

## THE UTILITY OF AIR SPACE AND OUTER SPACE LAW TO STATES AND PRIVATE ENTITIES

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### ABSTRACT

*This paper examines how air law and space law can provide useful guidelines on the efficient and lawful use of Air and Outer Space by States and private entities. Air law is examined first as it provides clarification on the nexus between territorial sovereignty of States and the use or exploitation of their own airspace, aircraft nationality, and international dispute resolution of conflicts arising from international aviation, registration and ownership of aircraft. The paper also deals with conventional and emerging concepts which include Exclusive Sovereignty (EZ), No Fly Zones, hot pursuits, creation of International Aviation Organisation (ICAO) and other ancillary aspects. It motivates the argument that there is a contestation regarding the sanctity of air and law when regard is had to issues such as Air Defence Identification Zones (ADIZ) and regulation of emerging technologies such as drones and other Unmanned Aerial Vehicles (UAVs). Space law is explained from the perspective of aspects such as the freedom of use and exploration of outer space, the declaration of space as a non-territorial zone of any State, liabilities for damages, registration, jurisdiction and ownership of space objects, prohibition of national appropriation of outer space, avoidance of contamination of outer environment, licensing of satellites, and regulation of space tourism. Essentially, the paper moves the argument that both air and space law contain peremptory norms which have also morphed greatly into obligations erga omnes. Illustratively, examples from international environmental law, international water law and humanitarian intervention are used.*

**Key words:** Air law, outer space law, erga omnes.

### Introduction

Analysing the contributions of two branches of international law raises pertinent questions about the nexus between such branches. Predictably, discussion may start with the clearly defined branch, and with a nation's assertion of sovereignty over the territorial aspects covered under say air law. However, such an approach must not be considered as cast in

stone. This paper simply treats the two branches separately to illustrate the manner in which they can be used to regulate the use and exploitation of air and space. Each branch of law is considered important and thus remains so even when aspects that interlink are raised. Admittedly though, there is nothing amiss in abandoning the de-dichotomising the air-space law status into an interrelated disciplinary unit, ultimately achieving coherent goals, and embedding a legally ordered regime of law relating to air/airspace<sup>and</sup> outer space (<sup>'and'</sup> is intentionally italicised to motivate the argument that it is the right conjunction which tractably removes the air-space dichotomy).

### **Terminological Aspects**

Garner (2004: 85) defines air law under international law is loosely described to mean 'law relating to civil aviation'. This paper distinguishes between national airspace law and outer space law and predictably uses air/ airspace law interchangeably. Garner (ibid) describes airspace as 'the space that extends upward from the surface of the land, especially so far as is necessary for the owner or possessor to have reasonable use and enjoyment of the incidents of its ownership or possession.' Airspace is contrasted with outer space which is defined by Garner (ibid: 1277) as the 'known and unknown areas of the universe beyond the earth's airspace'. Under the auspices of the United Nations (UN), Garner (ibid) states that the 'space surrounding the planet (including earth) is not subject to appropriation by any national sovereignty.'

To employ the view of Law and Martin (2009: 28), air-space is understood from the argument 'the ownership of land includes ownership of the airspace above it, by application of the maxim *a coelousque ad centrum* (from the heavens to the centre of the earth)'. A convenient distinction between airspace and outer space is made in this paper again by employing the view from Law and Martin (ibid) that 'outer space is not considered to be subject to ownership'. It may be worth to reproduce the observation by Law and Martin (ibid) that national airspace under international law including airspace above the internal waters and the territorial sea,

'is under complete and exclusive sovereignty of the sub-adjacent State. As a result, apart from aircraft in distress, any use of national airspace by non-national aircraft requires the official consent of the State concerned. This can be granted unilaterally of

more commonly (in respect of commercial flights) through a bilateral treaty, usually on conditions of reciprocity.’

From the above, state sovereignty, legally construed and state-centrally understood, seems to point to the existence of state rights and corresponding duties from states and other private players in airspace law. In other words, although rights come with attached responsibilities, a presumption exists that States enjoying the right under mutual consent, bilateral or other legal arrangement must at all material times respect the right of the State to determine what should become of the airspace over its territory. Quintessentially, right to control the national airspace, on which the hallmark of state sovereignty is evident, has to be understood from the need by States to protect their national land and airspace structures consensually with or without international treaties.

