



National Response to Moon and Other Celestial Bodies Activities: A Study in Philosophy of Law

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ABSTRACT

Despite the emergence of a critical need for national assistance, the construction of a legal framework controlling the moon and other celestial bodies began at the international level and mostly stayed there. The five international space treaties provide guidelines for carrying out operations on the moon and other celestial bodies; however, in light of recent advancements in the exploration and utilisation of the moon and other celestial bodies, they are judged to be inadequate. Due to the disputes between the nations, the Moon Agreement of 1979 put an end to the steady development of international space law. Since then, discussions have been taking place to evolve the space law further. The UNCOPUOS is working to enhance the current space treaties and encourage the creation of national space laws, even though it does not support the approval of new space treaties. The international space treaties also impose, if indirectly, on the nations the duty to establish national space law by allowing for such laws. In order to regulate activity on the moon and other celestial bodies, this book examines the need placed on the states to establish national law. The efforts undertaken by spacefaring countries including the US, Russia, Australia, and the United Kingdom are emphasised in this book, despite the fact that there hasn't been much progress in the area of national law controlling operations on the moon and other celestial bodies.

Keywords: Philosophy of Law; Space treaty; Celestial bodies; Moon.

1. 1. INTRODUCTION: LAWS TO REGULATE MOON AND CELESTIAL BODY ACTIVITIES

The five main space accords only provide the basic guidelines for operations on the moon and other celestial bodies; they do not give more specific guidelines for execution (Deplano, 2021). In order to apply the principles of the space treaty to control space operations in the municipal domain, the enumeration of such specific implementation regulations becomes essential. Therefore, it is assumed that because the states are signatories to the space treaties, they are responsible for establishing such specific municipal regulations. Furthermore, it has been discovered that the space treaties are by no means enough to define the law pertaining to operations on the moon and other celestial bodies in light of the advancement of space technology and the ensuing private activities in outer space, the moon, and other celestial bodies. Since the Moon Agreement's collapse, the necessity for national space law to complement the international legal framework—particularly for regulating activity on the moon and other celestial bodies—has risen manyfold. The current legal framework is so obviously inadequate that it raises the fundamental issue of how to settle interactions between governments and private companies engaged in space operations. These elements are what motivate the need for national space laws.

Many sections of space treaties find it essential for national law to fill up the gaps. The obligation of nations to approve and oversee private activity on the moon and other celestial bodies has to be clarified under Article VI of the Outer Space Treaty and Article 14 of the Moon Agreement. For the control of operations on the moon and other celestial bodies, the act of authorization and monitoring is essential (Jakhu & Buzdugan, 2008). The space accords leave it up to governments to decide how authorization and monitoring are carried out. This requirement can only be fulfilled by passing legislation at the local level. To their own benefit as well as the benefit of private investors in the operations on the moon and other celestial worlds, the governments must explain their laws. The states benefit from a clear municipal law since it makes it apparent to what degree they are responsible or liable for private

activity on the moon and other celestial bodies (von der Dunk, et al., 2004). This might be accomplished by requiring permission for each private activity carried out on the moon and other celestial bodies, as was mentioned in the preceding chapter. The states would be subject to limitless responsibility for harm brought about by the activity of their private entities on the moon and other celestial bodies if such a policy were not adopted (Christol, 1980).

A transfer of ownership of the items launched into the moon and other celestial bodies from a private entity based in the launching state to a private entity based in a non-launching state will help the states explain their obligations and liabilities. Private companies engaged in activities on the moon and other celestial bodies would benefit from a defined national space law because they would be better aware of their responsibility for any harm caused by their operations. The expansion of operations on the moon and other celestial planets depends on the private sector investing more and more money under a clear and trustworthy regulatory framework. Private operations on the moon and other celestial bodies need the addition of state laws to meet the requirements of Article VIII of the Outer Space Treaty and the Registration Convention (Hertzfeld & Von der Dunk, 2005). The question of the registering state in the case of a transfer of ownership of a launched object from a private entity of the registering state to a private entity of another state arises because there is no provision in the space treaties for the transfer of registration from one state to another. The answer to this issue is crucial because it will determine which state has authority and control over these things and their employees. Although Article VIII grants jurisdiction and control to the state of registration, it would be absurd to claim that the original registering state remains the registering state and retains jurisdiction and control following the transfer.

