I. Introduction

It was only in 1957 that Sputnik I succeeded in being the first object launched from this planet to reach outer space. Yet today the launching of objects into space, although not quite yet, promises soon to be almost a daily occurrence. Responsibility and liability for launch activities consequently deserve our close attention.

In examining the problem of international responsibility and liability for launch activities, it is necessary to clarify the meaning of these different terms used, namely, international responsibility, international liability, and launch activities.

II. Launch Activities

A. Meaning of 'Launch Activities'

The phrase 'Launch activities' means here in reality the act of launching a space object. For the sake of clarity, the 1972 Liability Convention\(^1\) has added in its Article 1(b):

>'The term “launching” includes attempted launching.'

The question then is, What is a space object?

B. Meaning of 'Space Object'

The expression 'space object' is not specifically defined in any of the conventions relating to outer space established under the auspices of the United Nations, notwithstanding efforts to do so in the negotiations leading to the 1972 Liability Convention and the 1975 Registration Convention.\(^2\)

As referred to in Articles VII and VIII of the 1967 Space Treaty,\(^3\) for example, it denotes simply 'an object launched into outer space,' which, in the terminology of the treaty, includes the moon and other celestial bodies in outer space.

From the legal standpoint, 'space object', in current practice, is the generic term used to cover spacecraft, satellites, and in fact anything that human beings launch or attempt to launch into space. This practice appears to have been well established by the 1967 Space Treaty (Arts. VII and VIII), the 1972 Liability Convention, and the 1975 Registration Convention. The fact that Article 3(2) of the Moon Treaty\(^4\) mentions spacecraft and man-made space objects separately when it refers to 'the earth, the moon, spacecraft, the personnel of spacecraft or man-made space objects', is intended no doubt to facilitate the reference to 'personnel of spacecraft' and is not believed to imply thereby that spacecraft do not constitute 'man-made space objects'. Moreover, although in the context of the Moon Treaty, it makes sense to refer specifically to man-made objects, a more precise specification would be 'man-launched space object', or 'object launched into outer space by humans', rather than 'man-made space object'; for there seems to be no valid reason why an object launched into space must be 'man-made' – an artefact. If for some reason, a piece of naturally formed rock is launched into space.
outer space, why should it not be accepted as a space object, or the component of a space object?

Whilst the Astronauts Agreement\(^5\) still refers separately and expressly to ‘component parts’ of a space object (Art. 5), both the Liability Convention (Art. 1(d)) and the Registration Convention (Art. 1 (b)) provide in identical fashion:

“The term “space object” includes component parts of a space object as well as its launch vehicle and parts thereof.”

In addition, the 1967 Space Treaty, in its Article VIII, appears to subsume under the term ‘space objects’ not only ‘their component parts’, but also ‘objects landed or constructed on a celestial body’.

Furthermore, the Liability Convention makes it clear in its Article 1(b):

‘The term “launching” includes attempted launching.’

In sum, therefore, the term space object designates any object which humans launch, attempt to launch or have launched into outer space, including the moon and other celestial bodies. The term includes the components of a space object, as well as its launch vehicle and parts thereof.\(^6\)

C. Where Begins Outer Space?
Now comes the question, Where is outer space? We know where the terrestrial moon is, and more or less where most, if not all, the other celestial bodies are, but at what point are we in outer space? In view of the persistent resistance of many States, including major space powers, to any attempt even to discuss the problem of defining and delimiting outer space, does one know where, in law, outer space begins?

There are basically three schools of thought on the subject:

(i) the spatialists who believe that there must logically be in law a clearly determined upper limit to national space and a clearly determined base-line marking the beginning of outer space,

(ii) the functionalists who dispute the need for or even the possibility of such a delimitation, and who believe that the lawfulness or unlawfulness of space activities should be determined solely by the nature of the activity or of the vehicle; and

(iii) the you-don’t-need-to-know school who claim that those who need to know already know where outer space is, but feel that there is really no need for the rest of us to bother ourselves with such problems. They prefer that the question be not raised, and still less discussed.

The latter two schools often take shelter behind the argument that geophysicists are unable, from the scientific point of view, to point to any specific line separating airspace from outer space, and in any case even if such a line were drawn it would be meaningless to most people. However, this argument either betrays ignorance of or deliberately ignores what States have done for centuries in drawing invisible boundary lines on the sea which separate their territorial seas from the high seas, lines the precise location of which is impossible to determine except through detailed maps of the coast and by reference to the legislation of the coastal State.

