

Chapter 1

The Shifting Focus

Firstly, any academic treatment of air law and policy should recognize that air law and space law are closely inter-related in some areas and that both these disciplines have to be viewed in the 21st century within the changing face of international law and politics. Both air law and space law are disciplines that are grounded on principles of public international law, which is increasingly becoming different from what it was a few decades ago. We no longer think of this area of the law as a set of fixed rules, even if such rules have always been a snapshot of the law as it stands at a given moment. Fundamentally, and at its core, international law was considered in simple terms as the law binding upon States in their relations with one another.¹ A definition of international law was first given by the Provisional International Court of Justice in 1927 in the celebrated *Lotus* case when the World Court said:

International law governs relations between independent States. The rules of law binding upon States therefore emanate from their own free will as expressed in conventions or by usages generally accepted as expressing principles of law and established in order to regulate the relations between these co-existing independent communities or with a view to the achievement of common aims. Restrictions upon the independence of States cannot therefore be presumed.²

The *Lotus* case provided a basis for international law and domestic law to function as separate entities, although there could be instances where issues such as piracy *jure gentium* and others concerning diplomatic immunities could be adjudicated under a domestic law system.

The abovementioned principle was implicitly derived from the basic rule of law as it applies even today, that in the sustained evolution of humanity from troglodytes to computer wizards a central role has always been played by the idea of law the idea that in every civilized society there must be order as against chaos and anarchy which were inimical to a just and stable society. Therefore law is the glue which binds the members of a community, whether national or international, together in their adherence to recognized values and standards. In international

¹Jennings (1990), p. 513.

²(1927) P.C.I.J. Ser. A, No. 9, p. 18.

law,³ the principal subjects are nation States, not individual citizens. Public international law applies to relations between States in all their numerous and complex forms, from war to satellites and governs operational policy of many international institutions. Some of the new and emergent areas of international law govern: the use of radio frequencies; communications; the availability, exploration and exploitation of resources, whether in the sea bed or in outer space; multinational corporations; trade, investment and finance; pollution, in all its forms; international crime and multinational corporations.⁴

International law and politics overlap in instances where international disputes may emerge between nations. International law has no legislature. Although the General Assembly of the United Nations exists and functions as a regulator of international policy, being composed of delegates from all member States of the United Nations, its resolutions are generally not binding on member States,⁵ except in certain circumstances. The United Nations system has no system of courts except for the International Court of Justice, based in The Hague, which can only hear cases between States if both sides to a dispute agree.⁶ Even if the parties to a dispute agree to come before the Court, it has no jurisdiction to make sure that its decision is enforced or followed. Thus the question has been frequently asked that, if there does not exist any identifiable institution to make law or establish rules, to explain and clarify such rules and, more importantly, to punish those who break rules, how can what is called international law be law? Traditionally, law as perceived from a purely domestic sense, is recognized as being composed of the four – Code, Cop, Court and Clink. In other words, a law to be recognized as such has to comprise a set of rules. Second, there must be a cop or policeman to ensure adherence to the law. Third, if one breaks the law, there has to be a Court which has jurisdiction to determine the conduct of the suspect and last, there has to be a clink or punishment. International law is not strictly endowed with these four Cs and therefore remains susceptible to criticism.

The considered view of jurists and judges alike, that international law is a set of rules, is embodied in the decision of the *International Tin Council Case*⁷ decided in the House of Lords in 1985 where Lord Oliver observed:

A rule of international law becomes a rule whether accepted into domestic law or not only when it is certain and is accepted generally by the body of civilized nations; and it is for those who assert the rule to demonstrate it, if necessary before the International Court of

³International law itself is divided into private and public international law, the former being also referred to as conflict of laws and the latter just termed International law. See Shaw (2003), p. 1.

⁴Jennings (1990), p. 521.

⁵See Article 10 and 11(1) of the United Nations Charter, which alludes to the General Assembly making recommendations to the member States. Also, Johnson (1955–1956), p. 97.

