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# Legal Complications of Private Planetary Defence Missions

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## Introduction

With the success of the recent DART mission, planetary defence has been brought to the forefront of the public debate. Simultaneously, the recent decade has brought an extensive increase of private actors in space activities, eg. SpaceX, Blue Horizon or Virgin Galactic. These private actors are expected to play a part in upcoming planetary defence missions. The SMPAG legal working group for example notices that „*parts of the mission, including essential ones, may be taken over by private actors*."[1] Although, they also note that the planetary defence mission would most likely be carried out on the order of the State, and thus not in a purely private manner. Furthermore, if damages are done on the surface of the earth or in the air, the things damaged in most cases will be owned by a private person. As such, it is possible to claim that private persons should be considered as a central role in all planetary defence missions, be they as an actor or as a victim. The legal issues arising out of the addition of a private actor in a planetary defence mission become apparent when considering the consequences if such a mission fails, and more importantly when asking the question of who will pay for the damages and who has the right to claim damages against whom. These questions will be considered in three areas of law, international law, domestic law and the right of the victim.

## International Law

First, any planetary defence mission will have an international character. This is mostly visible when such a mission fails, and where the damages most likely will extend beyond the State that took the decision to act but also to the territory of or property in other States. Thus the question as to who is liable, meaning who has the obligation to pay, for the damages has to be considered under international law. The main issue in any private international planetary defence mission is that international law does not cover private actors.[2] While liability is considered, both in the Outer Space Treaty and the Liability Convention, international space law only makes the "*launching State*" absolutely liable, not the actor who launched/operated/participated in the mission.[3] This reliance on States to pay for the mistakes of private actors is also reiterated in the legal literature. The aforementioned SMPAG legal working group report, for example, only notes the activities of private actors in

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[1] Alissa J. Haddaji et al "Planetary Defence Legal Overview and Assessment" (2020-04-08) at 41 online: < https://www.cosmos.esa.int/documents/336356/336472/SMPAG-RP-004_1_0_SMPAG_legal_report_2020-04-08.pdf> (henceforth SMPAG Legal Working Group Report).

[2] Blacks law Dictionary defines "International Law" as "*the term given to the laws governing and determining the rights of independent nations during war or peace times,*" thus excluding private actors from its consideration (The Law Dictionary, "INTERNATIONAL LAW Definition & Legal Meaning" online:< https://thelawdictionary.org/international-law/> (accessed 19th March 2023)).

[3] *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies*, 27 January 1967, 610 UNTS 205 (entered into force 10 October 1967) art VII and *Convention on International Liability for Damage Caused by Space Objects*, 29 March 1971, 961 UNTS 187 (entered into force 1 September 1972) art II.

relation to the responsibility of States to supervise the activities of private actors.[4] They however fail to consider private actors in their chapter on "*Liability*."[5] The report concludes that if a planetary defence mission fails, the State, or States, that fall under the international definition of a launching State is both jointly and severally internationally liable to pay for the damages caused by the mission on earth.[6] Those private actors failed to be considered in a public international law report is however not surprising, as strictly speaking private actors do not exist in this sphere of the law, as already noted above. As such, to hold private actors accountable, the conclusion of the SMPAG legal working group report on international liability sets an important basis for further consideration of the liability of all actors, as it switches the question of who has the obligation to pay from an international forum to a domestic one.

**Domestic Law**

Second, using the conclusion in the international law forum as a basis, the question also switches from, are private actors liable internationally, to do States have the right to compensation from the private actor for the damages the State had to pay for. To answer this question, on the one hand, one has to consider the domestic legislation of each State. When comparing different domestic space legislations, a picture becomes clear. It is possible to group States into three groups. First, the domestic space law does not consider liability compensation or is not applicable to a planetary defence mission. Here States such as Norway,[7] and Canada can be found.[8] Second, States have the right to compensation from private actors. Smaller space powers, such as Sweden, have taken such a route.[9] They however fail to make private actors guarantee the monetary funds for this compensation to be paid.[10] Lastly, the preferred route amongst western nations at least is a combination of compensation to the State, as well as adequate insurance. The UK for example holds that to be able to obtain a launching licence the private operator has to obtain adequate insurance. Furthermore, the actor has the obligation to indemnify the State for damages brought against the UK internationally.[11] Furthermore, some States while following similar ideas, do not state the right of compensation as clearly as others. Luxembourg in particular notes that the operator of the space object is fully liable, while not mentioning the international aspects of this liability.[12] As such it can be concluded that the right for a State to get compensated by the private actor depends on which State is the one claiming compensation under which law.

On the other hand, simply because the State does not have the right of compensation within their domestic legislation, or the private actor does not fulfil the provisions set within the domestic law, does not mean that the State cannot claim compensation. Even the State has the right to claim compensation under the "traditional route". This should be established under the law of contractual obligations As claimed in the beginning, the private actor would act on behalf or in cooperation with the State. In such a situation, it would be prudent to have a contract in place setting the contractual obligation of both parties. Part of these contractual obligations should be the consideration for compensation between the parties in the case the mission should fail and cause more damage. Furthermore, even in the highly unlikely event that the

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[4] SMPAG Legal Working Group Report *supra* note 1, at 43–44.

