Strict Liability and State Indemnification under Japanese Law

The New Space Activities Act Compared with the Scheme on Compensation for Nuclear Damages

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I. Introduction: the Enactment of the Space Activities Act

Japan has been very restrictive in introducing strict liability rules in tort law. In the narrow meaning of the word, strict liability is a rule to impose liability solely based on the occurrence of damage.[1] The Products Liability Law of 1994,[2] for example, does not fall under this category because liability under that law depends on the finding of a defect in the product. Common law countries have developed a doctrine whereby strict liability is appropriate when the cause of damage is an ultrahazardous or abnormally

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1 On the definition of "strict liability", see B. A. Koch/H. Koziol, Comparative Conclusions, in: Koch/Koziol (eds.), Unification of Tort Law: Strict Liability, 395 [2] (Kluwer Law International 2002).

2 For the Japanese Products Liability Law, see L. Nottage, Product Safety and Liability Law in Japan (Routledge Curzon 2004).

dangerous activity.[3] A more or less similar concept has been adopted by civil law jurisdictions as well, as is documented.[4] The concept itself is not unknown in Japan.[5]

In November 2016, the Diet approved the Act Concerning the Launch and Control of Satellites (hereinafter, the "Space Activities Act"). It includes a provision imposing strict liability on the entity launching a satellite for damage inflicted on the surface of the Earth or to an aircraft in the air (see II.2. below). The Space Activities Act further provides for state indemnification in the event damage occurring on the Earth's surface exceed the insured amount. A careful study of this Space Activities Act is of interest: Firstly, it allows us to see on which exceptional occasions Japan introduces a strict liability rule. Secondly, a closer comparison of the Space Activities Act with existing strict liability statutes reveals that such statutes, in fact, vary significantly in their details. In particular, a comparison with the Law on Compensation for Nuclear Damages is useful in two regards. Firstly, it served as a model for drafting the Space Activities Bill. Secondly, and more importantly, the unfortunate incident of the Fukushima Daiichi Nuclear Power Plant after the Great East Japan Earthquake shows how the Law is applied in determining the liability of operators, in that case the Tokyo Electric Power Company (TEPCO). This article aims at studying the Space Activities Act from these perspectives.

The article will proceed in the following order. First, it summarizes the background and outlines the Space Activities Act (II.). Next, strict liability and state indemnification under the Space Activities Act is compared relative to other statutes (III.). Then, the reasons for the Space Activities Act's adoption are examined in light of other countries' national space legislation, which allows us to identify a kind of regulatory competition (IV.). A brief conclusion will follow (V.).

II. THE ENACTMENT OF THE SPACE ACTIVITIES ACT

1. Background of the Space Activities Act

The Space Activities Act is not the first piece of legislation on space exploration in Japan. Besides the JAXA Law,[6] which incorporates and governs

3 Restatement of the Law (Third) of Torts: Liability for Physical and Emotional Harm, § 20 (a).

4 Principles of European Tort Law, Art. 5:101; see also Draft Common Frame of Reference, VI. – 3:206.

5 See, for example, Y. SHIOMI, *Sekinin shutai e no kiseki no seitōka* [Justification for attributing liability to a person], in: NBL No. 1056 (2015) 10.

the Japanese space agency known as JAXA (Japan Agency for Exploration of Aerospace), the Basic Space Law[7] was enacted in 2008. The Basic Space Law is one of the "basic laws" that are often enacted when a comprehensive set of policies for an emerging sector is perceived as necessary.[8] Pursuant to the ordinary format of such basic laws, the Basic Space Law stipulates six guiding principles of Japan's space policy, namely: peaceful use of outer space; improvement of the lives of the citizenry; advancement of industries; development of human society; international cooperation; and consideration of the environment (Arts. 2–7).[9] Thereafter, the Basic Space Law provides that the national government is responsible for calibrating these guiding principles through the establishment and implementation of a comprehensive set of policies (Art. 8). There are eleven items listed as requiring the formulation of such policies (Arts. 13–23). These policies shall be compiled to form the Basic Space Plan, which is to be promulgated by the Strategic Headquarters for Space Development (Art. 24);[10] the Strategic Headquarter is headed by the Prime Minister and constituted by all the government ministers (Arts. 27–30). The last provision of the Basic Space Law requires the government to enact a statute necessary for implementing international agreements, including the regulation (permission and supervision) of space activities by non-governmental entities (Art. 35). The second paragraph of the same provision states that such legislation should be carried out "to advance the national interests of Japan in international society and to contribute to the promotion of Space Development and Use

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6 Law No. 161 of 2002. Prior to 2003, when three agencies were integrated into JAXA, the primary space agency in Japan was NASDA (National Space Development Agency), incorporated by the NASDA law (law No. 50 of 1969).

7 Law No. 43 of 2008.

8 A recent example of such basic law is the Basic Ocean Law (law No. 33 of 2007). See N. OKUWAKI, The Basic Act on Ocean Policy and Japan's Agendas for Legislative Improvement, in: Japanese Yearbook of International Law 51 (2008) 164; S. KOZUKA/H. NAKAMURA, The Law Applicable on the Continental Shelf and in the Exclusive Economic Zone: The Japanese Perspective, in: Chircop et al. (eds.), Ocean Yearbook 25 (Nijhoff 2011) 357.

