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Challenges of Legal Liability in Outer Space Exploration

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ABSTRACT

The advent of interstellar travel in the twenty-first century has witnessed a dynamic shift in the landscape of space exploration, marked by the extensive collaboration between public and private entities. This transformation, exemplified by companies such as SpaceX, Virgin Galactic, and Blue Origin, has seen private enterprises outpacing their public counterparts in driving innovation and advancement within the field. Public-private partnerships have become a cornerstone of space exploration, with NASA collaborating with seven private companies, and even the Indian Space Research Organisation (ISRO) engaging nearly 500 private enterprises.

This article critically examines the emerging challenges in legal liability, particularly in the context of common law nations like the United States and India. While international space law, including the United Nations treaties on outer space, provides a framework for governing activities in space, it faces limitations in its enforceability. Furthermore, the unique characteristics of space, such as the absence of recognised sovereign territory, raise questions about the applicability of tort law.

The paper explores liability laws within the international legal system and dissects the complexities surrounding their implementation. It discusses the United States' use of maritime law as a model for the development of tort law in outer space, highlighting the need for the establishment of space-worthiness standards to govern individual liability and address issues like negligence.

The focus of the paper then shifts to the applicability of torts to both public and private contractors involved in space exploration. Drawing from key legal cases, such as the Boyle vs. United Technologies case, it probes the expanding concept of the government contractor defence (GCD) and its potential implications. Additionally, the concept of vicarious liability is discussed, as it holds private corporations accountable for the actions of their employees, a principle that could play a crucial role in space-related tort cases.

The article underscores the pressing need for comprehensive and internationally recognised tort laws to govern liability in space exploration. It highlights the evolving legal landscape in India, which is adapting its legal framework to accommodate the growing involvement of private enterprises in space endeavours. By examining the challenges and legal

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precedents in this emerging field, this article contributes to the ongoing discourse on ensuring equity, justice, and legal clarity in outer space activities.

Keywords: *Torts, Space Exploration, Liability.*

I. INTRODUCTION

With the advent of interstellar travel in the twenty first century, the participation of private contractors collaborating with public actors have become a common sight in nations such as the United States, it can also be said that in the grounds of innovation and advancement, the private sector initiatives have largely outpaced the public sector initiatives. Companies such as SpaceX, Virgin Galactic and Blue Origin are in a private space race to make commercial space flight available to the public with the use of reusable shuttles and extremely powerful launch vehicles like the SpaceX Falcon 9. These private companies regularly enter into contracts with state organisations such as NASA to build advancements in the key areas of space exploration capabilities. As of 2023, NASA is in collaboration with 7 private companies to collaborate in the areas of development of launch vehicles, commercial space flight, Autonomous machinery and flight capabilities, astronaut crew kits etc. Even the Indian Space Research Organisation (ISRO) is not lagging far behind in outsourcing operations to private companies, with the success of Chandrayaan 3, India's private space sector is only on its way ahead to generate a huge boost in revenue generation via investments, ISRO is already working with roughly 500 private enterprises on a limited basis. The European Space Agency, which is a space partnership program of several common law countries also actively contracts several private companies to manufacture parts for several missions. Hence it can be rightly said that the advent of mass partnerships between government and private contractors is likely to cause an insurgence in a number of cases involving corporate criminal liability of private and government contractors. Even though the cases of crimes in space are far and few, the international and domestic legal system is ill-equipped to deal with such cases. It has been a debate for quite a long time amongst the legal community regarding the applicability of torts as an instrument of criminal procedure for crimes in outer space.

This essay hence focuses on the cases in common law nations such as United States, where the cases instilling torts against private contractors in the field of defense are the most prevalent, and examine the future scope of the applicability of torts in outer space exploration.

II. LIABILITY LAWS IN THE INTERNATIONAL LEGAL SYSTEM

Currently the UN governs law in space through five treaties, commonly referred to as the five

united nations treaties on outer space, which are “the outer space treaty”, “The rescue agreement”, “the liability convention”, “the registration convention” and the “moon agreement”⁴. However the problem with these agreements is that they are not legally binding since these are resolutions adopted only by the general assembly and the Security council is the only organ of the United Nations which has the power to pass legally binding agreements⁵. The lack of discussion from the security council has rendered these agreements as only verbal contentions amongst nations with little to no chance of further discussion or ratification, the United States itself is not a ratifier of many of these agreements. The next best source of governing bodies outside of the contention of “sovereign territory” is international maritime law. The current system of international maritime law is the United Nations Convention on the Law of the Sea (UNCLOS), which was adopted by the United Nations in 1982, however the United States itself is not a signatory to the same and hence as a result the US courts are responsible for the creation of their own maritime law.