The principle of territoriality is also crucial in understanding the usage of Airspace and Outer space law. The principle provides that ‘states should not exercise their jurisdiction outside the area of their territory (Law and Martin *ibid*: 545).’ States can easily assert their rights over their national airspace but usually find it herculean to do so with outer space. Because a state’s ships and aeroplanes are included under the definition of State’s territory for the purposes of jurisdiction, a state may ‘exercise jurisdiction over crimes that are either originated within its territory but completed outside or originated outside its territory and completed inside (*ibid*).’ National airspace is also defined by Garner (2004: 85) as ‘the pillar of air above a country’s territory-including the internal waters and the territorial sea-over which it has complete and exclusive sovereignty and through which foreign aircraft have no right of innocent passage.’ Internal waters describe ‘any natural or artificial body or stream of water within the territorial limits of a country, such as a bay, gulf, river mouth, creek, harbour, port, lake, or canal (*ibid*: 939).’ Internal waters are also termed inland waters or ‘waters on the landward side of the baseline of the territorial sea’ under Article 5 of the Geneva Convention on the Territorial Sea and Contiguous Zone, April 29 1958.

Territorial waters are defined by Garner (*ibid*: 1825) to include ‘the waters under a state’s or country’s jurisdiction; specifically the waters over which a country has jurisdiction, including both inland waters and ocean waters within 12 nautical miles of the coastline.’ The term territorial waters may be broadly used to describe ‘inland fresh waters’ while territorial sea may be used ‘to cover only ocean waters (or marine belt; maritime belt; maritime boundary).’

The territorial sea is to be distinguished from the high seas which describe ‘ocean waters beyond the jurisdiction of the country and begin 3 miles from the coastline (ibid: 1550).’ This description is covered under the cannon-shot rule which by which ‘a state has territorial sovereignty of that coastal sea within three miles of the land (Law and Martin 2009: 75). The cannon-shot rule derives its name 17<sup>th</sup> century description of the outer range of coastal artillery weapons. Law and Martin (ibid) state that the rule simply reflects the principle ‘*terrae dominum finitur, ubi finitur armorum vis* (the dominion of the land ends where the range of weapons ends).’ The UN Convention on the Law of the Sea (1982) provides according to Garner (2004) that the high seas ‘begin 200 nautical miles from the coastline, outside any country’s exclusive economic zone.’ This perhaps explains why the high seas are also termed open, free and main seas.

A caveat is however placed in this paper that the UN Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies, 18 U.S.T. and is short-formed as Outer Space Treaty, ‘does not expressly define outer space (Garner 2009: 1277).’ Garner (ibid) notes that the treaty simply ‘stipulates that, because space exploration is in the interest of all humanity, no country may claim territory, establish military bases, or station weapons on any other planet or a moon.’ It is also important to state at the very outset that international law and the United Nations Charter apply in space (ibid). Fundamentally, Law and Martin (2009: 545-46) that ‘coastal states exercise sovereignty over their territorial waters and this include the right to exclude fighting in the territorial waters during a war in which the coastal state is neutral.’

### **Theoretical framework**

The study of airspace and outer space law arouses interest in theory making and the increase includes that: firstly, State and private entities have fallen in love with space research and exploration. Secondly, governments are interested in preserving their national and collective interests and can interpret interference with their national airspace as actual or pre-emptive threats to their sovereignty. Thirdly, increasing threats from nuclear tests by nuclear capable states; drone warfare or victimisation, air and space pollution and so forth compel intergovernmental organizations and environmental, water and other eco-friendly organizations to debate and proffer solutions on what States and private entities do and ought not do. With the consequences of pollution, climate change, nuclear proliferation, ozone layer

depletion there for all to see, airspace and outer space law are crucial if the international community is to arrest threats such as nuclear wars, storage of dangerous weapons in space, and threats to environmental degradation.

The need for a theoretical approach is based on the hypothesis that there are airspace and outer space problems without which there is no airspace or outer space regulation. How do such problems get to the agenda of both State and private entities and what solutions are to be designed? The answer is largely a political process which involves power configurations between or among States, intergovernmental organizations and private entities and as such involves different values, actors or stakeholders. The theoretical arguments in this paper are bolstered by the functionalist and spatialist theory on the delimitation of airspace and outer space. The theory is preferred because there is no universally agreed precise legal, technical or political definition of either the boundaries separating air space from outer space or of the term 'outer space' itself. The issue has been contested by the United Nations Committee on the Peaceful Uses of Outer Space (UNOCOPUOS).