9 English phrasings are taken from the translation available on the website of JAXA at *http://stage.tksc.jaxa.jp/spacelaw/country/japan/27A-1.E.pdf*.

10 The first Basic Space Plan was published in 2009, which was succeeded by the second Basic Space Plan of 2013. The 2013 version was replaced by the Basic Space Plan of 2015, adopted by the Strategic Headquarters in January 2015 and approved by the Cabinet in April 2016. English translations of these Basic Plans are available on the website of the Cabinet Administration Office at *http://www8.cao.go.jp/space/plan/keikaku.html*.

by the private sector." The Space Activities Act has been enacted in response to this provision of the Basic Space Law.

The relationship between the two laws becomes apparent if one focuses on the fact that the Bill that later became the Basic Space Law was prepared by the members of the Diet.[11] This suggests that the Basic Space Law reflects the political aims as to how Japan's space policy should be formulated, while the implementation of these policies has been left in the hands of the administration with the drafting of the Bill of a Space Activities Law. Furthermore, the administration was tasked with incorporating into the Bill an industrial policy facilitative of the space industry. This can be contrasted with the Basic Space Law's direct reference to national security implications. Carefully woven into the "etc." of the second guiding principle – Art. 2 being titled "Improvement of the lives of the citizenry, etc." – the Basic Space Law authorizes the use of space "to increase [*sic*] national security of Japan,"[12] subject to constitutional limitations, of course.[13] Thus, there is a declared political will to make use of space for (defensive) national security purposes and to entrust the administration with the formulation of industrial policy for this sector.[14]

2. The Outline of the Space Activities Act

The Space Activities Act is a combination of regulatory and liability rules[15]. On the regulatory side, it requires a license from the government for two types of space activity conducted by a private entity, and it provides for special liability rules for damage that such an activity causes on the surface of the Earth. The introduction of the license regime is meant to implement the obligation under the Outer Space Treaty[16] to subject activities of non-governmental entities in outer space to "authorization and continuing su-

11 This is rather exceptional for bills submitted to the Japanese Diet. On this point, see J.A.A. STOCKWINN, Governing Japan (Blackwell Publishing 2008) 162.

12 Art. 3 of the Basic Space Law.

13 See the requirement to be "in accordance with the pacifism of the Constitution of Japan" in Art. 2 of the Basic Space Law.

14 For the meaning of the Basic Space Law, see S. AOKI, Current Status and Recent Developments of Japan's National Space Law and its Relevance to Pacific Rim Space Law and Activities, in: Journal of Space Law 35 (2009) 363.

15 As an overview, see T. NAKAZAKI, A New Era for Japan's Outer Space Activities, in: Space Law Newsletter (International Bar Association Legal Practice Division) (September 2016) 14.

16 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, 610 UNTS 205.

pervision."[17] However, the types of activity covered are limited to the launching and operation of a satellite. The procurement of a launch (purchase of a launch service from a foreign launching company) is not regulated, probably in order to avoid taking a position on whether or not Japan becomes the "launching state" when a Japanese company purchases launch services from a foreign company.[18] Nor is the Space Activities Act applicable to other types of space activity, such as mining on asteroids or other celestial bodies, or on-orbit operations including the active removal of space debris. It may have been considered that no Japanese entity is likely to start these activities in the near future.

Under the Space Activities Act, one must be licensed before launching a satellite from a facility within the territory of Japan or from on board a ship or aircraft of Japanese nationality (Art. 4 (1)). The license is issued by the Prime Minister, as the responsible administration is the Cabinet Office. JAXA is treated as a non-governmental entity under international law and is, therefore, subject to the license requirement. Still, when it is JAXA that launches a satellite, a simplified procedure is applied (Art. 19) because the internal safety standards of JAXA are sufficiently strict. For operation of a satellite, one must be licensed by the Prime Minister if the satellite is going to be controlled from a facility located within Japan (Art. 20).

With regard to liability, the Outer Space Treaty provides for the liability of the state that launches or procures the launching of an object into outer space, or the state from whose territory or facility an object is launched.[19] The Liability Convention,[20] which refers to four types of states as the "launching state,"[21] elaborates that a launching state is absolutely liable if damage is caused by its space object on the surface of the Earth or to air-

17 Art. VI of the Outer Space Treaty.

18 This is a controversial issue associated with the interpretation of the Outer Space Treaty. See A. KERREST, Liability for Damage Caused by Space Activities, in: Benkö/Schrogl (eds.), Space Law: Current Problems and Perspectives for Future Regulation (Eleven International Publishing 2005) 91. Cf. E. A. FRANKLE/E. J. STEPTOE, Legal Considerations Affecting Commercial Space Launches From International Territory, in: International Institute of Space Law (IISL), Proceedings on the Forty-Second Colloquium on the Law of Outer Space (2000) 297.