The Outer Space Treaty's Article IX urges governments to take the necessary precautions to prevent detrimental contamination of the moon and other celestial bodies while also promoting the preservation of their natural environments (Kramer, 2014). One of the options accessible to the states is to implement national legislation in this area, despite the fact that it is not explicit about what constitutes suitable action. Similar to this, the international framework outlined in Article 11 of the Moon

Agreement requires additional domestic legal measures. In order to allow for the utilisation of lunar and other celestial bodies' natural resources in conformity with the international framework, these regulations must respect particular property rights to such resources. In addition to clarifying existing clauses, additional problems that have arisen as a result of potential substantial private activity on the moon and other celestial bodies must be resolved by national law. The main concerns are the protection of intellectual property rights (IPR), the settlement of disputes between private parties, funding activities on the moon and other celestial planets, and bankruptcy processes. The answer to these problems also entails a study of the current conventional domestic legislation to evaluate whether or not it may still apply in this unique situation. Finally, from the standpoint of spreading awareness of the space law, national space legislation is also necessary. Every ordinary man engaged in space endeavours would look forward to his state clarifying the law since city legislation is one approach to popularising space law in the domestic realm. The state has a responsibility to do its best to accommodate its subjects' needs since it is the defender of those people.

In light of the aforementioned elements, a state needs to create precise and comprehensive national space laws, regardless of whether it automatically recognises the terms of international treaties as part of domestic law (Umotong, 2004; Umotong, 2008). National law serves the goal of carrying out the international commitments of the state when it is necessary to translate international treaties into domestic areas (Umotong, 2013). When international treaties are immediately relevant, national law establishes the guidelines for their implementation. Stephan Hobe suggested that an explanatory protocol be written as an annexe to the Outer Space Treaty, requiring the nations to pass national space laws as a result of these circumstances. The United Nations' discussions have acknowledged the necessity for such national space laws. The Project 2001 guidelines and the Space Law Committee Report of the International Law Association (ILA) provide further justification for national space laws. Project 2001 placed a strong emphasis on the harmonisation of the national laws with a coordinated method while urging the adoption of national legislation to carry out the

international duties of permission and ongoing jurisdiction of non-governmental organisations (Jakhu & Pelton, 2017). In addition to promoting the adoption of national laws, the ILA Space Law Committee also issued a warning against the detrimental implications of excessive regulation on space trade.

2. THE US LEGISLATION

The United States is recognised as the first nation to pass a national space law. Although the United States has a number of laws governing space activities, they are geared towards the more efficient commercial use of outer space, the moon, and other celestial bodies, not the implementation of the space treaties' idealistic principles. This is expressly stated in nearly all U.S. space laws. The primary goal of U.S. policy is to promote adaptability and discourage government intervention in private space activities (Ostrom, et al., 1961). In addition, none of the U.S. space laws recognise the need for special regulations to regulate activities on the moon and other celestial bodies. Therefore, in the absence of special provisions, the moon and other celestial bodies are subject to the regime regulating outer space.

The NASA Act stipulates that all U.S. activities on the moon and other celestial bodies must be for benign purposes and the benefit of all humanity. As has been previously discussed, however, the US interpretation of benign purposes is non-aggressive purposes, not non-military purposes (Kramer, 2014). Therefore, only the aggressive military use of the moon and other celestial bodies is prohibited by the NASA Act. The 1998 Commercial Space Act prohibits the use of ballistic missiles in space activities in accordance with the provision regarding peaceful purposes. However, there is no mention of other types of weapons. In addition, the United Nations and the Group of Seven (G-7) nations negotiated the Military Technology Control Regime (MCTR). However, the MCTR suffered from a dearth of enforcement by the regime's parties. The relevance of the NASA Act's mankind provision is unclear, as there is no additional provision conferring the benefits of US activities on all of humanity.

The NASA Act requires cooperation between the United States and other states to carry out the activities specified by the Act and to apply the results peacefully. Under the Act's purpose and policy, there is a fleeting mention of the minimization of

environmental degradation (Shoemaker, 1998). It is unclear, however, whether its applicability is limited to the earth's atmosphere or extends beyond it to include the moon and other celestial bodies.

The NASA Act established the National Aeronautics and Space Administration (NASA) as a civilian agency to oversee United States-sponsored space activities (Erickson, 2005). Under the Act, NASA is deemed liable for all government-sponsored space activities. Both the NASA Act and the Commercial Space Act contain provisions to promote private space activities. These provisions are supplemented by the detailed provisions of Subtitle IX of Title 49 of the United States Code.

Title 49 authorises the Secretary of Transportation of the US Department of Transportation to regulate the operations of private space activities. The Office of Commercial Space Transportation of the Department of Transportation administers laws and regulations governing commercial space launch operations. For any space activity, Title 49 mandates that private operators obtain a licence from the Office of Commercial Space Transportation. This licence cannot be transferred to another individual unless authorised by the issuing authority. The licensee is required to acquire liability insurance or demonstrate financial responsibility to cover any damages his activity may cause. The United States government compensates any damage in excess of liability insurance or financial responsibility to the tune of \$1,500,000,000 (Cheema, 2020). Therefore, the United States has limited its liability to the amount that exceeds the liability insurance or financial responsibility of a private entity and does not exceed \$1.5 billion. By assigning a monitoring officer to oversee private activities, the Secretary of Transportation can exercise supervision and control over them.

