PRIVATE SPACE LICENSING AT UNITED STATES AND AUSTRALIA: A COMPARATIVE ANALYSIS

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ABSTRACT:

The following paper is a comparative analysis which will basically aim at tracing down the laws regarding space insurance in Australia and the United States of America so as to establish a comparison. The initiation of the paper will begin with the understanding of insurance and connecting it to space law. Taking into consideration the various launchings and other space activities, the liabilities will be analyzed and accordingly the need for insurance will be set out. While introducing to the paper, glance to the Challenger accident will be made which will emphasize upon the need for liability and insurance regarding space law.

Before starting off with the comparison, a detailed study of the space insurance laws of the individual countries will be looked into. With this, an overall study will be made as to the private players in the space insurance policies framework.

INTRODUCTION:

Insurance is one of the primary requisites for conducting any kind of activity in outer space. The space technologies pile up challenges for the insurance companies as the insurable situations arise from many functions. Such situations arise in the outer space as well as the ground while launching of a satellite. Insurance becomes a necessary requirement also when we look into the 'third party liability' and such liability exists in satellite as well as outer space. Satellite insurance also ensures safety and precautions for the persons as well as ground property. There are also space debris hazards for which safety precautions are necessary. The space debris hazard has already introduced new safety issues for consideration by national space agencies, spacecraft designers, space station manufacturers, scientists, and insurance underwriters.[1]

PRIVATIZATION OF COMMERCIAL SPACE ACTIVITIES:

Prior to 1980, there was not a single space insurance policy to be found. It was because maximum satellites were launched by the Government and were self insured. In the early 1980's, the commercial satellite industry began to resort to insurance as the main risk management tool which initially put the insurance companies in serious losses due to launch failures and the loss of payloads.[2] Inactive payloads are those former active payloads that can no

[1] HOWARD A. BAKER, 'SPACE DEBRIS: LAW AND POLICY IN THE UNITED STATES' [1989] U. Colo. L. Rev.
[2] Sandeepa Bhat B., *Space Law in the Era of Commercialisation* (1st, Eastern Book Company, Lucknow 2010)

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longer be controlled by their operators[3] and such payloads give rise to losses. Some years ago, satellite insurance cost less than 10% of the value of the satellite, and all commercial satellites were routinely insured but, following a series of launch failures, insurance costs rose above 20% and have since remained high.[4]

According to the information provided by the United Nations, in 1996, global commercial utilization of space hardware, including telecommunications facilities, and the development of infrastructure elements, such as the manufacture of launch vehicles, satellites and ground equipment, represented 53 percent of the space industry, and for the first time, commercial revenues surpassed governmental expenditure.[5]

Private enterprises are found to be interested in investing their services on the commercial lines of space technology. In order to fulfill this motive, such enterprises have tried their hands on proceeding towards such services in outer space in various manners out of which one is provision of space insurance.

In order to move on to the analysis of private space insurance, it is necessary to understand the insurable activities of space and satellites. One out of such insurance activities is the accumulation of space debris. All man-made debris orbiting in outer space is generated by manned and unmanned space programs and space debris falls into four categories: inactive payloads, operational debris, fragmentation debris, and microparticulate matter[6]. Space debris can either be stagnant or operational in nature. Un-operational or stagnant space debris is one which cannot be controlled by the operator anymore.

THE CHALLENGER DISASTER OF 1986:

Outer space has a close connection with the satellites which is why satellite insurance is also a necessary component when it comes to covering up of liability. The pre-launch satellite insurance covers liability insurance as well as property insurance whereas post-launch satellite insurance is exempted from covering the liability insurance.

In the history of outer-space activities, the challenger disaster between NASA and Airenespace had left a recognizable mark due to the explosion. NASA and Challenger had left their respective launch pads on 28th January of 1986. Moments later, a faulty 0-ring caused a spectacular explosion, killing all seven astronauts and ending NASA's misguided

[3] Howard A. Baker, 'Space Debris: Law And Policy in the United States' [1989] U. Colo. L. Rev.
[4] N. Jasentuliyana, 'Space Commerce on a Global Scale' [1990] J.L. & Tech.
[5] Dr Huang Huikang, 'Space Law and the Expanding Role of Private Enterprises, with Particular Attention to Launching Activities' [2001] Sing. J. Int'l & Comp. L.
[6] Howard A. Baker, 'Space Debris: Law And Policy in the United States' [1989] U. Colo. L. Rev.