The 1967 UN treaty on principles governing the activities of states in the exploration and use of outer space (Outer space treaty) loosely defines space as territory beyond the sovereign claims of any nation. Hence the applicability of torts gets challenged in the nature of the definition especially for a common law nation such as the United States due to the scope of torts being limited to issues of criminal liability arising within the sovereign boundaries of the nation. In *Smith Vs United States*⁶, the court held that the Federal Torts Claims Act (FTCA) does not apply to tortious acts or omissions applies to all “foreign nations” including “Antarctica” which has no recognised government. The applicability of torts in incidences related to harm of astronauts by other astronauts sees more limitations from the implications of Article VI and VII of the Outer space treaty to which many common law nations such as the United States, United kingdom and India are ratifiers of. Article VI of the Outer space treaty states that a launching state is “internationally liable for damages to another state party to the treaty or to its natural or juridical persons”, however the article also states that the convention does not apply to the “either of the nationals of the launching state”. Hence an astronaut sustaining harm or being killed due to the negligence of either another US astronaut or a foreign astronaut, the family of the defendant could not file a claim for damages under the liabilities convention because the United States was a launching state.

Maritime law offers interesting insights to the question of how individual liability would look

⁴ UNOOSA, UNITED NATIONS OFFICE FOR OUTER SPACE AFFAIRS SPACE LAW TREATIES AND PRINCIPLES, <https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties.html> (last visited Sep 12, 2023).

⁵ Article 24, 25 UN charter

⁶ *Smith v. United States*, 507 U.S. 197 (1993)

in outer space in comparison to Earth. Under maritime law, “the shipowner must furnish a vessel that is seaworthy in all respects”⁷. The concept of seaworthiness or “spaceworthiness” in the case of this paper, would be a useful addition to international outer space laws to establish the concept of individual criminal liabilities and the extent of the applicability of fault (eg. Contributory negligence, fellow servant rule, assumption of risk etc.) in outer space arising from the negligence of the vessel, to assist in the concept of the development of the law of torts in outer space.

III. TORTS APPLICABILITY TO PUBLIC AND PRIVATE CONTRACTORS

As established in the paper previously in the introduction, many private contractors are involved are involved in the creation of parts that contribute to the formation of a full “spaceworthy” vessel. These parts are created in related to the standards of manufacturing and resultant quality tests that are carried out by the contracting party, like the government. Design faults and oversights that occur during the manufacturing process which result in injury or deaths, and following legal liability is no stranger to the courts of law. However in the case of spacefaring vessels, these could prove much more deadly and hence what legal liability looks like in space needs further debate.

In 1988, following the death of a marine helicopter pilot operating a Sikorsky aircraft, and in the resulting civil action, the court of appeal held that Sikorsky could not be held responsible for deaths resulting from design flaws under Virginia tort law because the company met the necessary requirements of manufacturing the aircraft set by the defense contractors⁸ The supreme court affirmed that the acquisition of military equipment by the US government is of “unique federal concern”⁸ The *Boyle vs United technologies* case was instrumental to the Supreme court in answering questions related to upholding the prevalence of tort law in holding private contractors liable. In federal procurement contracts, such as those of military equipment, the uniquely federal interest of the government at stake is that the contractors would simply raise their prices to cover for potential cost of liabilities, and hence the passing of the cost of liabilities back to the government.⁹

The *Boyle vs United Technologies* case could hence be an important roadmap in defining legal questions related to the case of defining of the scope of legal liabilities in terms of if commercial entities like private or government defence contractors taking legal responsibility. As it opens

⁷ *Mitchell v. Trawler Racer, Inc.*, 362 U.S. 539.

⁸ *Boyle v. United Technologies Corp.*, 487 U.S. 500 (1988)

⁹ Victoria Muth, *Amending the Government Contractor Defense: A Legislative Solution to Protect the Intelligence Contractors Taking the Fall for Controversial U.S. Government Policies*, 47 PUB. CONT. L.J. 123 (2017).

up the possibility of courts ruling in the favour of the commercial entities, justifying the ruling as that of “unique federal concern”, hence rendering private contractors involved in building spacefaring goods immune from deaths caused due to design flaws or negligence. However the Boyle vs United Technologies case prompted the court to set up mechanisms to preempt state tort law claims brought against private military contractors for equipment defects, the mechanism now dubbed as “government contractor defense”. The court proposed a three factor test to determine where the GCD would apply (1) whether the United states approved reasonably precise specifications (2) whether the contractor followed the specifications (3) whether the contractor warned the United States about the dangers of the equipment’s use known to the contractor.

However lower courts have regularly struggled to consistently apply the GCD¹⁰. For example in Hudgens vs Bell Helicopters, the court expanded the scope of GCDs so its available to government contractors whose liability ensued from performance contracts and not just procurement contracts¹¹. The GCD was further expanded in Bentzlin Vs Aircraft Co.¹² where the case diverted from Boyle in two key ways. First the district court recognised a defence based on the combatant activities exception of the FTCA and secondly, the court for Bentzlin adopted a defense based on whether imposing liability on the military contractor would serve the three primary purposes of tort liability¹³.