⁶See Article 36(2) of the Statute of the International Court of Justice, which calls for States Parties to the Statute to declare consensually that they recognize the jurisdiction of the Court.

⁷[1989] 3. W.L.R. 969 (H.L.).

Justice. It is certainly not for a domestic tribunal in effect to legislate a rule into existence for the purpose of domestic law and on the basis of material that is wholly indeterminate.⁸

According to this decision a rule of international law has to be accepted by civilized nations to be considered as binding. The acceptance has to be demonstrated in some form or other. One of the ways of determining acceptance and adherence by States of a rule or set of rules that could be considered international law is to observe whether a rule is observed globally through a sustained period of time. The difficulty in accepting this approach is that there have been instances in recent times where such rules have been breached or not observed by States, placing the credibility of international law in a flux and the position of international lawyers in a grey area. The four main areas of international law that have been brought to question are: firstly, the basic conceptual framework of international law as a structure based on relations between States (which was seriously questioned by the aftermath of the events of 11 September 2001); secondly, the rules governing the use of force by States (which some international lawyers have questioned with regard to the United States' occupation of Iraq in 2003 and thereafter); thirdly, the legal regime of military occupation (personified by the occupation of Afghanistan and Iraq); and fourthly, the law governing the treatment of combatants and prisoners of war.⁹

These four issues in particular, which are symptomatic of events that bring to bear the need for a renewed approach to international law call upon jurists and judges to question the fundamental premise that international law is a set of rules that are adhered to by nations amongst themselves. Followers of the New Haven or Yale School of thought have maintained that law is a process rather than a set of rules.¹⁰ Judge Roslyn Higgins has observed¹¹ that law is a specialized social process rather than a set of rules, which reflects a practical approach to and recognition of modern exigencies of international relations. The idea that law is a set of rules is rejected on the ground that the process of authoritative and effective decision-making does not involve the mere application of a pre-determined set of rules but is molded by social, moral and political considerations as well.¹² The realities of international relations are not reducible to a simple formula or set of principles but are dictated to by the interaction of States based on the primacy of a State and the philosophy that the world is organized on the basis of co-existence of States.¹³ The interrelation of States and comity takes away from international law the common attribute which many have assigned to it, that it is a stable domain which relates in some complicated way to society or political economy or class structure. Instead, international law is now regarded as practice and argument about

⁸[1989] 3. W.L.R. 969 (H.L.) at p. 1014.

⁹Lowe (2003), pp. 859–871 at 859.

¹⁰Arend (1999), p. 26.

¹¹Higgins (1999), p. 1.

¹²Bull (1977), p. 128.

¹³Freidman (1964), p. 213.

the relationship between something posited as law and something posited as society.¹⁴ One commentator has even gone to the extent of recognizing that international law is merely a particular type of discourse about international social life.¹⁵

International law and international politics are, in a way, a type of discourse which is manifested both by oral and written communication and state practice between officials of States. This is supplemented in certain circumstances with symbolic acts of States. The discourse which occurs at international politics drives the process and development of international law, to the extent that one commentator argues, quite validly, that international discourse paves the way for the establishment of international rules.¹⁶

States may, through interactive discourse, either between themselves or through the United Nations or other international or regional organizations, establish international custom and practice which may mature through the effluxion of time into principles of international law. One example is the declaration by one State of its territorial boundaries. If such a declaration is not challenged and is acquiesced by other States concerned, it would represent a legal principle to be followed in the future. Another way in which a State could influence international politics through the legal process is by invoking the international institutional legal process. This process often results in pronouncements being made by the United Nations General Assembly. For example, in Resolution 788, the United Nations commended the Economic Commission of Western African States (ECOWAS) for its efforts in restoring peace, stability and security in Liberia and conversely, in Resolution 1244, the Security Council condemned NATO action in Kosovo.