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efforts to develop an economically viable commercial launch system[7]. Because of this explosion, an executive decision was taken and private players were invited to bring out further developments in the commercial activities in outer space. This was a time when the private entrepreneurs were allowed to enter the market in space but, at the same time, the space insurance premiums were increased and because of this many problems popped up. The basic reason for such cropping up of problems was the incompatibility of the launch industry with the insurance industry. That was a time when the Government was self-insuring their own activities

THE AUSTRALIAN PERSPECTIVE:

For the country that some regard as the third in the history of the world to launch a satellite into outer space, Australia probably has the most comprehensive legal and regulatory regime for private space activities in the Pacific Rim region, with the possible exception of the United States.[8] The Space Activities Act was enacted in 1998 by the Commonwealth Parliament of Australia. Apart from mere implementation of the various international legal principles envisaged in different treaties, such an enactment has also given rise to a regulatory framework which turned out to be an evolution with regard to private space launch activities. In conformity with the Space activities Act, 1998, the Space Activities Regulations came up in 2001 in order to handle the administrative regulatory framework of the space activities. Two key concerns of the Space Activities Act 1998 are to protect public safety and property during the conduct of launches, and to require that launch operators are able to compensate aggrieved parties in the event of launch accidents by insurance or by assuming direct financial responsibility.[9]

According to the Space Activities Act, 1998, a launch operator is required to demonstrate how well they can comply with the responsibility requirements put forth by an approved insurance compliance plan. Such an approval is given as per the terms laid down in the Space Activities Regulations, 2001. The Space Activities Act requires the launch operator to hold insurance policies to cover against any liability the Government and the launch

[7] Barton E. Showalter, 'In Space, Nobody Can Hear You Scream "Tort!"' [1992-1993] J. Air L. & Com.

[8] Ricky J. Lee, 'Current Status and Recent Developments in Australia's National Space Law and Its Relevance to Space Law And Space Activities in The Pacific Rim' [2009] 35 J. Space L.

[9] The Space Licensing and Safety Office Department of Innovation, Industry, Science and Research, 'Introduction to the Australian Space Safety Regime' [2009], available at <http://www.space.gov.au/SpaceLicensingSafetyOffice/Documents/Australian_Space_Safety_Regime_Overview.pdf>

operator may have to pay compensation for to the third parties.[10] It is due to the requirement of high amounts of compensation to be paid to the third parties that the launch operators prefer insurance over assessment of available assets to use for compensation. It becomes difficult to manage when the amount of compensation exceeds the available assets.

The amount of the insurance cover required is either a $750 million, as indexed from time to time, or the amount of the "maximum probable loss" (MPL) as determined by the Australian Government.[11] The word ‘maximum’ takes the amount of apprehended loss to a level higher than the mere probability of loss. Probable loss is estimated at its maximum levels during the estimation of MPL. The Maximum Probable Loss methodology set out by the Australian Government determines the MPL for a single launch of satellite. The application of such a methodology becomes a mandate so as to determine the amount of insurance or compensation required to be covered. It is also a requisite that the calculation of such MPL has to be done by an individual independently qualified and sufficiently experienced in the application of such a methodology. Before calculating the total MPL, it is necessary that the third party casualty losses, third party property losses and environmental damage are calculated separately. It is also necessary to calculate the pre-launch ground property loss separately from the post-launch losses in order to determine the adequate amount of compensation or insurance.

Third party risks are allocated between the launch operator and the government on a horizontal basis, consisting of two layers: (i) first layer-insurance or financial requirements, and (ii) second layer-government assumption.[12] It is mandatory for the launch operator to acquire liability insurance in order to get shielded against any payment of any amount of compensation to third parties that may be caused by the launch. The Australian Government will require the party responsible for space activity to be liable to pay compensation for damage caused to persons or property by a space object, and will require the responsible party to carry third party insurance or demonstrate capacity to assume direct financial responsibility.[13] Because it is mandatory for the launch operators to pay the compensation for

[10] Ricky J. Lee, 'Current Status and Recent Developments in Australia's National Space Law and Its Relevance to Space Law And Space Activities in The Pacific Rim' [2009] 35 J. Space L.
[11] Ibid.
[12] Sandeepa Bhat B., *Space Law in the Era of Commercialisation* (1st, Eastern Book Company, Lucknow 2010)
[13] The Space Licensing and Safety Office Department of Innovation, Industry, Science and Research, 'Introduction to the Australian Space Safety Regime' [2009], available at <http://www.space.gov.au/SpaceLicensingSafetyOffice/Documents/Australian_Space_Safety_Regime_Overvie w.pdf>

any loss commenced on property, persons or aircraft due to their functioning, it is necessary for the launch operators to get themselves licensed. This is because once the launch operators get themselves licensed, they can cover up a part of their third party liability by the insurance as their liability remains limited to the amount of insurance.