The Functionalist and spatialist theoretical lens helps actors and stakeholders to appreciate the existing forms of delimitation observed by States and non-State actors in the international system. Succinctly, the functionalist approach believes that "space law cannot be associated with a limited space, but only with the character of the activity under regulation' (Nase 2012). Using the functionalist approach, it is observed that, international flight would not be subject to the Liability Convention as its function is to fly within the area of air space, whereas a space tourism flight may be subject to the Liability Convention because its purpose is to enter outer space. In contrast, the spatialist approach to delimitation defines the boundaries of outer space with reference to a specific and definitive distance from the Earth's surface (Jakhu and Dempsey 2016). There have been several scientific based approaches to the spatialist method of delimitation put forward including the aeronautical ceiling theory, the Karman line, the lowest perigee of an orbiting satellite, demarcation based on the Earth's gravitational effects, and demarcation based on the division of space into layers. This distance is said to be around 160kms however with technology advancing and the creation of new low orbiting satellites, some estimations have been as low as 70kms (Jakhu and Dempsey 2016). Employing the two theories the paper sets out to interrogate the vitality of

air and space law by taking into cognisance the delimitation debate of air space and outer space.

**Discussion on the importance of air and space law: With specific examples from international environmental law, international water law, and humanitarian intervention**

Essentially, air law is important as it helps clarify and justify the national territorial sovereignty of a State above its own airspace. Article 1 of the Chicago Convention states that, 'every State has complete and exclusive sovereignty over the airspace above its territory' (Shaw 2008). This has been adopted and obeyed by states as a form of Customary International Law. Air law gives the room to individual States to unilateral and absolute right to permit or deny entry into the area recognized as its own territory and has the right to control all movements within such territory. Territory is conceptualised under Article 2 of the Chicago Convention as 'the land areas and territorial waters adjacent thereto under the sovereignty, suzerainty, protection or mandate of each States.' In appreciating Grotian perspective, Goedhuis(1955) underscores that, Hugo Grotius (1583-1645) points out, on the issue of rights in the air space, that the land area and the air space above it constitute an unbreakable unit. The air space is of such magnitude that it is enough for every person's needs but also that those needs may be regulated by the state. It therefore becomes imperative to note that no flight can cross above the airspace of another without authorisation and permission of the underlying States, thus it reserves right to shoot or deny entry.

The international civil aviation conflict in the Gulf region resulting in the blockade of Qatar aviation aircraft over the territories of Saudi Arabia, Egypt, United Arab Emirates and Bahrain is justified as these countries have sovereign right to allow or deny any flight above their own airspace (Murdock 2018). Zimbabwe sought authorization to fly its military aircraft over Zambia en route to assist Gaddafi in the Libyan civil war. This is so because Article 3 of the Chicago Convention articulates that 'no State aircraft of a contracting State shall fly over the territory of another State or land thereon without authorisation by special agreement or otherwise, and in accordance with the terms thereof'. On 30 April 1983 a much more grave action took place over the Sea of Japan, where flight KE007, a Boeing 747 with 269 people on Board including flight and cabin on route from Anchorage in Alaska to Seoul in Korea

was shot down by Soviet near Sakhalin Islands which was a restricted Soviet airspace (Engvers 2001). In this regard, international air law has provided as a matter of customary international law to respect the territorial airspace of every States.

Air law provides jurisdiction to International Court of Justice's jurisprudence in the settlements of disputes. Aust (2005) posits that, the International Court of Justice (ICJ) has jurisdiction on the airspace disputes as provided for in Article 36 of the Statute of the ICJ and ICJ has jurisdiction over the interpretation of aviation conventions such as the Hague Convention of 1970s well as giving Advisory Opinions to and from the International Civil Aviation Organisation (ICAO) Council. This is given credence by Art. 84 of the Chicago Convention of 1944 which states that, 'If any disagreement between two or more contracting States relating to the interpretation or application of this Convention and its Annexes cannot be settled by negotiation, it shall, on the application of any State concerned in the disagreement, be decided by the Council'. As such, States can submit their dispute to the ICJ in order to find a lasting solution to the dispute arising over territorial airspace conflict.

In view of the above, UAE, Saudi Arabia, Egypt and Bahrain jointly filed appeals with the International Court of Justice against the International Civil Aviation Organisation decisions of rejecting to arbitrate the case citing lack of jurisdiction (Murdock 2018). It is important to note that, the ICAO Council may act as an arbitrator between the contracting States of the Chicago Convention on matters regarding flight and execution of the Chicago Convention and Special arbitral gave by the treaty or agreed by the parties to the disputes (Jakhu 2005). 'One of the Council's prominent disputes settled under article 84 of Chicago Convention include, dispute between US and Cuba over flights by Cuban planes over US territory was amicably settled by the Council of ICAO'.