In fact, notwithstanding the obscurantist stance of the latter two schools, State practice indicates that there is already an acknowledged base-line of outer space, inasmuch as all States appear to accept that all the artificial satellites that are orbiting the earth or have orbited the earth are or were doing so in outer space, with the result that it is possible to say that according to the general opinio juris of States outer space begins at least from the point of the lowest perigee of any artificial earth satellite so far recorded. In putting this proposition forward, it may need to be emphasized that this is not to adopt what has sometimes been called ‘the lowest perigee rule’ either in the sense that the base-line of outer space coincides with the lowest theoretical perigee of artificial earth satellites, or in the sense that it will vary with the lowest perigee that may be achieved at any time in


the future. The above conclusion is based on the actual practice of States evidencing what they accept to be the law at this moment. In the absence of any successful protest by any State that any of the artificial earth satellites so far launched into earth orbit has actually violated its national space or airspace sovereignty, and in the light of express acknowledgements by some States that all existing artificial earth satellites were orbiting in outer space, the conclusion must be that there exists already a rule of general international law recognising the lowest perigee of any existing or past artificial earth satellites as marking the beginning of outer space. In absolute terms, this point may be put at 94 km from the surface of the earth. Conservatively, the figure may be put at 100 or 110 km. This is, however, always subject to the proviso that States may at any time, like what they have done with regard to the breadth of the territorial sea, wish to claim a higher or lower limit, or tacitly or expressly agree on a specific limit separating national space from outer space.7

D. Meaning of ‘Launching of Objects into Outer Space’

This being the case, there remains the question of the meaning of the phrase, ‘launching of object into outer space’. First, must the intention be that the object enters some orbit in space, or remains somewhere in space, for instance, on the moon or into deep space? In the former event, must it at least complete, or be intended to complete, an orbit? Or is it sufficient that the object penetrates into outer space, such as, for instance, meteorological sounding rockets that go straight up into outer space with a payload that comes straight down, or intercontinental ballistic missiles that traverse outer space in order to reach their target on earth, or fractional orbital bombs that enter into an earth orbit but do not complete it before re-entering the earth’s atmosphere in order to reach their target? The fact that the United States considers ballistic missiles to fall under the 1972 Liability Convention8 may be cited as evidence for the proposition that any object that reaches or is intended to reach outer space is a space object in the eyes of international space law. From this point of view, it would seem that aerospace craft fall within the definition of space object for as long as they operate as a spacecraft. All this merely shows how necessary it is to have a clear idea where outer space begins.

Now, how about objects that do not reach outer space? We know that, as used for instance in the Liability Convention, ‘launching’ includes attempted launching. From that point of view, there is no doubt that the ill-fated spacecraft Challenger which in 1986 so tragically and dramatically exploded soon after lift-off was a space object, but how about rockets or missiles which are not designed to reach outer space and never reach outer space. The clearest example would be a rocket fired from a life boat to a vessel in distress at sea, but one can also think of the many amateur rockets, including the first ever liquid-fuel rocket, that fired by the pioneer rocketeer Robert H. Goddard on 16 March 1926, which travelled only a few hundred feet.9 For that matter, the highest point reached by the German V-2 was only about 50 miles (80 km) before its trajectory started to bend earthwards.10 It is submitted that all rockets and missiles which are not designed or intended to reach outer space and which in fact do not penetrate into outer space are not space objects. Consequently, the launch of such objects would not be the launching of a space object, and, therefore,
falls outside the present inquiry. In international law, responsibility and liability for their launch would be a matter of general international law, and no one of international space law.

III. Responsibility and Liability Distinguished

A. Responsibility

The term 'responsibility', derived from the Latin respondere (to answer), means primarily answerability or accountability. At the most basic level, in the present context, it can mean simply authorship of an act or omission. Thus in paragraph 6 of the UN Security Council Resolution 487 (1981) of 19 June 1981 condemning the Israeli raid on the Iraqi nuclear research centre at Tammuz, the Security Council expressed the view that 'Iraq is entitled to appropriate redress for the destruction it has suffered, responsibility for which has been acknowledged by Israel'.11 Here responsibility means no more than that of authorship, a factual situation, since Israel had strongly maintained that its action was lawful and denied any liability. But, on the premise that human beings are masters of their own will and hence of their own actions, responsibility is a notion commonly associated with all systems of norms of human behaviour, moral, religious or legal, in the sense that people are answerable for the conformity of their own actions with the applicable norm or norms. Thus it has been held that Article 231 of the Versailles Treaty in naming Germany and her allies responsible 'for all the loss and damage to which the Allied and Associated Governments and their nationals have been subjected as a consequence of the war', it did no more than affirming the moral responsibility of Germany and her allies. In other words, judged by moral norms, they were the causes of all the loss and damage suffered by the Allies and Associated Powers and their nationals during the First World War.12

B. Liability

In the case of a breach of a legal rule causing damage to another, legal responsibility entails a legal obligation incumbent on the author of the breach to make integral reparation to the victim for the damage so caused in order to restore the position to what it probably would have been had the breach not taken place.13 The author of the breach becomes 'liable' for the damage.14 In French, the same word 'responsabilité', sometimes, though not necessarily, qualified as responsabilité légale, is used, thus not differentiating in terminology, albeit in fact and in law, between 'responsibility' and 'liability'. Liability represents merely one aspect of responsibility and a consequence of responsibility in case the person responsible breaches an obligation that is incumbent upon it and, in doing so, causes damage to another.

C. State Responsibility

In so far as international law is concerned, State responsibility is ordinarily divided into direct State responsibility and the so-called indirect State responsibility.15 Direct State responsibility refers to responsibility for its own acts. Since States can only act through its servants and agents, these are then acts of its servants and agents performed in their official capacity, which are thus imputable to it as its own acts. Indirect State responsibility is strictly speaking not a case of State responsibility as such. It describes in reality an international legal obligation to protect foreign States and their nationals, as well as their property, within its jurisdiction, particularly territorial jurisdiction, from injuries acts committed by persons who are not servants or agents of the State acting in their official capacity, acting individually or in groups of any number, from mobs to revolutionaries. The duty is not absolute, but consists only in the use of due diligence, in accordance with prevailing international standards, in preventing, suppressing and repressing such injurious acts. Failure to do so by any branch of the State whether legislative, executive or judicial, involves in fact the direct responsibility of the State, since failures by its officials will be imputed to the State as its own acts.

