/ourwork/space law/ treaties/introrescueagreement.html (Accessed 9 March 2016)

10 American Enterprise, the Law and the Commercial Use of Space, Washington D.C, National Legal Centre for the Public Interest, 1986.

11 *Id.*

Agreement and the Outer Space Treaty.[12] The only space exploration body currently satisfying the provision of both the Treaties is the European Space Agency.[13] The Rescue Agreement also states the procedure for the recovery and return of space vehicle that may land in a foreign country or on the high seas.

### The 1979 Moon Agreement

The Moon Agreement,[14] states that 'any person on the moon' will be considered as an astronaut under the Outer Space Treaty and as a personnel of a spaceship under the Rescue Agreement. States Parties must offer safe house in their country to any individual in trouble on the Moon or on any other space object.[15] The Agreement was formally enacted in 1984, however it has been ratified only by 8 countries and thus, the purpose of the treaty fails completely.[16]

## LIMITATIONS

The existing space law contains some sound principles, however these provisions have some limitations, as illustrated below:

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12 Bakotic, Some Questions Concerning the Consent of State to be bound by the Treaties on Outer Space, Proc. 22nd Colloquium of the Law of Outer Space, 1979.

13 United Nations, Office for Outer Space Affairs, Available at http://www.unoosa.org/oosa/en/ ourwork/spacelaw/treaties/status/index.html

14 Agreement Governing the Activities of the States on the Moon and other Celestial bodies, Resolution 34/68, 1979.

15 Negotiated in the Committee on the Peaceful Uses of Outer Space and adopted unanimously in the General Assembly in 1979.

16 *Supra* note 2.

## Member States

There are around 200 nations on the planet, but only a few of them are contracting members to the Outer Space Treaty and Rescue Agreement.[17] A significant number of the non contracting members are small in size, however a number of non contracting states are substantial in size. Algeria, Cambodia and Mauritania, for instance, have not signed and ratified either of the Outer Space Treaty and Rescue Agreement.[18] As per the Vienna Convention, a state is not bound by a treaty commitment to which it has not signed.[19] Article 38 of the ICJ Statute provides that the treaty commitments that have taken the shape of the customary international law are binding on the non contracting parties. The Outer Space Treaty is regarded as a part of customary international law.[20]

## Personnel & Passengers

The Outer Space Treaty and the Rescue Agreement cover assistance to 'astronauts' and 'personnel of spacecraft' respectively. It would appear that these terms cover everyone who has been to space till now, however the problems may arise

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[17] Glen H. Reynolds, Outer Space: Problem of law and Policy, Westview Press, 1997.

[18] Bin Cheng, Studies in International Space Law, Clarendon Press, 1997.

[19] Vienna Convention on the Law of Treaties, Done May 23, 1969, 1155 U.N.T.S., Entered into Force Jan. 27, 1980, International Legal Materials, Vol. 8, 1969, p. 679.

[20] Bakotic, Some questions concerning the consent of State to be bound by the Treaties on Outer Space, Proc. 22nd Colloquium of the Law of Outer Space, 1979.

concerning the status of business or non professional space voyagers.[21] If the space travel turns out to be more common and business sooner or later in future, it may be helpful to uproot any discrepancies concerning who is or is not a space explorer or personnel of the space shuttle. Non professional travelers such as *Toyohiro Akiyama,* the Japanese journalist and U.S Senator Jake Garn, have been on a spacecraft.[22] Considering international relations, it is desirable that any person on board a space vehicle would be qualified for help and assistance.

## Unintended Landing

The provision in the Rescue Agreement 'unintended landing', is open to interpretation as to whose intention is at issue. For instance, the space shuttle chose to land in foreign territory against the wishes of their launching authority. Therefore, whether the accepting nation are obligated to provide asylum to the astronauts, or would it be obligated to return the astronauts to their lunching state. Similar situation took place when the Soviet Cosmonaut was about to land at a place other than, pre-decided by the launching authority.[23] Such situations can give rise to instances of political shakiness. United States has reserved Chile's Easter Island for emergency Space landing. [24]

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21 *Supra* note 2.

22 Nandasiri Jasentuliyan, International Space Law and United Nations (Martinus Nijhoff Publishers, 1999)

23 Colin Burgess & Rex Hall, The First Soviet Cosmonaut Team: Their Lives and Legacies (Praxis Publishing, 2009)

24 *Id.*

**Rescue and Assistance in Space**

Outer Space Treaty states that assistance ought to be given in space and on celestial objects was not expounded in the Rescue Agreement, which only covers rescue and return on earth. The Moon Agreement provides for assistance on the Moon and other celestial bodies. Help in space being attractive on a fundamental level, poses several problems.[25] A meeting in space between two space crafts is a difficult process and it is attainable only when the two crafts are in the same orbits. Hence, human safety and rescue in space may be desirable, but there are many fundamental and legal problems associated with it.

**Responsibility and Liability in International Missions**

The Outer Space Treaty provides that states launching objects into space retain ownership and jurisdiction over those objects and bear international responsibility for their objects, including those launched by non governmental organizations of which they are members. Launching states are also intentionally liable for damage caused by their space objects on earth or in space.[26] Concerning international space activities, the Treaty provides only that in the case of space activities carried out by an international organization, both the the organization and its members are bound by the Treaty. The liability provision was further elaborated in the 1972 Liability

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[25] Matthew J. Von Bencke, The Politics of Space: A History of U.S.-Soviet/Russian Competition and Cooperation in Space, Westview Press, 1997.

[26] *Supra* note 17.

Convention, which provides that when two or more state jointly launch a space object, they shall be jointly and severally liable for any damage caused.

Given the high risks involved in space flight and the extensive preparations that must be made for each flight,[27] it is probably most appropriate that internal legal questions be worked out between the states. NASA has been working out several agreements with other member countries.[28]

### Expenses

The existing legal framework for rescue and return has no provisions regarding expenses incurred in providing such assistance. In the absence of any legal provision, compensation for search and rescue expenses by an assisting state would depend on general international law and any enforcement procedures that it could bring. It would seem appropriate that some provisions for the state requiring assistance to bear the costs in considered.

## CONCLUSION

While space technology has developed substantially since the Outer Space Treaty and Rescue Agreement, crewed flights are still risky. There are certain benefits and few disadvantages to developing a default framework for crewed space missions. If and when human space flight become more routine and the problems

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27 *Supra* note 20.

28 Hanneke Louise, Commercial Utilization of Outer Space: Law and Practice, Martinus Nijhoff Publishers, 1999.

associated with them become better understood, there may need to be a more elaborate international legal framework.

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- Footnote: Andrew Gelman and others, *Red State, Blue State, Rich State, Poor State: Why Americans Vote the Way They Do* (Princeton: Princeton University Press , 2008), 128-9.

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**Case Reference:**

***Carew & Co. Ltd. V. Union of India, AIR 1975 SC 2260***

**Article from a journal:**

- Footnote: Tom Buchanan, "Between Marx and Coca-Cola: Youth Cultures in Changing European Societies, 1960-1980," *Journal of Contemporary History*, vol. 44, no. 2 (2009): 372.

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- First Note: Jon Meacham, "The Stakes? Well, Armageddon, For One," *Newsweek,* October 12, 2009, 5.

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- First Note: Tyler Kepner, "A Battering of Santana Saves the Yankees ' Weekend," *New York Times,* June 15, 2009, Section D, Final edition.

**Websites (not online journals):**

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