19 Art. VII of the Outer Space Treaty.

20 Convention on International Liability for Damages Caused by Space Objects, 961 UNTS 187.

21 The launching state includes four types of a state: a state which launches a space object; a state which procures the launching of a space object; a state from whose territory a space object is launched; and a state from whose facility a space object is launched. See Art. I (c) of the Liability Convention.

craft in flight,[22] but otherwise it is liable only if the damage is caused due to its fault or the fault of persons for whom it is responsible.[23] While these liabilities are the state's liability under the international law and have no direct implications on a private entity's liability under domestic private law, the Space Activities Act has transposed the dual structure of strict (absolute) liability for surface damage and fault liability for other damage onto the tort liability scheme. To be precise, the Space Activities Act defines "rocket debris damage" as death, bodily injury or property damage caused on the surface of the Earth or to an aircraft in flight by (a part of) a rocket or a satellite not correctly separated from a rocket (Art. 2, no. 8). Similarly, "satellite debris damage" is defined as death, bodily injury or property damage caused on the surface of the Earth or to an aircraft in flight by (a part of) a satellite correctly separated from a rocket. For rocket debris damage the launching person is strictly liable (Art. 35), while for satellite debris damage the person operating a satellite is strictly liable (Art. 53). The Space Activities Act does not mention liability for other damage, namely damage incurred in orbit, which means that general tort law (fault liability based on the Civil Code[24]) applies.

III. STRICT LIABILITY AND STATE INDEMNIFICATION IN JAPAN

1. Existing Legislation Featuring Strict Liability

As is well known, the basic rule of tort liability in Japan is Art. 709 of the Civil Code, which provides that any person intentionally or negligently infringing another person's rights or legally protected interests is liable to make compensation for any resulting damage. Contrary to this principle of fault-based liability, strict liability has been introduced in special statutes, but such statutes are very small in number.[25] Strict liability was introduced for the first time by amendments to the Mining Act[26] in 1939 with regard to damage from mining. After the Second World War, an equivalent rule was enacted for coal washing operations (i.e. extracting coal from coal waste by washing the latter) with the Coal Washing Operations Law.[27] These were

22 Art. II of the Liability Convention.
23 Art. III of the Liability Convention.
24 Law No. 89 of 1896 and Law No. 91 of 1898.
25 Unlike major European countries, there is no strict liability for damage caused by railway transport, air transport or energy production. They are governed by the general tort law rule pursuant to Art. 709 of the Civil Code.
26 The original Mining Act of 1905 has been replaced by the current Mining Act, Law No. 289 of 1950.
27 Law No. 134 of 1958.

followed by the Act on Damages and Compensation for Automobile Accidents of 1955, which provides for something close to strict liability for death and bodily injury of persons resulting from car accidents[28] as well as the Law on Compensation for Nuclear Damages of 1961.[29] All of the activities governed by these four statutes are considered to be inherently hazardous but socially useful. Strict liability for any damage has been considered necessary to render such hazardous-but-useful activities acceptable to the society. This is the same development as has been observed in various other jurisdictions since the late nineteenth century.

In 1968, however, Japanese law took a unique step forward with regard to strict liability.[30] In this year, the Act on the Prevention of Air Pollution[31] was enacted. Subsequently, in 1970, the Act on the Prevention of Water Pollution[32] was enacted. Under both of these Acts, an operator from whom pollution originates is subject to strict liability for death and bodily injury. Seemingly, these Acts were not aimed at making a specific hazardous activity – let alone pollution – acceptable. Rather, the intention was to make remedies easily available to victims and to indirectly control air and water pollution by creating disincentives for the operators.[33]

For physical damage, the Space Activities Act has become the sixth statute alongside the five named above to impose liability without a finding of fault (these being in addition to the Products Liability Act imposing liability based on a defect in the product). Nevertheless, they are not strict liability in the sense that liability arises merely upon identifying the source of damage and the causal link to the actual damage incurred.

2. Varieties among Strict Liability Statutes

It may be reasonable to imagine that the drafters of the Space Activities Act consulted preceding legislation when drafting its strict liability provisions. Interestingly enough, the existing statutes are not exactly identical but present a rather large range of varieties.

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28 The holder of an automobile can be exempted under certain conditions.

29 Law No. 147 of 1961.

30 See E. OSAKA, Reevaluating the Role of the Tort Liability System in Japan, in: Arizona Journal of International and Comparative Law 26 (2009) 393 (including a discussion of the general background of the problem).

31 Law No. 97 of 1968.

32 Law No. 138 of 1970.

33 There are two other statutes providing for strict liability in Japan, but they are only for economic damages. These are the Antimonopoly Act (Art. 25) and the Financial Instruments and Exchanges Act (Arts. 16, 18 and 21-2).

