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Outer Space, Liability for Damage

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A. Responsibility and Liability in International Space Law

1. Article VI Outer Space Treaty and Responsibility

1 The international responsibility of States and their liability for damage have a specific declination in the field of space activities (→ *State Responsibility*). Article VI Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies ('Outer Space Treaty') provides that

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.

Article VI Outer Space Treaty adds that activities of non-governmental entities in → *outer space* 'shall require authorization and continuing supervision by the appropriate State Party to the Treaty' (→ *Responsibility of States for Private Actors*). This provision is not an example of utmost clarity. In particular, the terms 'national activities' and 'appropriate State' can be, and are, subject to different interpretations. It is however conceivable that, in the case of activities conducted by private entities, both the State of the territory from which these activities are undertaken and the State, if different, of which the private entities are deemed to be nationals, according to → *international law*, would qualify as 'national States' (→ *Nationality*); and it has to be presumed that, at least in most cases, the national State would also be the 'appropriate State'. The national State shall, then, authorize and supervise private activities in space, it shall assure that those activities respect the provisions of the Outer Space Treaty and it shall be responsible for them.

2 The nature of this responsibility is, however, also subject to debate. It has been argued by at least one scholar that the national State's responsibility under the terms of Art. VI Outer Space Treaty would consist of its duties of authorization and supervision of private entities: as a consequence, in the case of a violation of international space law by a private entity, the national State would always have the possibility of escaping its responsibility by demonstrating that it did not violate those duties and that the private activity was undertaken out of the reach of its control (Pedrazzi 31–49). According to the prevailing interpretation, however, the provision does automatically attribute all private activities to the national State, thus establishing an important derogation to the rules on attribution codified by the Draft Articles on Responsibility of States for Internationally Wrongful Acts, approved on second reading by the → *International Law Commission (ILC)* in 2001. This solution was in fact adopted at the beginning of the space age, as a compromise between the position of the United States of America ('US'), favourable to the free use of outer space by private entities, and the thesis of the Union of Soviet Socialist Republics ('USSR'), advocating a ban on all private activities in space.

3 The above interpretation of the 'national' and 'appropriate' State concepts would seem to be confirmed by United Nations General Assembly ('UNGA') Resolution 59/115 of 10 December 2004 (GAOR 59th Session Supp 49 vol 1, 163 ; → *United Nations, General Assembly*) on the 'Application of the concept of the "launching State"', despite its very general and ambiguous language. UNGA Resolution 59/115 recommends that States conducting space activities, 'in fulfilling their international obligations under the United Nations treaties on outer space', including the Outer Space Treaty, 'consider enacting and implementing national laws authorizing and providing for continuing supervision of the activities in outer space of non-governmental entities under their jurisdiction', where, in the absence of a further specification, 'jurisdiction' can be understood as both territorial and personal (→ *International Law and Domestic [Municipal] Law*; → *Jurisdiction of States*). In

fact, national space laws have been enacted by various space-faring States, and they mostly provide for authorization and supervision over private activities in space undertaken both from their territory and by their citizens and national companies. These domestic provisions can be understood as the symptom of prudent behaviour, whereby States try to protect themselves from all prejudicial consequences arising out of any possible broad interpretation; be that as it may, they unquestionably contribute to the formation of a praxis which confirms a broad reading of the norm. A consequence of such a broad reading is that more than one 'national', 'appropriate', and 'responsible' State may coexist with regard to a single private space activity.

2. Article VII Outer Space Treaty and Liability

4 Under Art. VII Outer Space Treaty, each State Party 'that launches or procures the launching of an object into outer space'—always including the → *Moon and celestial bodies*—and each State Party 'from whose territory or facility an object is launched' is 'internationally liable' for damage to another State Party or to its natural or legal persons caused by such object 'or its component parts' on the Earth, in → *airspace* or in outer space—including the Moon and celestial bodies. A certain number of features of this provision are striking. First of all, liability for damage is apparently established on a very broad basis, without any explicit requirement of → *fault*, or even of a wrongful act, although the exact foundation of liability is not specified, and it is not clear if the potentially liable State would have recourse to any exoneration cause. Second, Art. VII Outer Space Treaty does not establish any explicit connection with the responsibility envisaged by Art. VI Outer Space Treaty, and the relationship between the two norms is thus not clear. Fortunately, some clarifications would come from the Convention on International Liability for Damage Caused by Space Objects ('Liability Convention'), that would develop the content of Art. VII Outer Space Treaty.