The US space laws also contain provisions for the protection of intellectual property rights. They are primarily concerned with protecting inventions, trade secrets, and confidential information. Any invention made in a US spacecraft is considered to have been made on US territory, and both (inventions in outer space and inventions on US territory) receive the same level of protection. Section 305 of the NASA Act expressly provides for the government and private individuals to receive patent rights for inventions conducted in outer

space. In addition, NASA has devised flexible intellectual property rights (IPR) policies to encourage an increase in industrial participation in commercial space activities.

The preceding discussion demonstrates that the United States has adopted a strategy of protecting and promoting its individual interests rather than advancing the space treaty provisions. Despite the fact that the provisions of the space treaties to which the United States is a party are directly applicable in the United States' municipal sphere, they are not properly implemented due to the United States' strong desire to promote private commercial space activities. The licencing authority in the United States has adopted a permissive approach to promoting commercialization by authorising every applicant who is legally, technically, and financially qualified. This open-entry policy is entrenched in the fundamental philosophy that competition, rather than regulation, will serve the public interest of the United States. This initial US strategy contradicts the very premise of CHM.

There is also a conflict between US national law and international space treaty provisions. The clearest illustration of this contradiction is the limitation on the United States' liability for damage caused by private space activities. Neither the Outer Space Treaty nor the Liability Convention stipulate a maximal liability limit for damages caused by space activities. Other states are entitled to complete compensation for any harm caused to their citizens or property. Therefore, the self-declared limitation on liability by the United States could not be enforced in a claim for compensation by other states. In addition, the laws of the United States do not adequately address the various problems associated with private activities on the moon and other celestial bodies.

3. LAWS OF THE RUSSIAN FEDERATION

As the principal successor of the former Soviet Union, Russia inherited the majority of the Soviet Union's space launch capability. After the Cold War, it relied significantly on its commercial space activities to surmount its economic difficulties. In 1993, Russia enacted its first national space law (Lukowski, 2023). In contrast to American law, Russian law prioritises a variety of objectives, including the implementation of international space treaties to which Russia is a party. There are also

distinct provisions applicable to the moon and other celestial bodies, which is quite significant.

According to Russian law, activities on the moon and other celestial bodies must be conducted with the objective of fostering the well-being of Russian citizens and resolving the global problems of humanity (Naveed & Caixia, 2017). The Law of the Russian Federation Regarding Space Activity recognises the application of fundamental space law principles, such as the restriction of monopolistic activity, the protection of the environment, the promotion of international cooperation, and state responsibility for activities conducted under its jurisdiction, to the administration of activities on the moon and other celestial bodies.

The ambiguity regarding the application of the prohibition on creating unfavourable changes to the environment of the moon and other celestial bodies is resolved by establishing an explicit prohibition on creating unfavourable changes to the environment of the moon and other celestial bodies. In addition, the deployment of nuclear weapons and weapons of mass destruction into the orbits of the moon and other celestial bodies is strictly prohibited. Russian law also recognises the need to secure intellectual property rights on the moon and other celestial bodies.

The Russian Space Agency was established by the Law of the Russian Federation Concerning Space Activity to conduct space activities under the jurisdiction of the Russian Federation (Dempsey, 2016). The Russian Space Agency issues licences for all sorts of space-related endeavours. For conducting space activities, private entities must obtain liability insurance in the quantities mandated by the Russian government. If the insured amount is insufficient to cover the damages, recourse may be taken against the property of the relevant private entities. However, the Russian legislation makes no mention of the government's liability for private space activities.

The Russian Federation maintains jurisdiction and control over all space objects registered within its borders, as well as their crews. Even when space objects are located on the moon or other celestial bodies, the ownership of those objects is unaffected. These factors do not, however, confer any rights on the surface or subsoil of the moon or other celestial bodies occupied by

spacecraft. This demonstrates conclusively that Russian practise does not support private property claims over the moon and other celestial bodies.

The Russian legal system recognises and accords the uttermost importance to Russia's space treaty obligations and their implementation. In addition, there is a mention of the promotion of international cooperation to resolve legal issues. In contrast to the United States' policy of sheer commercialization of outer space, the moon, and other celestial bodies, it can be concluded that Russian laws attempt to implement some fundamental principles of space treaties.

4. AUSTRALIAN REGULATIONS

The examination of Australian space law has considerable importance given Australia's status as one of the limited number of signatories to the Moon Agreement. While there is currently no distinct regulatory framework for governing operations on the moon and other celestial bodies, the Space Operations Act of 1998 is applicable to the region beyond 100 kilometres above mean sea level, including the moon and other celestial bodies (Freeland, 2010). The goals outlined in the legislation acknowledge Australia's responsibilities in accordance with the United Nations space treaties and its commitment to fulfilling these duties.