[5] *Ibid,* at 46–58.

[6] *Ibid,* at 51–54.

[7] Lov om oppskyting av gjenstander fra norsk territorium m.m. ut i verdensrommet, (13th June 1969), Norway.

[8] Note Canada does not have a law pertaining to space activities in general, but rather one for Remote Sensing Activities specifically which also does not cover liability compensation, see Remote Sensing Space Systems Act SC 2005, c 45 and Ram S. Jakhu et al "Findings of an independent review of Canada's Remote Sensing Space Systems Act of 2005" XXXVII Ann Air & Sp L 399, at 412.

[9] Lag om rymdverksamhet (1982:963), Sweden, at s 6.

[10] Note here that Sweden has not included the obligation for adequate insurance on the part of the private actor.

[11] Space Industry Act (2018), ch 5,United Kingdom at s 36 and 38.

[12] Loi du 15 décembre 2020 portant sur les activités spatiales et modifiant :1° la loi modifiée du 9 juillet 1937 sur l'impôt sur les assurances dite « Versicherungssteuergesetz »; 2° la loi modifiée du 4 décembre 1967 concernant l'impôt sur le revenu, Luxembourg, at art 4.

mission was conducted entirely by the private actor, without the involvement of a State, certain States require a license for the activity.[13] Almost all domestic legislation creates the need for authorisation of a space activity. Noting especially Norway, whose domestic law from 1969 only includes 2 sections detailing the need for authorisation for the launching of a mission from territory under Norwegian sovereignty.[14] In such a situation the license would function similarly to a contract, obligating the license holder to follow the obligations set on them through it.

Here however two limitations must be noted. First, both the contract and the license, depending on the domestic law of the contracting/issuing State, are limited to domestic matters. As such, if another State is held liable internationally, this State cannot claim against the private actor in the other State under a contractual obligation, unless the liable State has a contract with the private actor as well.[15] Second, when it comes to licenses, certain domestic legislation limit what is allowed to be included within the terms of the license. The UK for example, in schedule 1 of the Outer Space Act sets out a list of what is allowed to be included in a license. This list, fortunately, does include the requirement to hold adequate insurance and indemnify the State.[16] As such, it is possible to conclude that multiple contracts between all parties involved in a planetary defence mission, counteracting the issues mentioned, is beneficial for any State claiming compensation. Furthermore, the avoidance of pure private planetary defence missions, authorised through a license, is advised from a liability viewpoint.

**The rights of victims**

The private person that is mostly forgotten in the legal literature on planetary defence, or indeed any liability of an outer space activity, is the victim. And yet, any time a planetary defence mission goes wrong, it is a private actor, and not the government or parliament of the State, that sustains the harm. Noting that this of course is a simplification of a complex situation on property rights and State theory. Similarly, to the obligations of a private actor to pay for the damages caused by their actions, the rights of the victims to claim compensation can be divided into two legal spheres; domestic and international.

First, the rights of the victims under the domestic law of delict/tort, against another private actor, are similar to those of the State. A private person is usually able to claim compensation for damages caused by the actions of another private person. To be able to claim across State borders, rules of private international law are important to consider, both for where to sue and what law will be used to decide the lawsuit.[17] That being said, it would be near to impossible for the private actor to prove the required negligence on the part of the private operator to claim under tort/delict. Furthermore, another element might be difficult to establish, namely that the private space mission operator had a duty of care against the victim. As such, while it is possible it can generally be concluded that suing under delict/tort is not an effective option to get compensated for damages. Furthermore, the victim would most likely not have any contractual right of compensation, as it is highly unlikely that the private actors would have a contract with each other detailing such a right.

Another domestic law avenue the victim can take is the domestic space law of some States. The domestic law of certain States includes the option to hold a private actor liable for damages caused by a space operation. As already mentioned Luxembourg holds any private actor

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[13] See for example, SPACE ACTIVITIES ACT 1998, Australia and Setsuko Aoki “Domestic Legal Conditions for Space Activities in Asia“ (2019) 113 AJIL 103, at 104–105.

[14] Lov om oppskyting av gjenstander fra norsk territorium m.m. ut i verdensrommet, (13th June 1969), Norway.

[15] Note, both the issues of a State not being able to sue a citizen of another State comes into play, as well as certain considerations of privity of contract found mostly in common law countries.

[16] Space Industry Act 2018, ch 5, United Kingdom schedule 1 at 35.

[17] For example note the EU’s internal rules on cross bordder jurisdiction found in Brussels 1a Convention, (*Regulation (EU) of the European Parliament and of the Council of 12 December 2012 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters (recast)*, no 1215/2012) and applicable law found in the Rome I Convention (*Regulation (EC) of the European Parliament and of the Council of 17 June 2008 on the law applicable to contractual obligations*, No 593/2008).

absolutely liable for damages.[18] This right against the private actor would also extend to another private actor, not only the State. The UK also allows for compensation against a private actor by a private actor.[19] They note in section 34 that if the damage is done to "*persons or property on land or water in the United Kingdom or in the territorial sea adjacent to the United Kingdom, or to aircraft in flight over any such land, water or sea, or to persons or property on board any such aircraft*" that person can claim damages without proving negligence on the part of the operator.[20] Austria even goes as far as mentioning the private international application of their domestic laws, however, the right for compensation in the Austrian Space Act is limited to the relationship between Austria and the private actor.[21]

The victims' rights against the operating State however can be more complicated. As such, it is difficult to simplify the rights of private victims against States in domestic law. Rather it is dependent on the State which operated the mission.