B. The 1972 Liability Convention

5 As underlined in its Preamble, the Liability Convention, adopted by the UNGA on 29 November 1971, opened for signature in London, Moscow, and Washington on 29 March 1972 and entered into force on 1 September 1972, was elaborated as an instrument for ensuring 'the prompt payment ... of a full and equitable measure of compensation to victims' of damage caused by space objects, considering that, 'notwithstanding the precautionary measures to be taken ... damage may on occasion be caused' by such objects (→ *Compensation*). 'Space object' is understood to be any object launched into outer space, including, under the terms of Art. I (d) Liability Convention, its 'component parts ... as well as its launch vehicle and parts thereof' (→ *Spacecraft, Satellites, and Space Objects*). Whatever the interpretation of the term 'component parts', damage caused by space debris—ie dead space objects and fragments originating from their break-up, which also constitute the major source of pollution in outer space—is considered to be covered (Cheng 506; Gorove 165; Hurwitz 23-26).

1. The Bases of Liability

6 Liability falls on the launching State, which is defined as 'a State which launches or procures the launching of a space object' or 'a State from whose territory or facility a space object is launched' (Art. I (c) Liability Convention). The definition of the liable States reproduces that of Art. VII Outer Space Treaty. It makes it possible to have more than one liable State in the case of a single accident: first, the State 'which launches', ie actually performs the launch; second, the State, if different, 'which procures the launching', or in the French version 'qui fait lancer l'objet spatial', eg the State owner/operator of a satellite paying the launch service offered by another State; third, the State, if different, from whose territory the space object is launched; and fourth, the State, if different, owner/operator of

the space facility from which the space object is launched. These States might even be more than four, in cases where there would be more States jointly launching or procuring the launch or jointly operating the launch facility (→ *Joint Undertakings*).

7 Strangely enough, as in Art. VII Outer Space Treaty, no connection is established within the Liability Convention between the State liable for damage caused by a space object and the State responsible for the space activity, according to Art. VI Outer Space Treaty. Private space launches are not even considered by the Liability Convention, at least in express terms. True, they have become an important reality only over the last two decades, ie only some years after the entry into force of the Liability Convention. What is certain is that most launches undertaken by private entities, and even from private space facilities, do indeed fall under the Liability Convention rules, as the State of the territory from which the space object is launched would in any case be liable. But, following the letter of the Liability Convention, one could deduce, as indeed some authors do (Bückling 214; van Fenema 109), that launches undertaken by private entities from outside the territory of any State, eg from the → *high seas*, would not be covered by it. According to the prevailing interpretation, however, the question of private launches is solved by the attribution of private activities to the national State operated by Art. VI Outer Space Treaty. This attribution, combined with a broad reading of the requisite of 'nationality', would thus also cover private launches undertaken from outside the national territory, as the national State would automatically qualify as 'the State which launches' the space object. For those who consider the Outer Space Treaty to be largely correspondent to international customary law, this solution would, furthermore, apply not only to States Parties to both the Liability Convention and the Outer Space Treaty, but to all States Parties to the Liability Convention (see Cheng 621-40; Kerrest 92-112; → *Customary International Law*).

8 This apparent incoherence in the law is, to a certain extent, remedied by the international space law provisions on registration. The 1975 Convention on Registration of Objects Launched into Outer Space ('Registration Convention'), which is binding on most space powers, establishes an obligation on the launching States to register space objects. The definition of launching State is identical to that contained in the Liability Convention. Now, under the terms of Art. VIII Outer Space Treaty, the State of registry 'shall retain jurisdiction and control' over the space object 'and over any personnel thereof, while in outer space or on a celestial body'. According to the most convincing interpretation, this automatically qualifies the State of registry, which as a launching State is liable for damage, as the national State, or at least a national State. In other words, registration of a space object is a means of channelling responsibility and liability onto a single State; that does not mean that other States cannot be responsible and liable under the applicable rules.

9 Contrary to Art. VII Outer Space Treaty, the Liability Convention specifies the bases of liability, which differ according to the location of the damage and the nature of the damaged object. According to Art. II Liability Convention, liability is absolute for damage caused by a space object on the surface of the Earth or to an aircraft in flight. Under Art. III Liability Convention, however, liability shall be based on fault—of the launching State or 'of persons for whom it is responsible'—in the case of damage caused, in all environments except on the surface of the Earth, to a space object of another launching State 'or to persons or property on board such a space object'. Absolute liability, which is quite unique in international law, is then the rule applying to damage caused, by definition, to 'innocent victims': although launching includes attempted launching under Art. I (b) Liability Convention, nationals of the launching State, and foreign nationals participating in the operation of the space object or present in the immediate vicinity of a planned launching as a result of an invitation by the launching State, are excluded from the benefits of the Liability Convention under Art. VII Liability Convention. Absolute liability means that in principle no causes of exoneration are admitted. In fact, on the basis of Art. VI Liability

Convention, exoneration from absolute liability is provided only insofar as the launching State proves gross negligence or *dolus* on the part of a claimant State or of persons it represents; but no exoneration whatsoever is admitted where damage results from activities violating international law. As for the rule of fault liability, it applies in particular to all collisions among space objects—launched by different States—in orbit: its application to any concrete case of accident may, however, become particularly problematic, especially if space debris was involved, in the absence of clear standards of diligence to be followed in outer space.