15. See Cheng, op.cit. in footnote 12 above, p. 201.
D. Individual, Assumed and Legally Imposed Responsibility

States thus, like individuals, are normally responsible only for their own acts or omissions, and, in law, liable only for damage caused by their own unlawful acts or omissions. However, in addition, in all legal systems responsibility for other people’s acts or omissions, as well as liability for damage, however caused, and by whomsoever caused, whether wrongfully or not wrongfully, may be voluntarily assumed or legally imposed. These may be called assumed and imposed responsibilities. They can also apply to responsibilities and liabilities for given situations or results which might occur.

International space law has made use of many of these notions and devices. Under the 1967 Space Treaty and the 1979 Moon Treaty, the contracting States have, irrespective of their obligations under general international law, assumed special obligations regarding their responsibility for the launching of space objects, and their liability for damage caused by space objects.

IV. Responsibility for Space Activities

A. General International Law

As mentioned above, States are directly responsible merely for their own acts. They are thus responsible for their own space activities, wherever they may be conducted. In so far as acts of those who are not their servants or agents are concerned, States have merely a duty to use due diligence to protect other States and their nationals according to international standards. In fact, this duty of indirect responsibility clearly exists only in areas subject to the effective territorial jurisdiction of the State concerned, particularly a State’s own territory where its jurisdiction prevails.

Whether such responsibility extends to places and persons subject merely to its quasi-territorial or personal jurisdiction, or even effective jurisdiction, such as ships, aircraft, or persons, whether natural or legal, outside its territory is, to say the least, in present State practice somewhat uncertain. For example, States have to be coaxed by the 1963 Tokyo Convention to extend their criminal law to aircraft of their registration when flying outside the national territory, and piracy is dealt with directly by international law.


1. Article VI.

Following the principle first envisaged in paragraph 5 of the 1963 Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space, Article VI of the 1967 Space Treaty, provides:

‘States Parties to the Treaty shall bear international responsibility for national activities in outer space, including the moon and other celestial bodies, whether such activities are carried on by governmental agencies or by non-governmental entities, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty. The activities of non-governmental entities in outer space, including the moon and other celestial bodies, shall require authorization and continuing supervision by the appropriate State Party to the Treaty. When activities are carried on in outer space, including the moon and other celestial bodies, by an international organization, responsibility for compliance with this Treaty shall be borne both by the international organization and by the States Parties to the Treaty participating in such organization.’

A similar provision is to be found in Article 14 of the 1979 Moon Treaty.


Such a provision is highly innovatory in international law. Under the first sentence of Article VI, States Parties to the treaty would seem to have thereby assumed direct responsibility for acts


17. On the division of State jurisdiction in international law into jurisdiction (the normative power of a State in international law to enact laws, make judicial pronouncements and adopt other decisions with legally binding effect) and jurisdiction (a State’s power in international law to set up machinery to make, implement and enforce, and physically to make, implement and enforce its laws, judicial pronouncements and other legally binding decisions; in other words, actually to exercise the functions of a State), see B. Cheng, ‘Crimes on Board Aircraft’, 12 Current Legal Problems (1959), 177-202, and ‘The Extraterrestrial Application of International Law’, 18 ibid. (1965), 132-52.


which in law would otherwise not be imputable to them, i.e., space activities of non-governmental entities. Here, it would appear that the description ‘non-governmental’ refers only to the government of the State, but does not necessarily exclude activities by foreign governments, especially foreign governments acting iure gestionis, provided that the activities in question can be classified as the former State’s ‘national activities’. Such non-governmental activities are to be treated as if they were activities of the respective States themselves, which, as a result, accept the legal responsibility. On this basis, it seems that the second sentence and the second part of the first sentence of Article VI do not exhaust the scope of this responsibility as stated in the first part of the sentence, and that the Treaty has merely singled out certain specific duties among all the consequences flowing from the contracting States’ responsibility for express mention and emphasis. In other words, it does not appear possible to limit this responsibility merely to requiring authorization, instituting supervision and assuring conformity with the provisions of the 1967 Treaty.

In fact, it is probably possible to have a narrow and a wide interpretation of the first sentence of Article VI of the Space Treaty where States assume direct responsibility for national activities in outer space carried on by non-governmental entities.

Under the narrow interpretation, as partially implied by the second half of the first sentence, one would equate space activities carried on by non-governmental entities with governmental activities only in respect of the State’s obligations under international law, obligations not only under the Space Treaty, but also under general international law. It extends to all acts and omissions by non-governmental entities which, if they had been committed by governmental agencies, would have engaged the international responsibility and liability of the State towards other States, including their nationals.

The wide interpretation would apply this assimilation even to private law responsibilities, liabilities, and obligations of the non-governmental entities, such as, for instance, failure to pay the launching charges, at least in regard to foreign States and their nationals.