Firstly, strict liability under the Automobile Accidents Act and the two Acts on pollution damage is applicable only when the damage incurred is loss of life or physical injury. Property damage, such as damage to a crashed car or contamination of the land due to the discharge of polluted water, is not covered by these statutes but governed by the general tort rules of the Civil Code. Such a limited scope contrasts with the Mining Act, the Coal Washing Operations Law and the Law on Compensation for Nuclear Damages. These three statutes are comprehensive in the types of damage covered: the strict liability rules under the Mining Act and the Coal Washing Operations Law are applicable when any type of damage originating from mining or coal washing operations is incurred. A nuclear operator is strictly liable for "nuclear damage", which is defined as damage caused by the operation of nuclear fuel materials in the process of nuclear fission or by the operation of radiation from, or toxic operations of, nuclear fuel materials (Art. 2(2)). In fact, the compensation made after the Fukushima incident cover, for example, the decreased market price of the land affected by the incident and the unearned income of farmers due to consumers' avoidance of products grown in the Fukushima prefecture.

The strict liability rules of the Space Activities Act are applicable only to "rocket debris damage" and "satellite debris damage", which include property damage but are limited to damage incurred on the surface of the Earth or to an aircraft in flight.[34] Basically, the Act's scope of application is comprehensive in terms of the types of interests injured, unlike the Automobile Accidents Act and two Pollution Acts[35].

Secondly, the Automobile Accidents Act excludes any liability of the holder of an automobile when the accident is caused by the victim or a third party (Art. 3). The Law on Compensation for Nuclear Damages exempts an operator's liability "when the nuclear damage is caused by [an] extraordinarily huge natural disaster or social unrest." The other four existing laws do not provide for an exemption, instead authorizing the court to consider the contribution of a natural disaster or other kinds of *force majeur* events to the occurrence of damage when assessing liability and establishing its amount. The Space Activities Act has followed the approach of these four latter statutes. This sounds reasonable, given that the exemption under the Law on Compensation for Nuclear Damages has not been applied to the

34 It will be interesting to see whether damage to "property *(zaisan)*" includes economic loss, such as lost profit due to the closure of a business facility hit by a part of the rocket debris.

35 As already discussed, this limitation apparently reflects the distinction between surface damage, to be governed by strict liability, and in-orbit damage, which are left to fault liability rules under the Liability Convention.

Fukushima Incident on the occasion of the Great East Japan Earthquake even though the earthquake and the Tsunami that followed were of such a magnitude as had never been imagined.

Thirdly, the Mining Act authorizes the court to consider, besides the contribution of a natural disaster, contribution of the damaged party (victim) to the occurrence of damage when assessing liability and its amount. This approach is followed by the Coal Washing Operations Law as well as by the Law on Compensation for Nuclear Damages, though the latter's provision is applicable only when the damaged party acted in *gross* negligence. However, similar provisions were removed by the Diet when the two Pollution Acts were debated in 1970. Likely taking that history as reflecting the Diet's intention to emphasize the availability of remedies for victims, the drafters of the Space Activities Act have not included any reference to the damaged party's behavior. This policy is not without doubt, however, as the context of air or water pollution is distinct from the launching of space objects. In order to avoid incurring damage in the latter situation, it is essential that airmen and mariners pay attention to notices and refrain from entering areas where parts of a rocket are likely to fall. Arguably, the absence of any relevant provision, instead of an explicit exclusion considering the victim's behavior, may allow application of the general rule of contributory negligence under the Civil Code.

Fourthly, and most importantly, the Space Activities Act adopts channeling of liability so as to hold liable only the launch operator for rocket debris damage (Art. 36). No equivalent channeling of liability is provided for satellite debris damage. The Law on Compensation for Nuclear Damages also adopts channeling of liability. However, other laws do not have an equivalent provision, which means that entities other than those named in the respective laws can be held liable under general tort law. Why channeling of liability is justified in the case of the Space Activities Act, and whether the reason is the same as in the case of the Law on Compensation for Nuclear Damages, will be further explored below at IV.

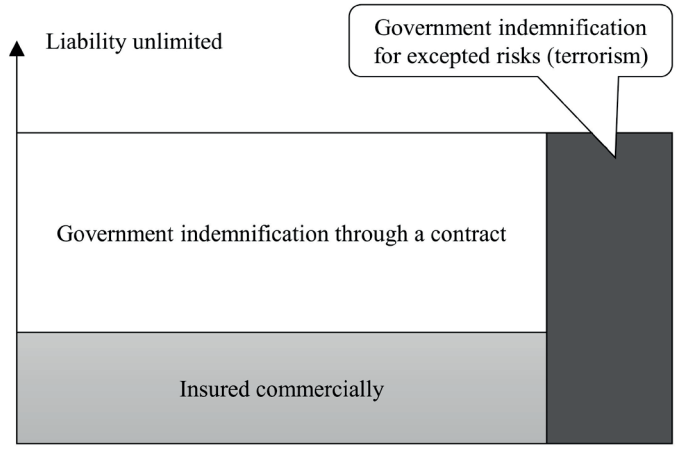
Comparisons of the Space Activities Act with existing strict liability statutes reveal that the former is not a simple reproduction of existing strict liability laws. There is in fact quite a variety among the existing strict liability rules, and the provisions of the Space Activities Act need to be evaluated in light of the policy behind its enactment.