The shift of focus in international law and politics is due in part to the unique nature of events of recent times, which have deviated from established public law principles of war and belligerence. States have been under a certain compulsion to interpret their own positions with regard to self defence in the face of unknown enemies and threats by groups of persons rather than States whose geographic and territorial boundaries are known. For instance, consequent upon the events of 11 September 2001, the action taken by the United States in Afghanistan was first perceived to have been against the group of persons who were deemed responsible for the attacks on the World Trade Centre and other buildings within United States territory. Therefore the military presence of the United States in Afghanistan was not against the governing authority of the State itself but against persons who had found refuge in the country. The next development was justification for the military presence against the Taliban government who were perceived as harboring persons who were likely to continue to attack the United States and her people. International lawyers and politicians are compelled to view such instances with caution and interpret them according to applicable law. For example, if the United States went

¹⁴Kennedy (1988), p. 8.

¹⁵Purvis (1991), p. 115.

¹⁶Arend (1999), p. 27.

on the basis that a sovereign State was harboring terrorists who continued to be a threat and would possibly attack the United States, its action in Afghanistan may arguably be calculated to be an act of self defense under the United Nations Charter. The invasion of Iraq in the spring of 2003 is another instance where international lawyers may argue whether the use of force was necessary, leading some to respond that such a measure was aimed at preventing Iraq from using weapons of mass destruction. This by no means implies that both actions of the United States in Afghanistan were justified under the principles of self defense as practiced at international law. However, there is conversely no cogent reason to believe that a nation under siege from terrorist attacks should wait inordinately until the diplomatic machinery took its course, particularly if the State concerned had intelligence to indicate that such a delay would be detrimental to its interests and that of its citizens.

The subjectivity of the common law in jurisdictions of both sides of the Atlantic lends itself to further flexibility and shift in focus in the context of hostility. In the United Kingdom, the 1942 case of *Liversidge v. Anderson*,¹⁷ where the House of Lords interpreted Defence Regulation 18B which allowed the Home Secretary to order a person detained if he has reasonable cause to believe that such a person was of hostile origin or association. The majority decision in this case was to the effect that if the Home Secretary thinks he has good cause that was good enough. The dissenting judgment of Lord Atkin, who was of the view that judges should not be more executive minded than the executive was later upheld in the appellate stage of the Sri Lankan case *Nakkuda Ali v. Jayaratne*¹⁸ where the court held that such a power, to detain persons, must be exercised on objectively reasonable grounds. In the United States, of corresponding analogy is the wartime experience where 120,000 Japanese persons were placed in detention camps during the second world war. In 1988, the United States Congress passed legislation to the effect that the prisoners had largely been detained under racial and other subjective motivation which were determinants of a weak political leadership.

The *raison de etre* of international law and the determining factor in its composition is anchored on the international political system. The domestic flavour of the *Liversidge* and *Nakkuda Ali* decisions, although admitting of the validity of internal action by a State in order to protect its internal integrity, does not lend itself to assisting the international conduct of a State, where Article 2(4) of the United Nations Charter prohibits the use of force against the territorial integrity or political independence of any State, or in any other manner inconsistent with the purposes of

¹⁷[1942] AC 206.

¹⁸[1951] AC 66. However, it must be noted that the Hands off the Executive approach was rekindled in the 1977 case of *Rv Secretary of State ex parte Hosenball*, a deportee case where Lord Denning said that when there was a conflict of interest between the interests of national security on the one hand and the freedom of the individual on the other, the balance between the two should be determined by the Home Secretary who is entrusted this power by Parliament. See [1977] IWLR 766 at 783.

the United Nations. Furthermore, the 1965 *Declaration of Inadmissibility of Intervention in the Domestic Affairs of States* stressed that:

No State has the right to intervene, directly or indirectly, for any reason whatever, in the internal or external affairs of any other State. Consequently, armed intervention and all other forms of interference or attempted threats against the personality of the State or against its political, economic and cultural elements, are condemned.