The Australian law heavily relies on the knowledge and insights gained from the US Commercial Space Launch Act, reflecting a significant influence from the United States' experience in this domain (Chishti & Barberis, 2016). The regulation and oversight of private endeavours on celestial worlds, like the moon, are facilitated by the issuing of licenses. In order to conduct a private space launch in Australia, it is necessary to obtain both launch permission and a space licence. The aforementioned stipulations include the need for insurance coverage, financial obligations, adherence to Australian environmental legislation, and the safeguarding of public health, safety, and national security. The Act effectively outlaws the transportation of nuclear weapons or any other kind of weapon of mass destruction in outer space, including not only the moon but also other celestial entities, with the aim of preventing military operations in this domain.

The transfer of responsibility from the Australian government to commercial launch

operators is facilitated by the Space Activities Act, therefore aligning with the provisions outlined in the Responsibility Convention. In contrast to the United States, the Australian government does not assume joint responsibility with private organisations for the consequences arising from commercial space endeavours. In addition to the legal responsibility for harm inflicted upon third parties, the legislation imposes a duty on private businesses to provide compensation for any harm inflicted upon the Australian government. Private entities are obligated to get insurance coverage to protect against future losses. Alternatively, they have the option to self-insure by demonstrating that they own enough assets to cover any prospective liabilities. The Act further provides provisions for conducting investigations into accidents and events, with the aim of mitigating the likelihood of future occurrences.

The law of Australia, similar to that of the United States, places a greater emphasis on the economic use of outer space, the moon, and other celestial entities. The current discourse lacks consideration for significant matters such as safeguarding the lunar environment and other celestial entities, implementing the concepts of common heritage of humanity and cultural heritage management, ensuring intellectual property rights protection, and several other pertinent concerns. Hence, despite its status as a signatory to the Moon Pact, Australia has neither effectively addressed the deficiencies within the pact nor enacted its terms at the domestic level. The Australian government's failure is apparent in its lack of recognition of the imperative need for an independent regulatory framework to control operations on the moon and other celestial bodies.

5. THE UK OUTER SPACE ACT 1986

The UK Outer Space Act, despite being a relatively short piece of legislation, contains more provisions pertaining to the implementation of space treaty obligations when compared to the laws of the United States and Australia. The state responsibility outlined in Article VI of the Outer Space Treaty was the driving force behind the passage of British legislation. The Outer Space Act imposes a uniform regime on outer space, the moon, and other celestial bodies (Li, 2023). The Act grants the Secretary of State the authority to licence

private space activities. The private entity must convince the Secretary of State that the activities authorised by the licence are consistent with the United Kingdom's international obligations.

In pursuance of the United Kingdom's international obligations, the Act stipulates that the licensee must prevent the contamination of outer space and avoid interfering with the peaceful exploration and use of outer space by others. Any violation of the United Kingdom's international obligations leads to the revocation of the licence. Similar to other municipal regulations, private entities are required to acquire insurance coverage to compensate for any damage their activities may cause. The private entity is responsible for reimbursing the compensation paid by the United Kingdom government due to the liability it incurred under the Liability Convention for private space activities. In contrast to the United States, the liability of a private entity in the United Kingdom is unlimited, as the Space Activities Act requires the government to indemnify it for any compensation paid on behalf of private entities. These factors demonstrate that British law attempts to establish a balance between space treaty obligations and commercial necessity.

6. CONCLUSION

The preceding discussion demonstrates that the national response to the need to regulate activities on the moon and other celestial bodies is extremely inadequate. There are not even a handful of states with minimal national laws governing space activities (Umotong, & Udofia, 2021). Although early space explorers have enacted some fundamental laws governing space activities, none of them have established a separate regime to govern activities on the moon or other celestial bodies. While the laws of the United States and Australia are solely focused on commerce, the laws of Russia and the United Kingdom attempt to accommodate certain space treaty principles.

Nigeria has not enacted a national law governing activities in outer space, the moon, and other celestial bodies, despite the significant increase in space-related endeavours. Since the drafting of national space legislation is mandatory, the Nigerian Parliament must investigate the unique economic, social, and political conditions prevailing in Nigeria, as well as the experiences of other nations that have

already enacted national space legislation. National space legislation should begin with international space covenants, such as the Moon Agreement. As Nigeria attempts to establish a balance between space treaty principles and commercial requirements without placing an inordinate emphasis on commercial space activities, the Russian and British experiences are highly relevant. Moreover, Nigeria should consider a special regime to regulate activities on the moon and other celestial bodies, either through the enactment of separate legislation or the incorporation of certain provisions into the national space law.

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