3. State Indemnification under the Space Activities Act

While imposing strict liability on launch operators for rocket debris damage, the Space Activities Act, firstly, requires a licensed launch operator to insure itself for liability up to the amount specified in the Cabinet Order[36]

(Art. 9) and, secondly, authorizes the government to enter into an indemnification agreement with the licensed launch operator (Art. 40). There can be two types of indemnification agreements, one to indemnify losses that fall under excepted risks in the insurance policy and another to indemnify losses that exceed the insured amount. No equivalent mechanism exists with respect to satellite debris damage.

Figure 1: Liability and state indemnification under the Space Activities Act



A state indemnification agreement may not always be concluded. If the launch operator is, for example, a new private entrant with no credible records, the government may be reluctant to enter into a state indemnification agreement. On the other hand, once such an agreement is entered, the scheme *de facto* limits the liability of a launch operator up to the amount of insurance.[37] Theoretically, because state indemnification will not be unlimited, there is a possibility that the amount of damages exceeds that of state indemnification, in which case the operator has to meet liability on its own. However, the amount of required insurance and state indemnification will be set at such a level as to make that possibility negligible. Given that loss-

36 The Cabinet Order is expected to specify different amounts for different types of launch operators.

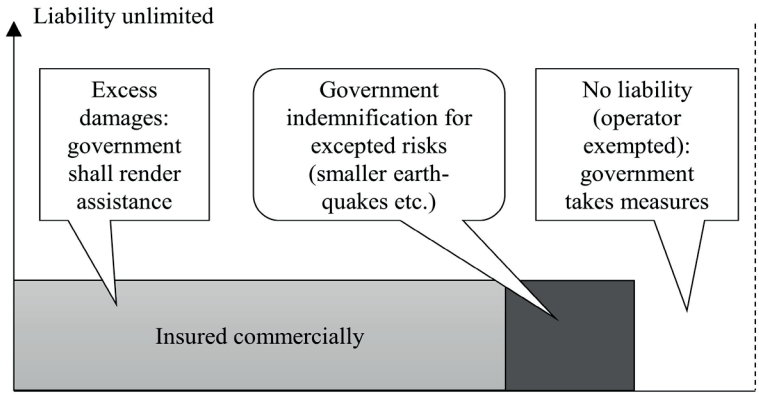
37 Except as required by an international convention, a statutory limitation of liability such as the one found in the Space Activities Act is arguably contrary to Japanese law. Mandatory insurance and state indemnification under the Space Activities Act will probably be presented as measures for compensating victims in any official writings. Still, their function as an alternative mechanism relieving the launch operator from exposure to liability is obvious.

es covered by the liability insurance will be indemnified by the insurer soon after the operator compensates the victims,[38] there is no actual risk that a launch operator will incur monetary losses even if it is responsible for rocket debris damage.

4. Comparison with State Indemnification under the Law on Compensation for Nuclear Damages

Among the existing strict liability statutes, the only one that has a similar scheme for the state's involvement is the Law on Compensation for Nuclear Damages. However, there are significant differences between the schemes of these two statutes. In fact, the Space Activities Act has introduced far more generous support for licensed launch operators.

Figure 2: Liability and the government's engagement under the Law on Compensation for Nuclear Damages

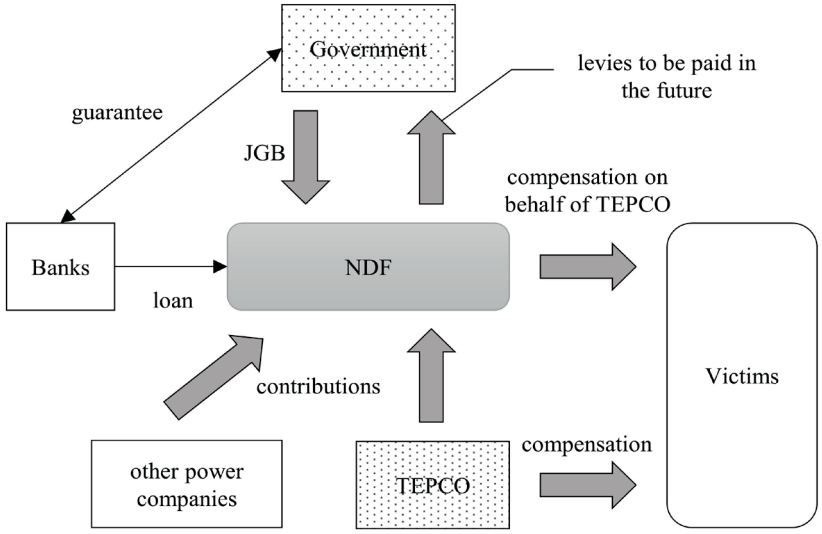


The Law on Compensation for Nuclear Damages does require a nuclear operator to insure itself against liability up to a certain amount. Furthermore, the government may enter into an indemnification agreement with the operator for risks that are excepted in the insurance policy. However, the parallels with the Space Activities Act stop there. If the actual damages are in excess of the insured amount, the Law on Compensation for Nuclear Damages provides that the government is to "render assistance *(enjo)*" to the operator as necessary to indemnify the injured parties (Art. 16). If the operator is exempted from liability for the damage that actually occurs (which has no

38 There is no direct claim right of the victim, but the injured party is entitled to a lien on the insurance money and can claim priority vis-à-vis other creditors of the operator.

equivalence under the Space Activities Act), the government takes measures *(sochi)* necessary to rescue the victims and to mitigate damage (Art. 17). The latter "measures" are understood to mean rescue and other operations similar to those usually rendered by the government in cases of a natural disaster.