10 In the case of multiple States participating in the launching of a space object, ie qualifying as launching States, the rule of joint and several liability applies. That means that a State sustaining damage can seek the entire compensation due from any or all of the launching States. Obviously the participants in a joint launch ‘may conclude agreements regarding the apportioning among themselves of the financial obligation in respect of which they are jointly and severally liable’ (Art. V Liability Convention): the State having paid the entire compensation will thus be able to claim indemnification from the other participants, in conformity with the terms of their agreement. Another case of joint liability is provided for by Art. IV Liability Convention, with regard to damage caused *par ricochet*.

11 According to some commentators (though the opinion is far from being unanimous), the regulation of international liability for damage caused by space objects testifies that this liability is not attached to the commission of an internationally wrongful act (Condorelli 278–79; Pedrazzi 297–368; Quentin-Baxter 253–56). Or better, it is independent of the commission of a wrongful act, ie it subsists whether the conduct causing damage, which is different from the ‘activity’, is wrongful or not, which is once again a rather unusual occurrence in international law (*ibid*; see also → *Liability for Lawful Acts*). The only basis of the regime designed by the Liability Convention seems in fact to be the idea of an equitable redistribution of damage caused by activities considered to be beneficial to the advancement of humankind, but at the same time dangerous.

2. The Nature of Damage and Its Compensation

12 The damage covered by the Liability Convention is caused by a space object ‘on the surface of the earth or to aircraft in flight’ (Art. II Liability Convention); or it is caused to another space object, or to persons or property on board, elsewhere than on the surface of the Earth (Art. III Liability Convention). The term ‘damage’ includes

loss of life, personal injury or other impairment of health; or loss of or damage to property of States or of persons, natural or juridical, or property of international intergovernmental organizations. (Art. I (a) Liability Convention)

The definitions make it clear that physical damage caused by impact of a space object, or possibly by contamination arising out of an impact, was chiefly contemplated. The discussion is open on whether modalities of causation of damage by a space object other than physical impact—eg through the emission of radio waves—would be covered. What seems to be certain is that the causation link must be sufficiently direct.

13 The liable State shall be bound to pay full compensation for the damage, in conformity with the rules regarding reparation for an internationally wrongful act (→ *Reparations*). Article XII Liability Convention provides in fact that compensation shall

provide such reparation ... as will restore the person, natural or juridical, State or international organization ... to the condition which would have existed if the damage had not occurred.

3. The Settlement of Claims

14 The strength of the Liability Convention resides in the regime of liability: a public international law regime, and thus always centred on State liability, which is designed in such a way as to provide the best possibilities of indemnification to States and individual victims of damage caused by space objects. Its main flaw resides in the mechanism for the settlement of claims. On one side, private parties do not have any capacity to activate the mechanism themselves, although nothing prevents them from seeking redress in competent domestic courts; on the other side, the system does not provide for a binding resolution. Claims to the launching State for compensation have to be introduced through diplomatic channels (Art. IX Liability Convention; → *Diplomacy*). Actually, the requirements of → *diplomatic protection* are alleviated, as the State of the territory where damage was sustained and the State of permanent residence may present the claim of an individual if the State of nationality has not done so (Art. VIII Liability Convention); a rule that will, however, have little practical effect. If no settlement is reached by means of diplomatic negotiations, each party may determine the constitution of a Claims Commission, normally composed of three members, which 'shall decide the merits of the claim for compensation and determine the amount of compensation payable, if any' (Art. XVIII Liability Convention). However, this decision shall be 'final and binding' only 'if the parties have so agreed' (Art. XIX (2) Liability Convention). Otherwise the Claims Commission 'shall render a final and recommendatory award, which the parties shall consider in good faith' (Art. XIX (3) Liability Convention; → *Good Faith [Bona fide]*). Which means that what is designed is, in the absence of a different agreement between the parties, merely a form of → *conciliation*, although a reinforced one rather close to → *arbitration*, as the Claims Commission, which shall fundamentally decide on the basis of international law, shall state the reasons for its award and make it public (Art. XIX (2), (4) Liability Convention).