This was reaffirmed in 1970 in the *Declaration on Principles in International Law*¹⁹ where it was emphasized that not only were such manifestations abhorred by the international community, but also they were deemed to be violations of international law. Thus, there is clear direction for international lawyers to distinguish between private morality of certain authorities and public morality which is grounded upon roots of common morality and make sure that the gap between the two does not remain unbridged. In other words, governments in their conduct of foreign affairs should not be deemed as being above the law. At the same time, they should not be fettered by an unnecessarily cumbersome bureaucracy when it comes to protecting their interests and the lives of their citizens.

The enforcement of international law is strictly the purview of the national states and each state claims sovereignty to the extent that it is its own source of authority and power. In this sense, international law has no overall application on a common basis where each state can be held responsible for the adherence to a unified set of mandatory rules that can be set and enforced by one supreme legislative body. On a juridical basis however, this primitive antithesis does not leave the world totally destitute of hope. It is now very apparent that with all its inadequacies, international law is at least an entity whose presence is felt.

If one were to doubt the significance of this law, one need only imagine a world in which it were absent . . . There would be no security of nations or stability of governments; territory and air space would not be respected; vessels could navigate only at their constant peril; property – within or without any given territory – would be subject to arbitrary seizure; persons would have no protection of law or of diplomacy; agreements would not be made or observed; diplomatic relations would end; international trade would cease; international organizations and arrangements would disappear.

Logically speaking, it would therefore seem that international law establishes ethical and moral dimensions that have proven to be accepted and followed by the United Nations member States. A further indication that principles of international law have been accepted may be found in those instances in which an injured state resorts to self-help in response to branches of international law. For example, when its airspace is encroached upon, the state may request a forced landing of the offending aircraft in its territory or guide the aircraft out of its territory. The absence of organized sanctions does not create a hiatus that cannot be bridged.

The personality and character of law and the possibility of it being followed hinge firstly on the personality of the leadership from which the law emanates.

¹⁹General Assembly Resolution 2625 (XXV).

Therefore it is appropriate that a leadership of the stature of the United Nations endeavours to strengthen international law by its Resolution 44/23.

The extent to which the stature of international law has been enhanced by the United Nations is evident in yet another legal and political phenomenon – the international sanction. An essential corollary of international law and the moral and ethical fibres of the Charter of the United Nations, this measure, like the previously discussed measure of self help is now widely used by one nation against another. The reasons for application of sanctions is often the same – as retaliation against the action of one State calculated to breach provisions of the United Nations Charter. The use of self help and the imposition of sanctions are two clear and forceful instances in which both the force and the acceptability of international law are recognized by States. Although some still believe that sanctions are not effective tools of statecraft that would result in punitive action with anticipated results, there is now strong contrary opinion that the application of sanctions does effectively enhance the principles of international comity. While some view economic sanctions as mere tools that are used to achieve foreign policy goals, the fact remains that, in the ultimate analysis, a sanction effectively punishes an offending State and to that extent supplements the punitive element in international law.

The goal of a just and lasting peace can only be achieved through adherence to a set of mutually acceptable rules of conduct. If this fact was apparent after the first 25 years of the existence of the United Nations it is now even more prominently seen in the statement of former Secretary General Perez de Cuellar to the effect that after 40 years we have, for the first time in history, a virtually universal world organization. We have also for the first time in history, a world of independent sovereign States. . . We have achieved unprecedented economic growth and social progress. . . We are making collective efforts to the new generation of global problems.

International Politics

An international political system has identifiable boundaries. They pertain to geographic, cultural and environmental concerns. However, when these three parameters are coalesced, they form an anarchical society so named in contradiction to depict and represent a system which has no common power.²⁰ Irrespective of whether the community of States have a common power or authority, they still remain an international society with common interests and common values sharing in the working of common institutions. States recognize one another's claims to independence and sovereignty and recognize circumscriptions of one another's ability to exercise force against each other. Of course at the same time, an essential feature of international politics is the collaboration of States in sharing resources and helping each other. The prerequisites of an international society are common

²⁰Bull (1977), p. 13.

values, common interests and common rules. The shift in focus from tradition international law rules to a social process transcends from a society of States to a society of humankind where sectoral boundaries would be blurred and a globalized perception of human rights and values would emerge. In such a system, individuals from all parts of the world could consider themselves an integral part of the global system, with common interests, values and rules applying to all across the globe.