Figure 3: Compensation scheme for damages resulting from the Fukushima Daiichi Incident



The meaning of the "assistance" to be rendered by the government in the event of damages exceeding the insured amount had remained unclear for many years. The question unfortunately became an actual one after the Fukushima incident.[38] The insured amount was 120 billion yen (ca. 1 billion Euros), whereas damages have been estimated to be more than 8 trillion yen (ca. 65 billion Euros).Surprisingly (or not), the government has refused to draw upon budget funds to indemnify the excess damages and has instead set up a scheme involving the newly established Nuclear Damage Compensation and Decommissioning Facilitation Corporation (NDF: initially named the Nuclear Damage Compensation Facilitation Corporation). NDF is an entity having

39 For the legal issues arising from the Fukushima incident, J. WEITZDÖRFER, Liability for Nuclear Damages Under Japanese Law: Key Legal Problems Arising from the Fukushima Daiichi Nuclear Accident, in: Butt/Nasu/Nottage (eds.), Asia-Pacific Disaster Management (Springer 2014) 119. See also H. MORITA, Rescuing Victims and Rescuing TEPCO: A Legal and Political Analysis of the TEPCO Bailout, in: ZJapanR 34 (2012) 23.

the task of compensating injured parties on behalf of TEPCO, which is liable under the Law on Compensation for Nuclear Damages. NDF is funded by annual contributions from power companies, including TEPCO, and by the government from time to time. The government's contribution is made by a grant of Treasury Bonds, which are to be redeemed upon request of the NDF. However, NDF is to pay levies whenever possible until the total amount of levies paid equals the amount of the Treasury Bonds that have been redeemed. In other words, while the government's "assistance" assumes the appearance of funding, it is in fact a long-term loan that must be repaid by NDF, with the potential that the repayment term could prove very long depending on the amount of compensation that has to be made.

IV. Regulatory competition in National Space Legislation

The government's commitment under the Law on Compensation for Nuclear Damages stands in sharp contrast to the outright state indemnification under the Space Activities Act. A justification for such generous government support to the launch industry can be discovered only if one looks at the global standard for space legislation.

Many states in the world have, by now, enacted domestic space legislation.[40] One reason is that the Outer Space Treaty as well as other international treaties presume that space exploration is primarily carried out by states, and they consequently do not elaborate on space activities conducted by private companies.[41] The Outer Space Treaty requires authorization and continued supervision of space activities by private companies (see II.2 above), but it leaves detailed regulations to the "appropriate" states that are responsible for space activities by such private companies. It also imposes state liability on the "launching state," which means that taxpayer money could be used to pay for damage caused by a commercial company. It is not at all evident from the Outer Space Treaty how the launching state can cover its expenditure. Thus, when commercial companies became active in space, policy makers came to recognize the need to fill the gap existing between the framework of international treaties and actual commercial

40 As an overview, I. Marboe, National Space Law, in: von der Dunk/Tronchetti (eds.), Handbook of Space Law (Edward Elgar 2015) 127. On the issue of liability, see also A. Kerrest de Rozavel/F.G. von der Dunk, Liability and Insurance in the Context of National Authorisation, in: von der Dunk (ed.), National Space Legislation in Europe (Nijhoff 2011) 125.

41 The Outer Space Treaty does not even mention "private companies", instead using the term "non-governmental entities".

activities, among other means by having recourse against the company that caused the damage.

Thus, the first generation of space legislation has aimed at introducing licensing and supervision of space activities conducted by private companies; it has also required such licensed companies to have a sound financial basis to meet any recourse demanded by the state and to be sufficiently insured for possible liabilities. The United Kingdom's Outer Space Act of 1986 is one of the most typical examples of this type of legislation. Other examples, though enacted much later, include Australia's Law on Space Activities of 1998 and the Netherland's Law on Space Operations and Registration of Space Objects of 2006.

The meaning of domestic space legislation changed, however, when the United States in 1988 amended its Commercial Space Launch Act of 1984[42] and introduced state indemnification for damages exceeding the insured amount.[43] The apparent legislative intent was to enhance the competitiveness of American launch operators, which were perceived to be disadvantaged relative to their European competitors because of the French government's undertaking to pay compensation for any damage caused by the launch.[44] The 1988 amendments went beyond filling the gap that resulted from the Outer Space Treaty's failure to address commercial space activities and turned domestic space law, in particular state indemnification for the liability of a launching company, into a source of competitiveness.