In contrast, the paper observes that submitting cases to the ICJ shows that ICAO is limited in scope of its jurisdiction on cases brought to it for arbitration especially when issues of political interests are cited. This is concurred by ICAO's response to Qatar's plea that, "its role in the regional conflict is limited to ensuring the safety and security of air navigation and will not touch upon political issues for lack of jurisdiction". The ICAO cited Chicago Convention on the First freedom of Flights which states that 'the sovereign nation reserves the right to grant and implicitly to deny and withdrew over flight privileges (Murdock 2018).

One may put forward the view that, the Gulf conflict borders on issues of regional politics and competition as these above said States to some extent are afraid of the sharp rise of Qatar as a regional hegemon thus, they seek to frustrate its rise to power. The alleged terrorist support given by Qatar is used as a scape goat to justify their regional interests in bunting together against Qatar. Nevertheless, the point of departure is that, the settlement of disputes by ICAO as well as the provision of the jurisdiction of ICJ renders as one of the importance of air law which in turn contribute to the maintenance of International peace and security.

There is nexus between the maintenance of peace and security and the suspension of territorial sovereignty of State above its territory. In essence, air law provides for the renunciation of sovereignty in order to maintain international peace and security as well as when issues of the Responsibility to Protect (R2P) are invoked for the protection of civilians. The renunciation of sovereignty comes into effect during humanitarian interventions where the interveners institute no fly Zones or alternatively known as the air exclusive zones. Schmitt (2011) highlights that, humanitarian intervention would not offend the territorial integrity or political independence of the target State, because the intervening State withdraws immediately upon the aversion of the humanitarian catastrophe that provoked the intervention, and does not in any way undermine or attack the government of the target State. Under Treaty law and Customary International Law, a State has exclusive sovereignty over its own air space; conversely this complete and exclusive sovereignty must be abandoned when issues of humanitarian intervention are invoked either voluntarily or under duress (Signh et al. 2012). A no-fly zone (NFZ), or air exclusion zone, is a territory or an area over which aircraft are not permitted to fly. Such zones are usually set up in a military context, somewhat like a demilitarized zone in the sky, and usually prohibit military aircraft of a belligerent power from operating in the region.

The UN Security Council has instituted a number of No-Fly in order to maintain international peace and security. For instance on 17 March 2011, the United Nations Security Council adopted Resolution 1973, which imposed “a ban on all flights in the airspace of the Libyan Arab Jamahiriya in order to help protect civilians” (Milne 2011). Also, during the Bosnia-Herzegovina 1992 conflict the UN Security Council adopted Resolution 781 which established a ban on military flights in the airspace of Bosnia. This was however, contested by Bosnia arguing that the no fly zone was an impingement on its airspace sovereignty



(McLimail 2004). It is important to observe that, no fly zones constitute a de facto occupation of a State's sovereign air space. According to Article 2 of the UN Charter, United Nations' Air Exclusion Zones prohibit the entry of unauthorized aircraft into airspace over specified territory. Commenting on this, Schmitt reiterates that, 'no-fly zones have helped the United Nations deliver critical humanitarian assistance to besieged populations<sup>1</sup>. The institutionalisation of No Fly Zones enables states to conduct airborne reconnaissance and intelligence gathering related to the purpose of excluding prohibited aircraft' (Schmitt 2011). No fly Zones are often declared with the element of use of force which is permissible as long it is necessary in promote and maintain international peace in accordance with article 2(4) of the UN Charter. As a matter of fact, international air law treaties do not have the provisions for the use of force rather; the UN by virtue of it assuming the status of the de facto world government has power to decide when to suspend air space sovereignty of a State. It is against this backdrop that one argues that, the fact that air law allows for the suspension of State sovereignty above its territory makes the air law important.