Principles of international law and legal rules provide an efficient means of measuring how a certain political structure can change the identity of actors. To obtain full results, international relations and international law should be linked, particularly through scholars of both disciplines who understand the principles of each other's disciplines. Firstly, as Hurrell observes:

it is international law that provides the essential bridge between the procedural rules of the game and the structural principles that specify how the game of power and interests is defined and how the identity of the players is established ... international law provides a framework for understanding the processes by which rules and norms are constituted and a sense of obligation engendered in the minds of policy makers.²¹

Secondly, international law and international politics occupy the same conceptual space. These two disciplines supplement each other in providing the rules and regulations for the international system, which is an intellectual construct that international lawyers, political theorists and policy makers describe as a composite whole governing the entire spectrum of international policies. It makes little sense, therefore, to study one without gaining an understanding of the other.

It can be said with some justification that international law is the thread which runs through the fabric of international politics and provides the latter with its abiding moral and ethical flavour. Without principles and practices of international law, foreign policy would be rendered destitute of its sense of cooperation and become dependent on a national self interest. As President Woodrow Wilson once claimed:

It is a very perilous thing to determine the foreign policy of a nation in the terms of material interests ... we dare not turn from the principle that morality and not expediency is the thing that must guide us, and that we will never condone equity because it is convenient to do so.²²

This statement, made in 1950, has great relevance today, when continued progress is being made in technological and economic development and policy decisions of States have far reaching consequences on a trans-boundary basis. Nation States are becoming more interdependent, making decisions made by a particular State in its own interest have a significant negative impact on the interests of other States. Therefore ethics in foreign policy has largely become a construct which combines cultural, psychological and ideological value structures. Within this somewhat complex web of interests, decisions have to be made, which, as recent events in history have shown, require a certain spontaneity from the international

²¹Hurrell (1992), p. 73.

²²Quoted in Morgenthau and Kenneth (1950), p. 24.

community. For example, when Iraq invaded Kuwait in 1990, the members of the United Nations chose economic sanctions against Iraq, claiming that war was the last resort to be embarked upon against Iraq if economic sanctions did not prove to have any effect. In hindsight, one could argue one way or another, firstly, as did the United States, that the use of force bore quick results and, on the other hand, as did many officials in Paris, Moscow, Ottawa and Washington, that the decision to wage war against Iraq was too precipitous as not enough time had been given to economic sanctions to compel Iraq to retreat from Kuwait. The precipitous but quick action taken in going to war with Iraq might be justified by some with the analogy of Britain appeasing Hitler in the 1930s without adopting a more aggressive and perhaps belligerent attitude toward German atrocities. This action, which was later labeled as folly by most political scientists, was applauded and endorsed at that time in the British Parliament.

For years the construct of international politics and foreign relations has been that we live in a global village. The ultimate reality of this concept was seen on 11 September 2001 when the world intimately shared the tragic disasters of the United States. The United States, which had policed the world for 56 years after World War II, lost its innocence and its isolation, suddenly turning into a different kind of world power to whose aid other nations rushed. Global cooperation reached its zenith, with NATO invoking Article 5 of its founding treaty and declaring that terrorist activity against one NATO member country constituted an attack on all NATO member States, which would collectively respond as if they had been attacked themselves. The President of Russia phoned the President of the United States and pledged Russia's support. A week after the attacks, on 19 September 2001, the Organization of American States invoked their mutual defense pact – the Rio Treaty. The coming together of the entire world (except Iraq) in support of the United States signaled the dawn of a new cause and a new sense of challenge. New partnerships between governments were forged toward attaining a new global coalition against terrorism.

States come together as one in times of crisis and remain with each other at other times mainly because international relations have been a rule based system. Therefore, deviating from established rules of international law would act to the detriment of international unity and global cooperation among States. The first step toward ensuring a cohesive international consensus system is to continue building a rule based, cooperative democratic global system which does not succumb to individual acts of terror or conflict. Such a global system would not only ensure peace among nations but would also confront injustice, poverty, disease and environmental hazards.