Whilst the former interpretation would be normal under general international law in respect of obligations assumed by a State in the sense that it is obliged to ensure their observance by all those effectively under its jurisdiction, the latter interpretation would go beyond the usual position in international law, but it is not an impossible interpretation. However, even had the authors of the Treaty envisaged this possibility in 1967 when non-governmental space activities were regarded still as most exceptional, such an interpretation would need serious reconsideration today.

3. 'National Activities'.

Inasmuch as space objects are objects that penetrate into outer space, and the penetration or attempted penetration of outer space constitutes consequently an activity in outer space, it follows that the launching and attempted launching of space objects form part of that activity ‘in outer space’ and fall under the first sentence of Article VI. Contracting States, therefore, bear international responsibility for launchings that qualify as being ‘national’, whether carried on by themselves or by non-governmental entities.

There are those, including the United Kingdom in its Outer Space Act 1986, who are of the view that the phrase ‘national activities’ means solely activities of a State and its nationals. Up to a point, they are able to rely on the wording of IX of the Space Treaty, which speaks of ‘an activity … planned by it or its nationals’. It is submitted that this interpretation cannot be correct because it is at once both too narrow and too broad.

It is too restrictive inasmuch as it excludes activities by foreigners within its territory. The United States Commercial Space Launch Act of 1984, as amended in 1988, for instance, is more prudent in submitting within its ambit not only launch activities, including the operation of a launch site, of United States citizens, but also those of any person, irrespective of nationality, within the United States. It also excludes activities carried on by, or by persons on board, ships, aircraft and spacecraft under its flag or registration, especially when such craft are outside the territorial jurisdiction of
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any State and are, therefore, within the sole operative jurisdiction (or more specifically the effective jurisdiction) of the flag State. If the territorial State or flag State in such circumstances are not internationally responsible for space activities carried on in their territory or by craft or by persons on board craft in areas not under the territorial jurisdiction of any State, no other State would in fact be able to control such activities. The Treaty could hardly have intended such a result.

At the same time, to confine national activities solely to those of a State and its nationals is too broad an interpretation, because nationals can often be under the operative jurisdiction (effective jurisdiction) of another State. It would seem most unlikely that States would have wished to assume responsibility over activities which they are not in a position to control.

The most reasonable interpretation would seem, therefore, the one which renders all States Parties internationally responsible for activities in space – including launching – carried on by itself, wherever it may be, and those carried on by whomsoever within their jurisdiction, including their territorial, quasi-territorial and personal jurisdiction. Thus in addition to activities carried on by a State’s nationals wherever they may be, and those by any person within a State’s territory, one should include within the notion of ‘national activities’ also those by, or on board, ships and aircraft of a State’s nationality, wherever these ships or aircraft may be and irrespective of the nationality of the persons involved. To these, one may add, in any event as among parties to the 1967 Space Treaty, also activities by, or by personnel of, space objects under a State’s registry. Since Article VIII of the Space Treaty speaks of the State of registry ‘retaining’ its jurisdiction and control over such objects and their personnel, ‘while in outer space or on a celestial body’, it implies that such jurisdiction exists before such objects and their personnel enter outer space, and is not restricted to the period when they are in it. Consequently, its responsibility covers their activities wherever carried on.

In so far as nationals and means of transport capable of operating in areas outside the territorial jurisdiction of any State, as well as those on board, are concerned, inasmuch as no one can be held responsible for doing the impossible (nemo tenetur ad impossible),22 States may be exempt from their responsibility if such persons or means of transport happen to be under the effective jurisdiction of another State and it proves impossible, notwithstanding its efforts in good faith, to bring them within its effective jurisdiction, through extradition or other lawful means. The last proviso is necessary in order to prevent the use of havens of flags of convenience in order to avoid the obligations under the Treaty. There is a possibility of this happening under the present system.

4. Scope of Responsibility.

Among possible duties incumbent on the contracting Parties to the Space Treaty responsible for national activities in outer space, the 1967 Treaty specifies that which obliges the Parties to assure ‘that national activities are carried out in conformity with the provisions set forth in the ... Treaty.’ It follows that all launch activities of the contracting States, whether carried out by themselves or by non-governmental entities, will have to conform to the Treaty. It may be recalled that relevant provisions in this connection include, but are not limited to, Article II on non-appropriation of outer space, Article III on obligation to comply with ‘international law, including the Charter of the United Nations’, Article IV about weapons of mass destruction, Article V on assistance to astronauts, Article VIII on return of stray space objects, Article IX on avoidance of ‘harmful contamination’ and ‘adverse changes in the environment of the earth resulting from the introduction of extraterrestrial matter’, and Article XII on opening stations on celestial bodies to representatives of other contracting States, subject to reciprocity.

Since Article III of the Treaty obliges States Parties to conduct launch activities ‘in accordance with international law’, the first sentence of Article VI of the 1967 Space Treaty has consequently the effect of requiring all contracting Parties to the Treaty to ensure that all launchings of space objects for which they are responsible, whether carried on by themselves or by non-governmental entities, will conform, in addition, on account of the international law rule of pacta sunt

servanda, with all other treaty obligations incumbent on the contracting Parties relating to outer space activities, including the launchings of space objects.