THE PERSPECTIVE IN UNITED STATES OF AMERICA:

In the United States, the National Aeronautics and Space Act (NAS Act) was enacted in 1958. This Act has a limited applicability in case of space activities which are civil in nature. Space debris, as discussed above, has a high probability of being counted into the category of environmental hazard as it is detrimental to the environment. The NAS Act does not cover such environmental hazards either in the main statute or in the further enacted corresponding regulations. Reference to space debris in context to the environment is not made; therefore such cases should be referred to through the National Environmental Policy Act (NEPA). All NASA actions which may have an impact on the quality of the environment are subject to either an environmental assessment (EA) or an environmental impact statement (EIS)[14]

The Arms Export Control Act (1976) (U.S.) and the International Traffic in Arms Regulations (ITAR) in the US make provisions so as to include satellites and other specifically designed or customized for spacecraft or spaceflight on the U.S. Munitions List in an efficient manner. As a result of this they are not included in the list of exports for launch as long as they do not have an approval from the government.[15]This measure has also been much appreciated by other countries like India, Australia, China etc. and it has played a remarkable role on the commercial lauch services related provisions.[16] At an international level, the impact of this measure has been reflected by the adoption of the Wassenaar Agreement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies[17] and the Missile Technology Control Regime (MTCR).[18]

[14] 14 C.F.R. § 1216.301(b) (1988).

[15] H. Peter Van Fenema, The International Trade In Launch Services: The Effect Of U.S. Laws, Policies And Practices On Its Development at [1999] 112-114.

[16] Steven R. Freelandand Ricky J. Lee, The Impact of Arms Limitation Agreements and Export ControlRegulations on Launch Activities, [2002] 45 PROC. COLL. L. OUTER SPACE 321.

[17] Wassenaar Arrangement on Export Controls for Conventional Arms and DualUse Goods and Technologies [1996], available at http://www.wassenaar.org [hereinafter Wassenaar Arrangement]; the Missile Technology Control Regime 26 L.L.M. 539 (1987).

[18] Ricky J. Lee, 'CURRENT STATUS AND RECENT DEVELOPMENTS IN AUSTRALIA'S NATIONAL SPACE LAW AND ITS RELEVANCE TO SPACE LAW AND SPACE ACTIVITIES IN THE PACIFIC RIM' [2009] 35 J. Space L.

The business that is presently carried out by the private enterprise in the US is that of launching spacecraft and the first commercially licensed spacecraft was the *Starfire* which was launched on March 29, 1989, by the Space Services, Inc. ("Space Services").[19] This is governed by the respective domestic laws of the US which includes common law tort theory federal regulations. The theories of domestic tort include negligence, strict liability for a peculiarly dangerous activity and *res ipsa loquitur*.[20]

After the Challenger accident, USA has now began to recognize the value of increasing its strength in the private space industry. The federal government too decided to take certain measures such as adoption and enactment of certain new policies for further government launches.[21] Following this, the first measure that was taken was the restriction of NASA to launch government payloads.[22] This action left the commercial customers of NASA with no other option other than to look for alternatives for obtaining access to outer space.[23]

In order to increase the efficacy of the legislations in the US, there were several amendments that were made to the Commercial Space Launch Act in 1988. The Launch Amendments comprises of several provisions that affect a licensee's liability with respect to third parties such as the limiting definition of 'third party as under Section 2603(11) of the Launch Amendments, Section 2615 outlines the licensee's liability insurance requirements such as limitations on insurance coverage, reciprocal waivers of claims among the launch services organizations, indemnity by the federal government for third party claims exceeding the required amount of insurance coverage, and several other options available to the Secretary of Transportation.[24] Similarly, the Launch Amendments also place a $100 million cap on the liability insurance that is required of licensees for claims made by the United States with respect to "loss of or damage to property of the United States resulting from activities carried