The world must heed the call of some States which are now appealing to upkeep the principle of responsibility to protect which is enshrined in the United Nations Charter as the basic mandate of the United Nations. This mandate is primarily of the Security Council which was designed to meet threats and dangers posed by cross-border aggressions. States must not be allowed to indulge in preventive action in a unilateral manner, merely because there is a perceived security risk or threat to their peaceful existence.

Restoration of the dignity of the United Nations Security Council should go hand in hand with increased collaboration and partnership between States, through the United Nations, to create institutions that could address burning issues relating to internationally displaced persons, refugees and poverty. Global disarmament is another problem to be tackled. The proliferation of arms around the world has spurned threats not only to international harmony but also to domestic peace within nations. A more democratic system than that which exists in the United Nations system at present could help in developing principles of international intervention when States concerned or affected are not prepared or willing to take measures in protecting their own people. The United Nations should be geared more toward safeguarding people's interests through an international judicial system that would supplement the International Court of Justice which hears disputes between States and gives advisory opinions on issues regarding States. If the shifting focus of international law and politics would finally beam on the human being rather than the collective interests of the States, and human rights are ensured through various existing United Nations institutions and new ones which collect, disseminate and use information on abuse of human rights with a view to correcting them, such a shift of focus would indeed be a good thing.

The above recommendations, when applied to air and space law, have special meaning, as the issues addressed in this book will reflect. More emphasis is placed on the one hand on the interests of States whilst on the other, the rights of the individual are not neglected. These rights have to be viewed in the context of a changing world, where security and expediency of travel have to be considered as being symbiotic.

Air Space and Outer Space

The issue of air space and outer space is looming over the aerospace community, particularly with the prospect of space travel on a commercial basis being already a reality. At the time of writing, the aerospace community was considering such issues as sub-orbital flights and space tourism, both of which could further blur the boundaries between air space and outer space, while raising issues of topical interest. So far, there has not been a universally accepted definition distinguishing air space and outer space. Some years ago, when the legalities of an aerospace plane, which is a hypersonic single stage to orbit reusable vehicle that horizontally takes off and lands on a conventional runway were considered, it was thought that the transit through near space which is involved is incidental to the main transit which takes place within the airspace. Generally, the aerospace plane, which will be constructed with the use of aeronautical and space technologies and would be capable, and, indeed, required to fly both in airspace and outer space, would bring to bear the need to consider the applicability of and appropriateness of laws relating to the space plane's activities. It will be subject to the sovereignty of the State whose airspace it is in. This is an incontrovertible fact which need not be stated

since any object within the airspace of a territorial State would indeed be subject to that State's sovereignty.

At an open forum discussion held on 6 April 1989 during the Annual Meeting of the American Society of International Law in Chicago the legal and policy issues of the aerospace plane were brought to focus, and on the subject of delimitation of applicable laws, a view was expressed by academics of McGill University's Institute of Air and Space Law that the activities of the aerospace plane as a space traversing device used for point to point earth transportation could be governed by air law. It was the view of these academics that should the principle of air law apply, it was necessary for bilateral agreements to be signed between States prior to an international flight by the aerospace plane. It is logical to assume that, speaking from a purely commercial point of view, it follows that the aerospace plane which transports persons and goods between States should be considered an aircraft, even if it traverses through space at a given time.

Recently, the official launch of space tourism, where paying customers travelled beyond Earth's atmosphere, gave rise to an entirely different dimension, where the different issue of sub-orbital flights has emerged as requiring some consideration, particularly on the question as to whether such flights travel to outer space or whether they are deemed to be considered as not leaving the Earth's atmosphere. Unlike the aerospace plane which would leave the territory of one State as an aircraft, enter outer space and travel in outer space until it descends to a destination State, sub-orbital flights would not usually travel between two States but would ascend to an altitude sufficient for the persons on board to view the Earth as a whole globe, a phenomenon not available to aircraft passengers. The vehicle would descend to the State from which it took off. This activity is called "sub-orbital flying" and is gaining increasing popularity in the realm of space tourism. One of the issues that sub orbital flights raise is whether, at the height the flights are conducted, the vehicle is deemed to be in air space or outer space. Therefore, sub orbital flights inevitably call for a determination as to what might be air space, as against outer space.