5. 'The appropriate State Party'.

In so far as the second sentence of Article VI of the Space Treaty is concerned, there is much controversy on the identity of what the Treaty calls the 'appropriate State Party' which has the obligation of subjecting the 'activities of non-governmental entities in outer space' to 'authorization and continuing supervision'. All non-governmental launchings must consequently be authorized and supervised.

There are several views as to which country is the 'appropriate State Party'. First, since the Treaty uses the singular in referring to the appropriate State, it has been argued that there can be only one single appropriate State. A possible and in fact very plausible candidate would be the State of registry, envisaged under Article VIII of the Treaty. The fact that the relevant provision in Article VI followed that concerning the national State being internationally responsible for such activities as if they were its own suggests that the 'appropriate State Party' is none other than the State Party that bears international responsibility for these activities.

However, since, as has been pointed out before, a number of States may be actually and potentially responsible for a single space activity, the view has also been expressed that there may be several appropriate States. Moreover, as we shall soon see, a number of States Parties may be not only responsible but also liable for damage caused by a non-governmental activity leads one to think that all these States would wish to exercise control in the form of authorization and supervision of pertinent non-governmental space activities, including launchings; for otherwise they would fail to exercise control over activities for which they may be held responsible and liable. That under the Treaty more than one State can be responsible and liable for a given space activity in fact finds support in both Article XIII of the 1967 Treaty, and the last sentence of Article VI itself. The former provides:

'The provisions of this Treaty shall apply to the activities of States Parties ..., whether such activities are carried on by a single State Party ... or jointly with other States, including cases where they are carried on within the framework of international intergovernmental organizations ...'

The latter states:

'When activities are carried on in outer space ..., by an international organization, responsibility for compliance with this Treaty shall be borne both by the international organization and by the States Parties to the Treaty participating in such organization.'

The result is that each of the Parties involved can be reckoned as the 'appropriate State Party'. Consequently, there can be a number of 'appropriate States Parties'.

It has to be recognised at the same time, however, that if all non-governmental space activities require to be authorized and supervised by all the States which are concerned with their responsibility and liability for them, matters can become very complicated, especially if the various States were to act independently of one another.

There is no reason why the States Parties may not act jointly in granting the authorization and in exercising the supervision. Or they may even by consent arrange for one of them to do so. In this connection, it may be of interest to find that in the UN General Assembly's Resolution 1962 (XVIII) of 13 December 1963 on Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space, the precursor of the Space Treaty, principle 5, which is the equivalent of the Treaty's Article VI, used the expression 'State concerned'. It was only at the last minute in the drafting of the Space Treaty that it was changed to 'the appropriate State'. Clearly, as we have seen, many a State may be concerned with a given launching or space activity, but it is not impossible for them to choose one among them as the appropriate State to exercise the required control of authorization and supervision, just as it is possible, especially in the light of Article II(2) of the 1975 Registration Convention, for two or more States involved in a launching to arrange for one of them to be the State of Registry.

Bearing in mind Article VIII of the Treaty which confers jurisdiction and control on the State of registry, there may be much to be said for the States concerned to entrust the control of authorization and supervision to the State of registry, but there is equally nothing to prevent them from separating the two functions and entrusting the duty...
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of authorization and supervision to a contracting State other than the State of registry. However, the latter arrangement may, in practice, be difficult to operate.

The possibility of entrusting another State in a joint launching or space activity with the task of authorization and supervision, as well as the responsibility of ensuring compliance with international obligations is in fact clearly envisaged in the United Kingdom Outer Space Act 1986 which provides in its section 3(2)(b) that a United Kingdom licence is not required.

"for activities in respect of which it is certified by Order in Council that arrangements have been made between the United Kingdom and another country to secure compliance with the international obligations of the United Kingdom."23

What cannot be entirely excluded is the possibility of a kind of haven or flag of convenience being created, since there appears to be no restriction on what States may arrange. However, what needs to be borne in mind in any such arrangement is that it in no way absolves any of the States involved from either their responsibility under the first sentence of Article VI of the Space Treaty, or their liability for damage under either Article VII of the Space Treaty or under the 1972 Liability Convention. Consequently, all the States involved will need to ensure that both the State of Registry and the State of authorization and control, be they one and the same or two separate States, will discharge their duties in such a way as to obviate any risk of their international responsibility or liability being involved – or at least being involved without adequate recourse or remedy.

Examples of some such arrangements include the agreements between China and the United Kingdom concerning the launching by the China Great Wall Industry Corporation of Asiasat-1, Asiasat-2, Apstar-1 and Apstar-2, in which the Chinese Government assumes liability for any damage to third States or their nationals under the 1967 Space Treaty, the 1972 Liability Convention and general international law 'during the launch phase (from ignition of the launch vehicle to the separation of the satellite from the launch vehicle)."24

What is perhaps interesting in the above agreements between China and the United Kingdom is the fact that whereas China agrees to indemnify the United Kingdom in respect of any liability for damage caused during the launch phase of the various satellites, no stipulation is made regarding possible indemnification of China by the United Kingdom in respect of damage which may be caused by those satellites subsequent to the launch phase. As we shall presently see, the satellites having been launched from both Chinese territory, and from a Chinese facility, China is one of the launching States which are, under both Article VII of the Space Treaty and under the Liability Convention, internationally liable for any damage caused by those satellites throughout their entire career. The absence of an indemnification clause in favour of China would appear to be an oversight on the part of China.