Air Defence Identification Zones (ADIZ) presents a bedevilling principle in air law. Air Defence Identification Zones (ADIZs) are designated areas of non-territorial airspace where States impose reporting obligations on civil and military aircraft and these take the form of unilateral declarations because of the lack of framework to regulate ADIZ (Lamont 2014). In contrast, the issue of ADIZ brings out the tensions over the extent to which a State can impose reporting obligations on foreign aircraft outside of territorial airspace which reflect a contested interpretation of international maritime law particularly the 1982 UN Convention on the Law of the Seas (UNCLOS) which permits States to claim exclusive economic zones that extend far beyond a State's territorial waters and the IDIZ principles violate core principles of public international air law, the freedom of navigation of in international airspace (Keck 2013). Existing bodies of international such as the Chicago Convention 1944, the 1958 convention on Territorial Sea and Contiguous Zones and the UNCLOS of 1982 and the 1958 Convention on the High Seas, all prohibit States from making unilateral attempts to restricting airtraffic in airspace above their territorial seas.

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<sup>1</sup>Schmitt, N. M. 2011. Wings over Libya: The No fly Zone in legal perspective. The Yale Journal of International law Online. 36 (9), 45-58

In spite of this, China's 23<sup>rd</sup> of November 2013 declaration of ADIZ over the South and East China Sea is highly contested by other States such as Japan, South Korea, US. This attempt is viewed as an attempt by China to Strengthen Beijing's positions in relation to the territorial claims over two disputed territories, the Senkaku/Diaoyu Islands which are claimed by Japan, China, Taiwan and the Leodo/ Suyan reef which is claimed by South Korea and China (Smith 2012). One stands to reason that, the ADIZs are nothing but security mechanisms declared by States in pursuit of their national interests. In such instances States are willing to suspend conventional international law in order to pursue their own national interests. As a result, the issue of additional zones in airspaces challenges the importance of air law especially when States use it to pursue their self-interest.

International air law also accepts the issue of aerial hot pursuit regardless of the fact that this has not been codified in international air law. This concept is developing as a matter of Customary International Law. Poulantzas(2002) gleans that, aerial hot pursuit is "the right of any sovereign State to continue the pursuit of a foreign aircraft (which started within the airspace above its territory, territorial waters or contiguous zone in reaction to infringement of the laws or regulations of this State) over the high seas, provided, however, that the pursuit started immediately after the violation, and continued uninterrupted beyond the territorial or contiguous airspace of the coastal State". It is argued that, the pursuit of a foreign aircraft within the airspace of a State is justified if the aircraft committed a violation of national laws and have refused to obey the orders to land; it is therefore a clear right of the authorities of the subjacent State (ibid.). This law borrows largely from international maritime law where there is a provision of legitimate chase of a foreign vessel on the high seas following the violation of State jurisdiction and this pursuit must start when the violator is within internal waters, territorial sea, and the contagious zones and must end as soon as it enters the territory of its own. As a matter of evidence, 'April 1978 a Korean Airlines (KAL) Boeing 707 flying from Paris to Seoul was forced down by Soviet Interceptors after entering Soviet Airspace, one of the interceptors fired at the airliner killing two and wounding eleven passengers (Engvers 2001). One can see the link of aerial hot pursuit with international water law as an emerging Customary International law thus making the law vital.

In addition air law is important because it gives justification on when a State may use and not use force against a civilian aircraft. In essence, Article 3 of the Chicago Convention

recognises the right of a State to require a civil aircraft to land if it is overflying its territory without permission. In the same vein, it recognises that weapons must not be used against civil aircraft in flight. In contrast, Article 51 of the UN Charter States that ‘the State is entitled to shoot down a civilian aircraft if that is the only way to avoid an anticipated greater loss of life. In interrogating the above, Aust (2005: 352) argues that, “if at the time the United States of America government knew or had good grounds for believing that it knew the real intentions of the hijackers of the four US civilians on 11 September 2001, it could have authorised their shooting down in less populated areas”.

Moreover, on 21 April 2001 Peru shot down a light aircraft killing two as part of their campaign on anti-drug smuggling although it was found to be carrying missionary Christians. While in 2004 Brazil announced that domestic law had come into effect to enable it shoot down suspected drug trafficking aircraft (ibid.). One stands to reason that, a State that uses force against a civilian aircraft must have strong evidence prior to using force so as not to endanger the lives of civilians unnecessarily. Further to that, there is a limited right to use force against aircraft intruding on the territory of another. The argument was that the airliner entered a Soviet high security zone thus; they cited alleged aggravating circumstances to explain their actions as the airliner pilot refused to regard the repeated resulting in the shootings. In this regard, air law is important because it has the preserve to regulate the use of force against intruding aircraft but these aircraft must have solid evidence prior using force against a non-compliant aircraft.