4. The Cosmos 954 Case and the Outer Space Nuclear Principles

15 No Claims Commission has in fact ever been constituted, while only one international claim for damage caused by a space object has been presented on the basis of the Liability Convention. If space activities have proved to be very dangerous for those participating in space missions, fortunately third parties have so far been almost exempt from very serious consequences. The Soviet military satellite Cosmos 954, with nuclear power sources on board, fell on Canadian territory on 24 January 1978. Fragments of the satellite were dispersed over a vast area of uninhabited territory within the Northwest Territories and the provinces of Alberta and Saskatchewan. On 23 January 1979, ie within the one-year term limit established by Art. X Liability Convention, Canada presented its claim to the USSR for compensation of approximately 6 million Canadian dollars. The claim was based on various legal arguments, but rested mainly on the Liability Convention. As no damage in a strict sense had been caused to people or property, Canada asked for a reimbursement of the additional costs incurred for search and clean-up operations, necessary to remove the satellite's fragments, some of which were of lethal radioactivity. According to Canada, the danger posed by the fragments rendered the hit territories unfit for use, which constituted damage to property within the meaning of the Liability Convention. The dispute was settled by means of diplomatic negotiations, ending with the Protocol between the Government of Canada and the Government of the Union of Soviet Socialist Republics signed on 2 April 1981. The USSR agreed to pay Canada about half of the sum originally requested, but it never explicitly recognized its liability under the Liability Convention. Doubt remained whether environmental damage such as that experienced by Canada was covered by the definition of damage contained in the Liability Convention (→ *Liability for Environmental*

Damage). This doubt was solved by the Principles Relevant to the Use of Nuclear Power Sources in Outer Space ('Outer Space Nuclear Principles'), adopted by means of UNGA Resolution 47/68 of 14 December 1992 (GAOR 47th Session Supp 49 vol 1, 88): Principle 9 (3) Outer Space Nuclear Principles determined that compensation under the Liability Convention 'shall include reimbursement of the duly substantiated expenses for search, recovery and clean-up operations, including expenses for assistance received from third parties'. The importance of this statement, although formally non-binding, for interpreting the terms of the Liability Convention cannot be overstated.

5. The Liability of International Organizations

16 Under the Liability Convention, an international organization can also qualify as a 'launching State'—or, better, a 'launching organization'—and incur liability for damage (→ *International Organizations or Institutions, Responsibility and Liability*). According to Art. XXII Liability Convention, in fact, a form of participation by international intergovernmental organizations in the Liability Convention is envisaged: the Liability Convention, with the exception of the final clauses, does apply to an international organization conducting space activities whenever the organization 'declares its acceptance of the rights and obligations' provided for in the Liability Convention and a majority of the Member States are States Parties to the Liability Convention and to the Outer Space Treaty. Such a → *declaration* was indeed made by the → *European Space Agency (ESA)* and by → *EUTELSAT*, which thus became bound by the Liability Convention. In the case of damage caused by a space object launched by an international organization, however, its Member States that are parties to the Liability Convention are jointly and severally liable with the organization, but their liability can be invoked only if, after presentation of the claim to the organization, the organization has not paid within a period of six months any sum agreed or determined to be due as compensation.

6. Assessment

17 The Liability Convention has never really been tested, apart from in a limited way with the *Cosmos 954* case; it is thus difficult to assess its validity. It is also difficult to tell how much its regime has entered the field of international customary law; a problem that could arise in the case of a space object causing damage to a non-party State, as all space powers are bound by the Liability Convention. In considering the validity of this instrument, one has to keep in mind that its aim is that of offering a mechanism for the reparation of certain kinds of damage caused by space objects. It does not aim to be exclusive, as both private and public parties can choose alternative means of advancing a claim, be it on the domestic or on the international level; nor does it aim to cover any damage caused by anyone in outer space or by means of space activities. The development of these activities poses new problems of liability—such as the complex ones related to the operation of global navigation and positioning satellite systems—which surely cannot be solved by the Liability Convention. The liability regime envisaged by the Liability Convention is also criticized by many commentators with regard to some of those aspects that are covered by the instrument. In particular, a public international law regime such as that envisaged by the Liability Convention is felt to be inadequate to deal with the greatly developed phenomena of privatization and commercialization of space, or with the technological developments regarding aerospace transportation. Various proposals are advanced, but the conditions do not seem to exist at present for their translation into any reform of the current legal framework.

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