[19] Van C. Ernest , Third Party Liability of The Private Space Industry: To Pay What No One Has Paid Before, [1990-1991] 41 Case W. Res. L. Rev. 503.
[20] Bosco, Manufacturer Liability to Third Parties for Outer Space Activities, [1986] 7 NORTHROP U.L.J. 1, 30-51.
[21] Van C. Ernest , Third Party Liability of The Private Space Industry: To Pay What No One Has Paid Before, [1990-1991] 41 Case W. Res. L. Rev. 503.
[22] On August 15, 1986, President Reagan announced, "NASA will no longer be inthe business of launching private satellites Instead, NASA and the four shuttles should be dedicated to payloads important to national security and foreign policy, and even more, on exploration, pioneering and developing new technologies and uses of space." Foley, Reagan Bars Shuttle from Competing for New Satellite Launch Contracts, AVIATION WEEK & SPACE TECH., Aug. 25, 1986, at 22, 22.
[23] At the time of this order, forty-four companies held launch service or letter agreements for space shuttle satellite launches. "The damages to these companies have in most cases exceeded $100 million on an individual basis, as a result of such expenses as non-usable Shuttle-unique\ hardware, software, equipment and documentation " H.R.REP. No. 639,
[24] 49 U.S.C. § 2615 (1988).

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out under the license in connection with any particular launch."[25] Yet another requirement of the Launch Amendments id the liability insurance section that requires reciprocal waivers of claims between the licensee and "its contractors, subcontractors, and customers, and the contractors and subcontractors of such customers,"[26]and the Secretary of Transportation, representing "the United States, its agencies involved in launch services, and contractors and subcontractors involved in launch services."[27] Thus, the licensee's insurance will also cover losses incurred by any of these organizations during the time of launch operation, regardless of fault, by agreement, due to the immunity of the licensee and any other organization assisting in the actual launch from each other's claims.[28]

Yet another legislation under the domestic law governing private space launches is The Commercial Space Launch Act, 1984 which authorizes US, under the auspices of the Office of Commercial Space Transportation ("OCST") to make decisions with respect to licensing of commercial launch sites; payload review etc. All decisions are made only in consultation with the OCST, which yet again grants permission subject to various mission and safety approvals.[29] Though these legislations governed in an efficient manner to an extent, providing an excellent legal foundation for the building up of a commercially successful private space enterprise, these had a few lacunas too which required further delving into. The type of licenses, their term and the respective authorities and legislations from where they should be obtained from should be also be carefully looked into before every launch as this proves to be the crux in the determination of the success of privates space licensing.[30]

COMPARISON AND CONCLUSION:

On establishing a comparison between the private insurance policy in Australia and in the US, it is witnessed that the US has given a greater leverage to private sectors than the governmental sectors. The various statutory provisions in the US have set an upper limit to the undertaking of insurance by the Government which is $1,500,000,000. Any liability beyond this amount comes up to the private insurer. However, Australia does not fix any cap of liability upon the Government. The Australian Government takes up the entire

[25] 49 U.S.C. § 2615(a)(1)(B) (1988).
[26] 49 U.S.C. § 2615(a)(I)(C).
[27] Id. § 2615(a)(1)(D).
[28] Van C. Ernest , Third Party Liability of The Private Space Industry: To Pay What No One Has Paid Before, [1990-1991] 41 Case W. Res. L. Rev. 503.
[29] 14 C.F.R. § 415.5 (1990).
[30] Allen Duane Webber, Launching The Rocket Industry In Theunited States: Domestic Regulation Of Private Expendable Launch Vehicles, [1984-1985] 50 J. Air L. & Com. 1.

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responsibility of the maximum probable loss when it comes to the third party liability. The launch operator or private insurer is held responsible in Australia only in cases where the accident has occurred due to some violation of the provisions or guidelines laid down by the Government.

Overall, it is witnessed that the policies regarding space insurance are extremely affected by the unsuccessful launches and high losses due to the same. The concept of insurance works both ways; for the satellite operator and the third party as well. While launch service providers have resorted to insurance less frequently than their clients, space vehicle insurance constitutes an alternative risk management solution which offers protection to the carrier during the riskiest phase.[31] Today, with the increasing rate of space debris, the demand for space insurance has increased which further aids the functioning of private players.

[31] Sandeepa Bhat B., *Space Law in the Era of Commercialisation* (1st, Eastern Book Company, Lucknow 2010)

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