The Permanent Court of International Justice, when requested for a definition of "air space" in the 1933 *Eastern Greenland's Case*,²³ was of the view that the natural meaning of the term was its geographical meaning. The most fundamental assumption that one could reach from this conclusion is that air space is essentially geophysical, meaning that it is space where air is found. Simplistically put, "air space" has been considered as going upwards into space from the territorial boundaries of a State and downwards to the centre of the Earth, in the shape of an inverted cone. This theory, advanced mathematically, in terms of space where air is found, would encompass the atmosphere, which has is layered into components starting from the troposphere (from sea level to about 10 kilometres); the stratosphere (from about 10 to 40 kilometres up); the ionosphere (from about 40 to 375 kilometres); and the exosphere (from 375 to 20,000 kilometres). Based on this methodology, a

²³PCIJ Series A/B, No. 53, at pp. 53ff.

sub-orbital flight, which goes up to about 62.5 miles (100 kilometres) above the landmass of the Earth, would hover somewhere in the lower level of the ionosphere, prompting the conclusion that it is a space flight traversing outer space, while others would maintain that the vehicle does not leave the Earth's atmosphere and therefore is airborne.

The United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS), which is the UN forum where technical and legal aspects of space activities with global impact are considered, has discussed the issue of the definition and delimitation of outer space from 1962 and no definite conclusion has been reached so far in this regard. In this connection, it is of interest to note that the Legal Subcommittee of UNCOPUOS, through its Working Group on Matters Relating to the Definition and Delimitation of Outer Space, has been considering possible legal issues with regard to aerospace objects. A questionnaire thereon has been circulated to all U.N. Member States. A compilation of the replies received so far and an analytical summary of such replies, as well as a historical summary on the consideration of the question on the definition and delimitation of outer space, may be found on the OOSA website.²⁴

As debated for decades in the framework of UNCOPUOS, it may be questioned whether the vertical limit of airspace would be critical to determine the scope of applicability of air law as opposed to international space law conventions (spatialist approach), or whether the type of activities at issue would determine which law should apply (functionalist approach) to sub orbital flights. The latter school of thought submits that flights which would be passing merely in transit through (sub) orbital space in the course of an earth-to-earth transportation would be in air space and therefore remain subject to principles of air law.

A sub-orbital flight is a flight up to a very high altitude which does not involve sending the vehicle into orbit. 'suborbital trajectory', which a sub orbital flight would follow, is defined in the legislation of the United States as "The intentional flight path of a launch vehicle, re-entry vehicle, or any portion thereof, whose vacuum instantaneous impact point does not leave the surface of the Earth."

In 2004, SpaceShipOne was the first private vehicle to complete two sub-orbital flights within two weeks carrying weight equivalent to three human adults up to about 62.5 miles (100 km) to win the Ansari X Prize. It was carried during one hour by an aeroplane up to nearly 50 000 feet (9.5 miles) from where it was released into a glide and then propelled vertically for 80 seconds by a rocket motor to an altitude of more than 62 miles at apogee, reaching a speed over Mach 3. Then falling back to return to earth, it re-entered the atmosphere and glided during 15 to 20 minutes before landing back on the runway of departure.

SpaceShipOne, strictly speaking, does not operate as an aeroplane or even as an aircraft during the ballistic portion of the flight while it is not supported by the reactions of the air, even though some degree of aerodynamic control exists throughout the trajectory from launch altitude until the craft enters the upper

²⁴www.oosa.unvienna.org/index.html.

reaches of the atmosphere where the air density is no longer sufficient for aerodynamic flight. After apogee, during re-entry into the atmosphere the vehicle transitions to unpowered aerodynamic (gliding) flight for the return to earth. Consequently, depending upon some design and operational aspects, it could be considered operating as an aircraft in flight during this latter portion of the journey.