Air law also provides for regulations of criminal behaviour in International aviation. Aust (2010) opines that, the safety of civil aviation has been jeopardized by terrorism as well as by number of other unlawful acts conferred by persons with differing inspiration. In this regard, the international community attempted to give security in international aviation, thus a plethora of multilateral conventions, resolutions and declarations were adopted with a purpose to dispose safe sky of unlawful performers against civil aviation, secure the safety of passengers and crew (Yool 2005). The Tokyo Convention of 1963 focuses on offenses against penal law, acts which, regardless whether they are offenses, might or do endanger the safety of the plane or persons or property in that or which imperil good order and discipline on board, (Tokyo Convention of 1963). Further to that, the Hague Convention of 1970 proclaimed that hijacking should be considered as an international offense and demanded

States to extradite or exert jurisdiction over the hijacker and prosecute him if the airplane is hijacked and impose on him seven penalties (Jakhu 2005). While the Beijing Convention of 2010 criminalises the acts of using civil aircraft for the purposes of causing death, severe body injury or damages, to use the airplane to discharge any biological, chemical or nuclear weapons or similar substances to cause death, serious body harm or serious damage on board (Aust 2010). It suffices to say that, the criminalisation of acts of terrorism, hijacking or any other acts which affect the safety and security of passengers and the aircraft renders air law important. .

Unlike the air law, the vitality of the space law can be gleaned in a plethora of its principles. To begin with, space law codified that all space activities shall be conducted for the benefit and in the interests of all countries. In essence, Article 1 (1) of the Outer Space Treaty of 1967 states that, “the exploration and use of outer space, including the moon and other celestial bodies, shall be carried out for the benefit and in interests all countries, irrespective of their degree of economic or scientific development” (Shaw 2008:881). One may suggest that bearing in mind of how unequal an international system can be when the developed countries use their level of development, scientific progress and economic growth to exploit and keep the developing countries in the periphery as articulated in the world systems analysis by Wallerstein (1976.)

The promulgation of outer space law nullified the ‘evil’ intentions of developed States to have monopoly over the control of the outer space by virtue of having technological know-how and possessing scientific means at their disposal to exploit outer space. The principle of equality in outer space have enabled a plethora of African countries such as South Africa, Egypt, Algeria, Nigeria, Ethiopia and Kenya have pursued space projects for development processes. Knyzaite(2018) postulates that, South Africa is the largest with space program funded by both government and private entities; it is the first African country to send an astronaut Mark Shuttleworth, who flew the Soyuz Fight TM-34 to the International Space Station (ISS) in 2002 and is set to host the world’s largest radio telescope, the Square Kilometre Array (SKA)

There is a symbiotic relationship between space related initiatives and socio-economic development this is in light of the belief that space projects provides various socio-economic, political and environmental challenges affecting the African continent. This can be

gleaned from Nigeria which uses its satellites for agriculture and environmental issues, observing the Delta regions, disaster control, monitoring floods as well as locating insurgency groups especially the Boko Haram (ibid.). The Outer Space Treaty sought to address the issue of inequality by ensuring that every nation has an equal chance in the exploration of outer space without prejudice because no State has claims over the outer space by invoking the principle of 'common interest. In this regard the outer space treaty as the principal treaty lays the fundamental legal principle of freedom of exploration and use of space by all states exercised without discrimination of any kind on the basis of equality (Article 1(2) of Outer Space Treaty). The major point to take was the denial of any and all claims to national sovereignty to outer space and celestial bodies.

Over and above, no country has power to restrict another State in the exploration and use of space. By declaring outer space as non-territorial Zone; it gave power to limit intentions of establishing monopoly by the first timers in the use of space. Thus States are called upon to respect the rights of other States and that they must recognise legitimate special interests, this principle was adopted in the Anglo-Norwegian Fisheries case in which the ICJ have special effect to certain economic interests peculiar to a region (Jakhu 2005). Also to take note, is the use of space as the common province and heritage of mankind. The fact that outer space was declared as a sphere of operation beyond the territorial jurisdiction of any State, space faring nations must pursue space activities in the manner in which it benefits mankind regardless of nationality. Something to observe is the fact that, these principles have surpassed the legal norms of conventional international law as they have become a part of International Customary Law by assuming the status of *jus cogens* binding all States (Singh et al. 2012). Intrinsically the international public interest of States in outer space imposes an international obligations *erga omnes* applicable and enforceable by all States. In this respect, it is against this backdrop that space law is important judging from these principles.