Another way for a private victim to claim compensation is through the adequate State internationally. In such a case, the victim would be represented by the adequate State, which then can claim under the public international rights considered above. In such a situation, a legal relationship would be created between the State and the private actor, potentially on both sides (the victim and the operator), as well as between both States creating a shape similar to a table. That being said, in such a scenario the private actors themselves do not have a legal relationship, neither with the other private actor or with the other State.

This way of claiming compensation however raises two questions that have to be considered more by the legal field. Firstly, what is the appropriate or adequate State? Legal academics have argued on the definition of an appropriate State under article VI detailing the responsibility of States for space activities of private actors.[22] However, when it comes to the question of which State should represent a legal person, it can be noted that different legal fields answer the question of what the adequate State is differently. While public international law focuses on the citizenship of a person or company,[23] private international law focuses on residence or the centre of the life of a person.[24] Furthermore, the sovereign claim a State might have over the property also might play a role when it comes to

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[18] Loi du 15 décembre 2020 portant sur les activités spatiales et modifiant :1° la loi modifiée du 9 juillet 1937 sur l'impôt sur les assurances dite « Versicherungssteuergesetz »; 2° la loi modifiée du 4 décembre 1967 concernant l'impôt sur le revenu, Luxembourg, at art 4.

[19] Space Industry Act (2018), ch 5, United Kingdom, at 34(2).

[20] *Ibid*.

[21] Bundesrecht konsolidiert: Gesamte Rechtsvorschrift für Weltraumgesetz, (Fassung vom 19.03.2023), Austria, at s 1(2). Note that this law however does not include the direct liability against third parties, only s 4(4) includes the obligation for adequate insurance.

[22] Micheal Gerhard "Article VI" in Stephan Hobe et al eds. *Cologne Commentary on Space Law* (Cologne: Heymanns, 2009) 103 at 113.

[23] See for example the extra jurisdictional expansions on licensing requirements to the citizens of the licensing State, found in for example the Swedish domestic law or the Austrian domestic law.

[24] See for example, the EU regulations, especially Brussels 1a, article 4 hold that "*persons domiciled in a Member State shall, whatever their nationality, be sued in the courts of that Member State*." *Supra* note 17.

the right of damages against other States. This claim can extend beyond the physical territory of a State through the registration of air crafts or ships.[25] Allowing the State who has sovereignty over the property that was damaged might however have unwanted consequences in the case that the private owners of the property might not have any connection to the State in which it is registered.[26] Thus, the question of which is the adequate State is yet to be fully answered.

Secondly, a suggestion was given by the SMPAG ad hoc legal working group for the mitigation of liability of the launching State, primarily looks at the encouragement for States to sign an ad hoc liability waiver.[27] This would mean that the State cannot claim against the operator State anymore.[28] However, it is unclear how this waiver would affect the rights of the victim. Questions such as, if the victim can claim compensation from their own State or if they lose the international right for compensation completely, have to be considered further before any State signs an international liability waiver. Similar considerations for the private party victim should also be taken before the Security Council issues a binding decision for, giving a similar effect as the waiver.[29]

**Conclusion**

In light of the recent increase of private actors in space activities, including their possible participation in a planetary defence mission, the inclusion of private actors in the liability discussion has to be contemplated when taking the decision to act. Even in the case that the domestic law of a State allows for the compensation for damages paid under international law, States should conclude a contract with the private actor and this contract should contain a liability/compensation clause. Furthermore, any State has to consider the implications to private actors, the signing of an international liability waiver or taking a similar decision in the security council, as these decisions may have unwanted implications on the rights of private victims.

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[25] Paul Dempsey and Ram Jakhu , *Routledge Handbook of Public Aviation Law* (1st edn, Taylor & Francis Group 2017) 89-90, 106 on the extension of sovereignty over registered aircrafts and *S.S. Lotus (France v. Turkey.)* [1927] PCIJ Series A No 10, for the extension of sovereignty over boats.

[26] Note for example the issues with flags of convenience in international maritime law. Flag of Connivence being defined by Blacks law Dictionary as "*a ship that is registered under the laws but is not registered to the mother country it came from. This is done fr lower taxes or leniency in requirements that cut costs*" highlighting the difference between the State in which the boat is owned and the State in which it is registered. (The Law Dictionary, "FLAG OF CONVENIENCE Definition & Legal Meaning" online:< https://thelawdictionary.org/flag-of-convenience/> (accessed 19th March 2023)).

[27] SMPAG Legal Working Group Report *supra* note 1 at 56.

[28] *Ibid* at 56.

[29] *Ibid* at 56