Such a development was then countered by France when it enacted the Space Operations Law in 2008. The 2008 Law stipulates that the liability of a launch operator ceases one year after a launch,[45] provides that state compensation is applicable if damages occurred exceeds the insured amount and excludes liability of other parties than the licensed launch operator (channeling of liability). By that time, however, the United States shifted its focus to sub-orbital human spaceflights (so-called space tourism). The Commercial Space Launch Act was amended in 2004 and most recently in

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42 Currently codified as 51 USC § 50901 et seq.

43 Currently 51 USC § 50915.

44 See M. J. KLEIMAN / J. K. LAMIE / M.-V. CARMINATI, The Laws of Spaceflight (American Bar Association 2012) 105. The French government's financial assurance used to be made through an agreement between the French government and the European Space Agency with respect to the Centre Spatial Guyanais (CSG). See KERREST DE ROZAVEL / VON DER DUNK, *supra* note 40, 150–155.

45 This might appear to be a prescription (time-barring) of operator liability. However, read together with a provision whereby the government assumes liability once the operator is relieved, it may be more accurate to understand it as limitation of operator liability in terms of time.

2015 to introduce a regulatory scheme facilitative to commercial operators of human spaceflight.[46] The situation may be described as the regulatory competition in the law market, the concept familiar in the corporate law or finance law sector, in particular.

It is obvious that Japan, motivated by its aspiration to enter the market of commercial space launch, intends to fare the regulatory competition by introducing the legal environment as competitive as the United States or France. In fact, the deliberations on the Space Activities Act were ignited by the suggestion of the Liberal Democratic Party (LDP) in its Proposals for Comprehensive Space Strategy to Implement the National Strategy, dated 26 August 2014.[47] As a response, the government included the enactment of necessary space laws in the Basic Space Plan, promulgated pursuant to the Basic Space Act, in its 2015 version. The political leadership in demanding the measures to fare the regulatory competition as part of industrial strategy, responded by the administration through a comprehensive policy plan and finally by law making, makes an apparent parallel with the recent developments of corporate governance reform (typically with regard to introduction of independent director requirements).[48]

The regulatory competition explains the difference between the Law on Compensation for Nuclear Damages and Space Activities Act in terms of state indemnification. In the case of nuclear damages compensation, there is no global competition. Power companies, who are major operators of nuclear facilities, are dominant in the local market and never exposed to the competition in the global market. If the government is to make any commitment, it is from the need to give due remedies to the victims. In sharp contrast, state indemnification for rocket fall-down damages under the Space Activities Act is in fact subsidy to enhance competitiveness of the domestic commercial launch company. This may be the reason why the latter enjoys so generous state indemnification, which the nuclear industry is denied.

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46 T. R. HUGHES/E. ROSENBERG, Space Travel Law (and Politics): The Evolution of the Commercial Space Launch Amendments Act of 2004, in: Journal of Space Law 31 (2005) 1.

47 JIYŪ MINSHU-TŌ, SEIMU CHŌSA-KAI, UCHŪ, KAIYŌ KAIHATSU TOKUBETSU I'INKAI [The Special Committee on the Space and Ocean, Policy Research Council of the Liberal Democratic Party], *Kokka senryaku no suikō ni muketa uchū sōgō senryaku: teigen* [A Proposal for a Comprehensive Space Strategy to Implement the National Strategy], 26 August 2014, available at *https://www.jimin.jp/news/policy/126071.html* [in Japanese].

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Channeling of liability is also a source of competitiveness. Because the liability is born solely by the launching company, the supplier of components, some of whom are small and medium sized companies, do not have to worry about exposure to liability. Furthermore, channeling of liability also relieves a payload (satellite) owner, who is a client of the launching company, from the risk of being accused or suspected of contributing to an accident. Even if it turns out that the payload had no problem, the fact that it is so suspected and the inevitability of a post-accident inquiry may frustrate the interests of an owner. The channeling of liability will mitigate such a concern and, as a result, help to attract commercial users of Japanese launch operators.

V. CONCLUSION

The Space Activities Act, enacted in 2016, joins the line of statutes providing for strict liability, which is very exceptional in Japan. It is not unusual for a spacefaring state to introduce strict liability for surface damage from space activities, because space activities have been recognized internationally as abnormally dangerous in nature. Still, the enactment of such a statute at this time in Japan is noteworthy given that the Law on Compensation for Nuclear Damages, another strict liability statute for abnormally dangerous activities, has drawn social and political attention with regard to its application to the Fukushima Daiichi incident.

A comparison of Japan's strict liability statutes reveal that there are divergences among them with regard to the design of liability schemes. The unique features of the Space Activities Act are (i) the channeling of liability to the launch operator for rocket debris damage and (ii) generous state indemnification. These features can be understood as Japan's response to regulatory competition in domestic space law. The motivation behind the legislation may be the aspiration to prevail in the global competition on the market of commercial space services.

As with other regulatory competition issues, such as corporate governance reform, the enactment of the Space Activities Act was initially pursued by political leaders and immediately picked up by the legislature . This quite likely reflects the shift in the Japanese legislative process. The dominance of bureaucrats in policy and law-making appears to have become a thing of the past. The role of political leaders in shaping general policy directions has come to enjoy significance, at least where strong leadership is required to meet the pressures of a globalized market.