Another dimension to consider is the fact that, space law provides for the prohibition of national appropriation. In brief, States are prohibited against appropriation of outer space as way means of serving national interests. Article 2 of the Outer Space Treaty concurs that, 'Outer Space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other

means”. In view of this, space law imposes international responsibility on States for national activities in space regardless of whether such activities are carried out by government agencies or non-government entities (Jakhu 2006). One notes that, there are a plethora of reasons that may motivate States to appropriate outer space; this is mainly informed by the fact that space contains valuable resources which provides compelling reasons for States, private entities, entrepreneurs to pursue space exploration and settlements (Simberg 2012). Also asteroids are known to be rich in valuable minerals which are rare on Earth and these include palladium, iridium, platinum, yttrium, neodymium and scandium. There is an inference by scientist that a small asteroid 200 metres in length and rich in platinum could be worthy US\$ 30 billion (ibid.). One stands to reasons that without space law on the prohibition of national appropriation of outer space, the outer space will be characterised as a state of nature where the war of all against all governs. One bears in mind that international politics is characterised by competition and the pursuit of national interests because the international systems according to Waltz (1979)’s structural realist perspective is such that it is anarchic and self-help.

There is a notable space competitions and space race amongst global powers. Following the space race during the cold war between Soviet Union when Soviet Union launched Sputnik 1 (satellite) in 1957 to counter USA space ambitions for power politics, there are continued intentions by countries to pursue space an ambition which is believed to alter the future governs of space. For instance Goswami (2016: 74) posits that, “major powers like China are viewing space less concerned with securing the high ground for espionage and nuclear deterrence and more access to vast material and energy resources of the inner solar system”. As a matter of fact, China expressed in 2015 the intention to build a space station by 2050, 36000 kilometres above the earth surface in the geosynchronous orbit and equipped with huge solar panels and solar electricity that will be generated will be sent via microwaves or lasers to Earth (ibid.). This demonstrates the view that the international system is self-help hence States pursue activities which leads to the protection of their citizens and survival in the anarchic.

Wang Xiji one of the Chief designers of the Chinese first rocket is of the view that the world will panic when the fossil fuels on Earth can no longer sustain human development, thus the

country which acquires space solar technology first could occupy the world's future energy market (Zhan and McClung 2010). Moreover, realising the lucrative mineral resources in space, the US Congress passed the 2015 US Commercial Space Launch Competitive Act that aims to encourage and propel private sector investments and entrepreneurship in space (US Commercial Space launch Act 2015). Thus one can see a conflict in balancing between national interests and international space law. Nonetheless, space law is important because of its regulation against appropriation of Space.

Moreover, international space law's importance is gleaned from its regulation against the weaponisation and militarisation of space and celestial bodies including the moon. It is believed that the militarisation and weaponisation of outer space would mar the peaceful uses and benefits of space for all peoples. States Parties to the Outer Space Treaty decided to prohibit the placement in orbit around Earth any objects carrying weapons or any other kinds of weapons of mass destruction, secondly, the militarisation of celestial bodies as a means of promoting peace in the exclusive exploration of Outer Space (Goswami 2018). The development of the law regarding non weaponisation of space borrows from the 1959 Antarctic Treaty which laid the precedence against the militarisation of the Antarctic and ensures that States pursue peaceful activities for the benefit of mankind (Aust 2010). There is an inherent inclination by States to militarise space as a means of maximising their power in multipolar power system.

The rise of China presents itself as a major threat to the United States as a global power status and the dominance of US Air Force in aerospace (Zhang and McClung 2010). The Chinese Department of Defence report of 2000 claimed that the shortage of air and command, control, military communications, computers, and intelligence technologies would continue to place the of China's air forces behind that of advanced Western nations. Thus China sought to improve its defence power by exploring possibilities of manning military space objects which will result in the improved military communications command control inter alia. In 1987 the G7 countries (Canada, US, West Germany, France, UK, and Japan) agreed on Missile Technology Control Regime (MTCR) which set guidelines regarding the control of the proliferation of missile technology. The MTCR restricts the export of delivery systems and related technologies, capable of carrying a 500 kilogram payload at least 300

kilometres as well as systems intended for the delivery of weapons of mass destruction which space launch vehicles and sounding rockets (Engvers 2001). The code of conduct to respect the rules against weaponisation of space is difficult to uphold in the age of unipolar power competition. Nevertheless, the space law attempts to prevent space militarisation which might result in increased nuclearisation of the world and a birth of stars war fought in the space.