The functions of GCDs could hence further expand in the applicability of torts where space exploration is involved due to the very nature of the equipment in use itself, deaths resulting not from negligence but from technical glitches, unforeseen situations, untested field equipment etc that could result in injury or deaths could be very common. However government contractors instilling the privilege of state secrets doctrine and “government contractor defense” can undermine the applicability of torts in the future in the field of liabilities arising from deaths during space exploration. Already after Boyle, Hudgens and Bentzlin, lawsuits against private contractors became far more difficult to win due to the narrowed down scope of liability of the private contractors as long as they meet government specifications. For example, in 2003, the space shuttle columbia collapsed as it re-entered Earth’s atmosphere, killing all seven astronauts onboard, the families of these astronauts had the oppurtunity to sue the private contractors but chose not to due to the slim chances of winning.

¹⁰ **Tort Suits against Federal Contractors:** An Overview of the Legal Issues [notes] / Chu, Vivian S.; Manuel, Kate M.

¹¹ *Hudgens v. Bell Helicopters/Textron*, 328 F.3d 1329 (11th Cir. 2003)

¹² *Bentzlin v. Hughes Aircraft Co.*, 833 F. Supp. 1486 (C.D. Cal. 1993)

¹³ ID at 12

In India, the tort law of vicarious liability states that a private corporation can be held liable for the tortious acts of its employees performed during the course of their employment. The following principles of vicarious liabilities were established in *Laxmi Engineering Works v. P.S.G. Industrial Institute* case 1995¹³. A temporary teacher contracted by a Laxmi Engineering works for practical training of students, during of the training sessions a student was injured due to the negligence of the teacher. The supreme court held that Laxmi Engineering works was indeed vicariously liable for the teacher's negligence. The court established the principle that an employer (corporation) can be held liable for the wrongful acts or negligence of its employees when they occur in the course of employment¹⁴. The tort of vicarious liability is an essential legal instrument for deaths and injuries occurring due to the personal negligence, where the company would be held liable, in this paper's context, companies/contractors involved in space exploration and related activities, either in space or on ground.

IV. POSITION IN INDIA AND CONCLUSION

In a reality where space law is no more science fiction, and a need of an international legal system to uphold equality, equity and justice in outer space, in an unforgiving and dangerous environment becomes more and more clear day by day. The system of common laws was inspired by the same principles of equity and justice however tort laws regarding liabilities towards private contractors engaging in manufacturing of or parts of spacefaring vessels are far and few, due to two key factors. First, the contention of the requirement of better developed tort laws with clearly stated exceptions and implications of the same on private contractors and spacefaring individuals are only prevalent in the United States and very few in other common law countries such as India, where the manufacturing sector for both defence equipment and spacefaring vessels is still largely focused on the public sector via organisations such as the Defense Research and Development Organisation(DRDO) and Indian Space Research Organisation(ISRO), private contractors involved in the manufacturing of defence products and spacefaring vessel parts such as for the rocket engines and satellites is a very recent phenomenon. Secondly as highlighted before in this paper, the lack of internationally accepted definitions, liability scopes and "sovereign boundaries", and also the lack of internationally ratified documents broadens the debacle of tort applicability in outer space.

India is a signatory and ratifier to all 5 of the UN outer space treaties, for the expansion of the legislative and legal purview of space operations in India, in 2017 the Draft Space activities Act

¹³ *Laxmi Engineering Works v. P.S.G. Industrial Institute*, 1995 AIR 1428, 1995 SCC (3) 583

¹⁴ *Id*

of 2017 was introduced which pledges two fundamental reasons of space exploration the first is for peaceful objectives, and the second is for national security reasons. Another characteristic of the law is that it compels the government to establish broader policies while not holding them directly responsible for space infrastructure spending. India has already formed the Indian National Space Promotion and Authorization Center in line with the principle of the registration convention and Article VI of the Outer space treaty for licensing, permitting and oversight of private enterprises manufacturing and operating space products. Even though India has a lack of cases of torts, examples and learnings derived from other common law nations such as the United States, and preserving India's own principle of tort laws in product and vicarious liability should be the way ahead for both India and the world.

V. REFERENCES

1. United Nations Office for Outer Space Affairs, Space Law Treaties and Principles, <https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties.html> (last visited Sep. 12, 2023).
2. U.N. Charter art. 24, 25.
3. *Smith v. United States*, 507 U.S. 197 (1993)
4. *Mitchell v. Trawler Racer, Inc.*, 362 U.S. 539.
5. *Boyle v. United Technologies Corp.*, 487 U.S. 500 (1988)
6. Victoria Muth, Amending the Government Contractor Defense: A Legislative Solution to Protect the Intelligence Contractors Taking the Fall for Controversial U.S. Government Policies, 47 PUB. CONT. L.J. 123 (2017).
7. Tort Suits against Federal Contractors: An Overview of the Legal Issues [notes] / Chu, Vivian S.; Manuel, Kate M.
8. *Hudgens v. Bell Helicopters/Textron*, 328 F.3d 1329 (11th Cir. 2003)
9. *Bentzlin v. Hughes Aircraft Co.*, 833 F. Supp. 1486 (C.D. Cal. 1993)
10. *Laxmi Engineering Works v. P.S.G. Industrial Institute*, 1995 AIR 1428, 1995 SCC (3) 583.