V. Liability for Space Activities

A. General International Law

With reference primarily to a State's liability for damage caused to foreign States, including damage to their territory, nationals, and property, by objects which it has launched into outer space or which have been launched by non-governmental entities from its territory, several rules of general international law may be applicable.

First, consideration may be given to the rule quoted with approval by the arbitral tribunal in the Trail Smelter Arbitration (1935, 1941):

'A State owes at all times a duty to protect other States against injurious acts by individuals from within its jurisdiction."25

In the Corfu Channel Case (1949), the International Court of Justice also spoke of 'every State's obligation not to allow knowingly its territory to be used for acts contrary to the rights of other States'.26 What applies to the acts of individuals

26. ICJ Reports 1949, p. 4, at p. 22.
within the territory of a State applies all the more to the acts of the State itself. However, the word 'knowingly' in the Corfu Channel decision indicates that State responsibility in such cases remains based on fault.27

It is debatable whether there is yet in international law a general rule, as opposed to treaty provisions, imposing no-fault liability on States for damage caused by their ultra-hazardous activities.28 However, it may be argued that in certain fields, including space activities, the underlying principle of certain widely accepted treaties may have already passed into the realm of general international law.

B. Treaty Rules


Following essentially the principle first enunciated in paragraph 8 of General Assembly Resolution 1962 (XVIII), Article VII of the Outer Space Treaty provides:

'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 Party from whose territory or facility an object is launched is internationally liable for damage to another State Party to the Treaty or to its natural or juridical persons by such object or its component parts on the earth, in airspace or in outer space, including the moon and other celestial bodies.'

This article, in regard to the launch of any space object and in relation to other contracting parties to the Treaty, creates the possibility of four separate contracting States being simultaneously and, it would appear, jointly and severally liable for any damage which the space object may cause, namely (i) the State that launches the space object, (ii) the State that procures its launching, (iii) the State from whose territory the object is launched, and (iv) the State from whose facility it is launched. Doubt remains, however, as to the precise interpretation of the phrase 'internationally liable', and in particular whether the article implies fault or no-fault liability. Concern exists also regarding the procedure of enforcing this liability.

2. The 1958 Astronauts Agreement.

The 1968 Astronauts Agreement provides in its Article 5(4) that:

'a Contracting Party which has reason to believe that a space object or its component parts discovered in territory under its jurisdiction, or recovered in territory under its jurisdiction, or recovered by it elsewhere, is of a hazardous or deleterious nature may so notify the launching authority.'

The launching authority is defined in Article 6 as the State or appropriate international intergovernmental organization responsible for launching. In case of notification, the launching authority 'shall immediately take effective steps, under the direction and control of the said Contracting Party, to eliminate possible danger of harm'. The Agreement makes no reference to possible compensation or any other obligation on the part of the launching authority.


The treaty that specifically tackles the problem of damage caused by space objects is the 1972 Liability Convention. The Convention first of all makes clear that 'damage' means loss of life, personal injury or other impairment of health; or loss of or damage to property ...', the phrase 'launching State' refers to the same circle of States that the Space Treaty has in mind, and the term 'space object' includes component parts of a space object as well as its launch vehicle and parts thereof (Article 1). It follows from the definition of the launching State that, in addition to the State which launches or procures the launching of a space object, the State from whose facility or territory a non-governmental space object is launched is automatically liable for any damage which the object may cause to other contracting States or their nationals, irrespective of the principle of national responsibility under Article VI of the Outer Space Treaty. However, in view of Article VI of the Space Treaty, whenever reference is made to a State, it applies also to ships, aircraft and persons, whether natural or corporate, of its nationality, inasmuch as their space activities would constitute...
'national activities'. What is rather unclear here is whether the term territory includes ships and aircraft of a State's nationality. However, if they are used for the launching of space objects, they would probably all fall into the category of facility. In regard to non-governmental launch facilities, what is also not clear is whether the decisive factor is the nationality of the owner or that of the operator. The United States’ Commercial Space Launch Act seems to regard the nationality of the operator of the launch site as alone relevant.29

Under Article V of the Liability Convention, all the States participating in a joint launching will be jointly and severally liable. The position of international intergovernmental organizations conducting space activities is set out in Article XXII.

The Convention is not applicable to damage caused to nationals of the launching State or foreign nationals participating in the operation of the space object (Article VII), but there is no exclusion of damage caused by either nuclear material or military space objects,30 nor any ceiling to the launching State’s liability.

The Convention establishes the launching State’s absolute liability31 for damage caused by its objects on the surface of the earth or to aircraft in flight (Article II), except to the extent to which such damage has been caused by the gross negligence or an act or omission on the part of the victim or of the claimant State done with intent to cause damage (Article VI(1)). Liability for damage done elsewhere rests on fault (Article III).