International space law further creates an obligation for States to cooperate in the use of outer space and celestial bodies including the moon. One observes that, States are encouraged to work with each other in their outer space operation activities. These co-operations come in the form of conducting scientific activities, carry out space activities in the interests of maintaining international peace and security, inform the UN Secretary General as well as the public of the nature, locations and results of their space activities (Singh et al. 2012). Furthermore, States are to cooperate in treating astronauts as envoy of mankind in outer space. The 1968 Rescue Agreement obliges States especially non-space faring nations to provide all possible assistance to astronauts in the event of accidents, distress or emergence landing and safety return. This invokes a global State responsibility in the protection of astronauts. Hitchens (2007) posits that, to promote States cooperation, the Inter-Agency Space Debris Coordination Committee (LADC) comprising the space agencies of China, France, Germany, India, Italy, Japan, Russia, Ukraine, and the United States, plus the European Space Agency was established in 1993 as a mechanism for space agencies to exchange information.

The ideal of cooperation in the use and exploration of the outer space has been embraced in the African continent. This is buttressed by the Signing of Memorandum of Understanding of cooperation in the fields of space technology on the 22 of June 2018 between the Algerian Space Agency and South Africa National Space Agency on the side-lines of work of the 61<sup>st</sup> session of the United Nations Committee on the Peaceful Uses of Outer Space (CUPOUS) (Space in Africa 2018). This cooperation was viewed as serving the interest of the African continent. Further to that, the African Union adopted the African Space Strategy in 2016 to facilitate active participation of African States in the development and use of space related technologies which will enables the continent to be able to respond the challenges affecting the Africa Continent and speed up the implementation of Science, Technology and



the Innovation Strategy for Africa (STISA) (Knyzaite 2018). It suffices to argue that, space law establishes principles of cooperation among States.

Moreover, one may argue that, space law lays the regulations on liabilities and damages caused by space objects. As a matter of fact, space objects may cause damage to people, public and private properties, these damages can also occur in territorial airspace and territorial waters thus also having an effect on the natural environment (Strout 20020. The 1972 Convention on Liabilities provides international law procedures for determining avenues for dispute resolution and compensation for damage caused by outer space objects related to events of accidents and torts. In this regard, the convention defines damage as the loss of life, personal injury, or other impairments of health, loss and damage to property. As such the launching State is liable for the damages caused on the Earth Surface or to aircraft in flight by a space object (Aust 2005). For instance, Article 5 of the Liability Convention states that, ‘the launching State is required to reimburse all costs involved in recovering the space object even if the space object is in another State’s territory as the launching State retain the ownership of the space object.

This is given credence by Canada which invoked the liability Convention Art. 5 as a basis for a claim in 1978 after the Cosmos 954, a Soviet satellite with high nuclear power source returned to Earth and crashed in the Canadian Northern territory resulting in the spread of radioactive debris over the territory. Both States pursued heightened diplomatic engagement leading to Soviet Union paying \$3million Canadian dollars for the damages caused (Smith 2018). In 1997 MIR (a Russian space object) collided with an unmanned ship cargo ship and came within 500 to 100 yards of colliding with a US military Satellite. While in 1979 space debris from the American Skylab space stations fell on a sparsely populated area of Australia creating sonic booms (Pawlikowski et al 2012). In such instance, it is observed that the international environmental law is invoked guided by the principle of the polluter pay principles if the space objects contaminants the natural environment. There is a relation that emerges between space law and air law comes in the fact that they both hold the State in which the space object or aircraft liable for damages. As a point of departure, space law is vital as it provides regulations on liabilities and damages caused by space objects.

## **Conclusion**

It has been shown in this paper that air law and space law are two bodies of law which are distinct although some scholars have joined attempted to bring the relationship between the two resulting in the concept known as aerospace law. The paper critically observed that, both bodies of law have surpassed the conventional international legal status by assuming a customary international law legal status due to the development of these principles as *jus cogens* which usually translate into obligation *erga omnes*. The importance of the two branches of laws are gleaned from how they address a plethora of useful principles for instance the free use of space for the benefit of all countries and mankind, territorial sovereignty and non-territorial sovereignty, issues related to prohibition against the contamination of the natural environment, liability and damages, registration and ownership of space objects, weaponisation of space, no fly zones among others. In this respect, the paper suggests that researchers must continue to explore the close relationship between air law and space law from the perspective of disciplines such as international environmental law, international humanitarian law and international water law.

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