SUMMARY

In November 2016, the Japanese Diet approved the Space Activities Act. In addition to the regulation of space activities by private (non-governmental) entities through licensing, it has introduced strict liability for surface damage caused by private space activities and also state indemnification in cases where the amount of surface damage exceeds the insured amount. The latter aspect of the Space Activities Act constitutes a special rule of tort law, one which deviates from the fault-based general tort law in the Civil Code.

There are not many statutes embodying strict liability in Japan. Still less common are state indemnification laws. A close examinations reveals that even among the exceptional strict liability statutes, there is a considerable degree of variety with respect to (i) the scope of damage for which strict liability is applicable, (ii) the exemption of otherwise liable parties, (iii) contribution of the victim or a third party to the occurrence of damage, and (iv) the channeling of liability. Each statute, including the most recent Space Activities Act, adopts rules suitable to the respective substantive background.

With regard to state indemnification, the Space Activities Act is remarkably generous when compared to the Law on Compensation for Nuclear Damages. While the latter law refers to mere "assistance" by the government when the amount of damages exceeds the insured amount, a standard which is now plaguing TEPCO after the Fukushima Daiichi incident of 2011, the Space Activities Act explicitly provides for indemnification by the government so as to relieve the launch operator, de facto, from the risk of actual disbursement. However peculiar it may appear, it can be reasonably justified when one looks at the domestic legislations of other spacefaring states, in particular the United States and France. In other words, states are running a race of regulatory competition to support their commercial launch operators through financial indemnification.

The existence of such regulatory competition may explain another feature of the Space Activities Act, namely the strong political leadership which has been exhibited. The Act is not alone in this respect: strong political leadership has also been observed in other subjects of regulatory competition, such as corporate governance reform.

ZUSAMMENFASSUNG

Das japanische Parlament hat im November 2016 das Gesetz über Aktivitäten im Weltraum verabschiedet. Das Gesetz regelt zum einen die entsprechenden Aktivitäten privater Unternehmen im Wege der Vergabe von Lizenzen und zum anderen führt es ein striktes Haftungsregime für Schäden ein, die auf der Erdoberfläche durch solche (nicht-staatlichen) Weltraumaktivitäten entstehen. Zusätzlich

ist eine staatliche Einstandspflicht für Schäden festgeschrieben, die oberhalb des Versicherbaren liegen. Das neue Haftungsregime stellt eine spezielle Art der Gefährdungshaftung dar, die sich von der allgemeinen deliktischen Haftung im Zivilgesetz unterscheidet, welche ein Verschulden voraussetzt.

Es gibt in Japan nur wenige Gesetze, die eine Gefährdungshaftung vorsehen. Noch seltener sind Regelungen, die eine staatliche Ausfallhaftung festschreiben. Eine genaue Analyse zeigt, dass bei der Gefährdungshaftung unterschiedliche Ausgestaltungen hinsichtlich folgender Kriterien bestehen: (i) der Umfang des Schadens, den die Gefährdungshaftung erfasst, (ii) der Haftungsbefreiungen für Verantwortliche, (iii) des Mitverschulden des Geschädigten oder eines Dritten und (iv) der Aufteilung der Haftung. Die jeweiligen Gesetze passen ihre Regelungen den spezifischen tatsächlichen Gegebenheiten an; dies gilt auch für das Gesetz über Aktivitäten im Weltraum.

Die staatliche Einstandspflicht ist in dem neuen Gesetz im Vergleich zum Gesetz über die Haftung für Nuklearschäden bemerkenswert großzügig geregelt. Während letzteres lediglich eine staatliche „Unterstützung" für Fälle vorsieht, in denen die Schadenssumme den versicherten Betrag überschreitet – ein Problem, mit dem sich TEPCO seit der nuklearen Katastrophe im Reaktor Fukushima Daiichi im Jahr 2011 herumschlägt –, gewährt das Gesetz über Aktivitäten im Weltraum dem Betreiber ausdrücklich eine Haftungserleichterung durch den Staat, die de facto einer Haftungsfreistellung gleichkommt. Auch wenn dies ungewöhnlich erscheinen mag, gibt es dafür doch eine rationale rechtspolitische Begründung, wenn man sich die Regelungen in den USA und Frankreich anschaut. Mit anderen Worten, wir sehen hier eine Form des regulatorischen Wettbewerbs der Staaten mit dem Ziel, die privaten Betreiber von Weltraumaktivitäten durch finanzielle Haftungsfreistellungen zu unterstützen.

Die Existenz dieses regulatorischen Wettbewerbs erklärt vermutlich auch, warum das Gesetzgebungsverfahren von einem ausgesprochen starken politischen Engagement geprägt war. Dieses Phänomen lässt sich auch bei anderen Regelungsvorhaben, wie etwa der Reform der Corporate Governance in Japan, beobachten, bei denen der internationale Regulierungswettbewerb eine Rolle spielt.

(Die Redaktion)