Article IX of the Convention prescribes that the presentation of claims under the Convention by contracting States against one another shall be through diplomatic channels (Article IX) whether the claims be on their own behalf, or on behalf of their nationals (Article VIII). In an interesting innovation, the Convention permits a State, if the State of nationality has not presented a claim, to present a claim to a launching State in respect of damage sustained in its territory by any natural or juridical person, and in default of such a claim, a third State may present claims in respect of damage sustained by its permanent residents (Article VIII).

The most notable achievement of the Convention consists in establishing a system of compulsory third-party settlement of disputes (Articles X to XIX). This system, albeit its decisions are not binding unless the parties have so agreed, is able, even when faced with a total lack of cooperation from one of the parties, to lead, within a prescribed time scale, to a final and recommendatory award, based on international law, on both the merits of the claim and the amount of compensation, if any, payable. The parties are under a duty to consider such an award in good faith.32

VI. Summary

First, it is necessary to clarify the meaning of various terms, particularly: international responsibility, international liability, and launch activities.

‘Launch activities’ means basically the launching of space objects, including attempted launching.

‘Space object’ means object, including components, launch vehicles, and parts thereof, which humans launch, attempt to launch, or have launched into space, including the moon and other celestial bodies.

As to where does outer space begin there are three schools of thought: first, the spatialists who believe in the need in law to have a boundary separating national airspace from outer space; secondly, the functionalists who disagree and believe that space activities can be regulated without such a boundary; and thirdly, the ‘you-don’t-need-to-know’ school who do not wish to see the question raised and still less discussed.

In practice, since no State has ever claimed that any of the satellites that have orbited the earth has infringed its national airspace, it is possible to say that in national law outer space begins at least from the height above the earth of the lowest perigee of any existing or past artificial satellite that has orbited the earth without encountering any valid protest.

‘launching of object into space’ means consequently the launching or attempted launching of an object designed and intended to penetrate into

29. 49 USCS Appx, s. 2605(1) and (2).
30. See footnote 8 above.
32. See further Cheng, loc.cit., in footnote 1 above.
outer space – i.e., above the height as defined above – whether or not in any orbit, and for whatever length of time. Any such object is a ‘space object’.

Objects which are not designed or intended to enter outer space and which in fact do not penetrate into outer space are not space objects for the purpose of international space law.

Responsibility and Liability Distinguished

A. Responsibility
At its most basic level, responsibility can mean simply a factual relation of authorship. As human beings are deemed to be masters of their own will and actions, responsibility implies a person’s answerability for his or her own acts according to relevant normative systems of behaviour, be they social, moral, religious, legal, or otherwise.

In law, responsibility (responsabilité in French) implies answerability for one’s conduct being in conformity with applicable legal norms.

B. Liability
In law, breaches of applicable legal norms causing damage to another create liability, which consists in an obligation to make integral reparation to the other person for the damage caused. In French, no special term is used to describe this aspect of responsibility, and the same term responsabilité is used, sometimes qualified, though not necessarily, as responsabilité légale.

C. State responsibility
State responsibility is sometimes divided into direct State responsibility and indirect State responsibility. The former refers to a State’s responsibility for governmental acts, i.e., acts or omissions of any of its servants or agents acting in their capacity as government officials. Such acts are imputed to the State as the State’s own acts, since States can act only through their servants and agents. The so-called indirect State responsibility is in reality an obligation incumbent on a State to exercise due diligence to protect primarily foreign States, their nationals, and their property against injurious acts committed within that State’s jurisdiction, particularly territorial jurisdiction. Its responsibility is engaged only if its servants and agents fail to discharge this duty of the State, and is in fact a case of a State’s direct responsibility for the failures of its servants and agents which are imputable to the State as the State’s own acts.

D. Individual, assumed and legally imposed responsibility
States, like individuals, are normally responsible and liable only for their own acts and omissions, including those of their servants and agents which are imputable to them. However, in all legal systems, persons may either voluntarily assume additional responsibilities and liabilities, or have responsibilities and liabilities imposed on them by law.

Responsibility for Space Activities

A. General international law
Under general international law, a State would be directly responsible for its own space activities wherever they may be conducted.

Under general international law, States would incur only indirect State responsibility for space activities carried on by non-governmental entities, and this probably only for activities in areas subject to their territorial jurisdiction.

It is debatable whether States owe the same duty to protect foreign States and their nationals in respect of non-governmental acts committed by or from ships, aircraft, and spacecraft bearing their flag, or by their nationals, when such craft and nationals are outside of the territorial jurisdiction.


a. Article VI
The most important treaty provision regarding international responsibility for space activities is Article VI of the 1967 Space Treaty. A similar provision exists in the 1979 Moon Treaty.

b. Assumption of direct State responsibility for non-governmental space activities
Under Article VI of the Space Treaty, the contracting States, in addition to their responsibility for their own space activities, have assumed direct State responsibility for national activities in outer space carried on by non-governmental entities. Here it would appear that the description ‘non-governmental’ simply means the government of the State, but does not necessarily exclude activities by foreign governments, especially foreign
governments acting iure gestionis, provided that the activities in question can be classified as the former State’s ‘national activities’.