Therefore, such vehicles could fulfil the principal elements in the definition of aircraft and be used as such during a portion of their flights, but they offer some characteristics of a rocket as well. It is likely that other vehicles engaged in the future in such sub-orbital flights would similarly be of an hybrid nature, taking into account that developments to come may lead to a range of designs, some of which could be more clearly classified as aircraft. Should sub-orbital vehicles be considered (primarily) as aircraft, when engaged in international air navigation, consequences would follow under the Chicago Convention, mainly in terms of registration, airworthiness certification, pilot licensing and operational requirements (unless they are otherwise classified as State aircraft under Article 3 of the Convention).

Plans have been announced by Virgin Galactic for the development of a fleet of five sub-orbital vehicles to carry paying passengers, six per vehicle; it plans that the first of these will be ready for commercial operations in 2008 at the earliest. There are indications that at least one other company is planning to offer rival sub-orbital flights.

Manned and unmanned sub-orbital flights have been undertaken to test spacecraft and launch vehicles intended for later orbital flight, but some vehicles have been designed exclusively to reach space sub-orbitally: manned vehicles such as the X-15 and SpaceShipOne, and unmanned ones such as ICBMs and sounding rockets. Sub-orbital tourist flights will initially focus on attaining the altitude required to qualify as reaching space. The flight path will probably be either vertical or very steep, with the spacecraft landing back at its take-off site.

The spacecraft will probably shut off its engines well before reaching maximum altitude, and then coast up to its highest point. During a few minutes, from the point when the engines are shut off to the point where the craft begins to slow its descent for landing, the passengers will experience.

A suborbital flight is known to be the next generation of commercial passenger travel. At the present time flight testing of commercial reusable launch vehicles (RLVs) is underway, making the availability of frequent suborbital flight closer than ever. As earlier mentioned sub orbital flights fly out of the atmosphere but do not reach speeds needed to sustain continuous orbiting of the earth. They allow passengers to look down at the brilliant curvature of the earth as they would from orbit.

One must not confuse a sub orbital flight with a space flight which is a flight *into* or *through* space. The craft which undertakes a spaceflight is called a spacecraft. It is often thought that orbital spaceflights are spaceflights and sub-orbital spaceflights are less than actual spaceflights. This is not entirely accurate as both orbital and sub-orbital spaceflights are true spaceflights.

The term *orbit* can be used in two ways: it can mean a trajectory in general, or it can mean a closed trajectory. The terms *sub-orbital* and *orbital spaceflights* refer to

the latter: an orbital spaceflight is one which completes an orbit fully around the central body.

From the above discussion the conclusions that could be drawn are that for a flight from Earth to be a spaceflight, the spacecraft has to ascend from Earth and at the very least go past the edge of space. The edge of space is, for the purpose of space flight, often accepted to lie at a height of 100 km (62 miles) above mean sea level. Any flight that goes higher than that is by definition a spaceflight. Although space begins where the Earth's atmosphere ends, the atmosphere fades out gradually so the precise boundary is difficult to ascertain. Therefore one could argue that there is a need to accept the fact that vehicles which would effect earth-to-earth connections through sub-orbital space could incorporate the constitutive elements of aircraft and fly as such at least during descending phase while gliding. However, rocket-propelled vehicles could be considered as not falling under the classification of aircraft.

From a spatialist viewpoint, there is no clear indication in international law on the delimitation between airspace and outer space which would permit to conclude on the applicability of either air law or space law to sub-orbital flights. On the other hand, it might be argued from a functionalist viewpoint that air law would prevail since airspace would be the main centre of activities of sub-orbital vehicles in the course of an earth-to-earth transportation, any crossing of outer space being brief and only incidental to the flight. The United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS), and more particularly its Legal Subcommittee, is considering the question of possible legal issues with regard to aerospace objects but no final conclusion has been reached yet.

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