It is possible to have a narrow and a wide interpretation of Article VI. Under the narrow interpretation, as partially implied by the second half of the first sentence, the State assumes responsibility merely for ensuring that such activities conform with rules of international law relating to such activities as if they were its own activities. Under the wide interpretation, the State would be internationally responsible even for the private law obligations of the non-governmental entities carrying on space activities as if they were its own activities, such as for instance failure to pay the launching charges.

c. ‘National activities’

There is much divergence in opinion as to what constitutes ‘national activities’. Based on the principle that whatever activity that is subject to its effective jurisdiction and therefore not under the control of any other State, or, in the absence of effective control by another State, reasonably capable of being brought back under its effective jurisdiction, it is submitted that the following constitute ‘national activities’ within the meaning of Article VI of the Space Treaty:

(a) A State’s own activities, wherever conducted;
(b) Activities, by whomsoever conducted, within its effective jurisdiction, whether territorial, quasi-territorial, or personal. This means in effect, activities (i) by whomsoever conducted within a State’s territory, (ii) by or by persons on board ships, aircraft or spacecraft of its nationality or registration, when they are outside the territorial jurisdiction of any State, and (iii) those of its nationals, physical or corporate, when outside the territorial or quasi-territorial jurisdiction of any other State;
(c) Activities by or on board craft of its nationality or registration, or by its nationals, wherever they may be, if it is reasonably practicable for it to bring them back to within its effective jurisdiction.

d. Scope of responsibility

Among the responsibilities of the Contracting States, Article VI of the Space Treaty specifies the duty to ensure that all ‘national activities in outer space’ including all launchings of space objects, will conform with the 1967 Space Treaty (which contains a number of specific obligations), the United Nations Charter, and international law. Since international law contains the principle of pacta sunt servanda, this means that the State must also ensure that national activities, even by non-governmental entities, will comply with all its relevant treaty obligations.

e. ‘The appropriate State Party’

Article VI of the Space Treaty specifies that non-governmental space activities, which would include all launchings of space objects, require to be authorized and supervised by ‘the appropriate State Party’.

There is much discussion as to which country is the ‘appropriate State Party’. The fact that the Treaty uses the singular in referring to the appropriate State has given rise to the view that there can be only one single appropriate State. However, when two or more States Parties are involved in a launching, each incurs the same obligation to subject the activity to authorization and supervision, with the result that there can be several appropriate States Parties. Besides, since probably all the States involved are international responsible and liable for the said activity, each will have an interest in making sure that the activity is properly controlled and supervised.

However, nothing in the Treaty appears to prevent States, if more than one are involved in a space activity, to make arrangements for the designation of one of them to act on their joint behalf in subjecting that activity to authorization and continuing supervision. What cannot be entirely excluded is the possibility of a kind of haven or flags of convenience being created. However, it has to be remembered that such arrangements would not absolve any of the Stats concerned from the responsibility and liability incumbent on them under the Treaty. For this reason, it is important for all the parties involved to ensure that the designated State carries out the control effectively, and that there is a well thought out system of allocation of responsibility, and of mutual waivers and indemnification.

Liability for Space Activities

A. General international law

On the basis of authorities such as the Trail Smelter arbitration and the Corfu Channel case, it appears that States’ liability for damage caused by
their space objects and those launched from its territory by non-governmental entities may still be based on fault, although it is arguable that the treaty rules which have since been developed in this field have already been received into general international law.

B. Treaty Rules

1. The 1967 Space Treaty
Under Article VII of the Space Treaty, in launching a space object, four States can be internationally liable for any damage caused. These are the State that launches, the State that procures the launching, the State from whose territory the object is launched, and the State from whose facility it is launched. However, where more than one State are involved, although it is presumed that their liability will be joint and several, the Treaty is not explicit. Nor is it clear whether this liability is absolute or based on fault. There is no clarification of the meaning of the phrase ‘internationally liable’, or of the procedure how claims are to be made or, in case of dispute, settled.

2. The 1968 Astronauts Agreement
Under the 1968 Astronauts Agreement, the launching authority (which is not specifically defined apart from the statement that it is the ‘State responsible for launching’) has the duty of eliminating possible danger of harm from space objects or their components which have come down elsewhere than intended, if it is notified by the State of landing that it is believed that they are of a hazardous or deleterious nature.

3. The 1972 Liability Convention
The 1972 Liability Convention has defined the meaning of the terms ‘damage’, ‘launching’, ‘launching State’, and ‘space object’, and clarified the position of international intergovernmental organizations engaged in space activities. It has confirmed the principle of joint and several liability, when two or more States are involved.

The 1972 Convention excludes damage to nationals, and foreigners participating in the operation. Nuclear damage and damage by military space objects are not excluded from the Convention, which moreover places no ceiling on the amount of compensation which may be due.

States incur absolute liability for damage caused on the surface of the earth and to aircraft in flight, except where there is gross contributory negligence or where there is intent to cause damage. Liability for damage caused elsewhere depends on fault.

Claims for compensation are presented through diplomatic channels, and may be done by States on behalf of their nationals, or residents if the damage occurred within their territory, or their permanent residents.

Perhaps the greatest achievement of the Liability Convention is the incorporation of a system of third-party settlement of claims, in case of dispute, on the basis of international law, within a prescribed time scale by the end of which a final decision has to be reached on the merits of the claim and the amount of compensation, if any, payable, even though the award is only recommendatory, unless the parties agree that it should be binding.