

PRIVATE LAW RULES FOR THE COMMERCIAL ACTIVITIES IN SPACE: *LEX FERENDA*

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ABSTRACT

This paper discusses the need for legislation of private law rules appropriately suited to commercial activities in outer space in order to facilitate the commercialisation of space. It is because the existing private law, which is the domestic law applicable by way of the choice of law rules, does not take into consideration of the specificities of space objects and space activities. The areas to be addressed include the tort liability, property rights and secured transactions. Regulation over contracts, by contrast, does not seem to be necessary.

I. Introduction

The commercial use of space has attracted interests of space lawyers in the recent years. It is indicated by, for example, the voluminous work from the research project "Project 2001" or the number of the presentations over the subject at the last few IISL colloquia. In order for the commercial use to be really in operation, private law rules are indispensable as the legal infrastructure. Among these rules, such issues have been considered so far as the intellectual property, remote sensing, space tourism and secured transactions, the last of which being inspired by the attempts of Unidroit to draft the Space Protocol to the Cape Town Convention. Apparently a comprehensive examination of private law issues has not been undertaken,

despite all those researches by lawyers.

The private law rules include contracts, liability from torts, property rights as well as secured transactions. When addressing these issues with regard to activities in space, a lawyer may face two difficulties. One is the difficulty of deciding which law applies. Since the space is not subject to the territorial jurisdiction of any state, like the high seas, it is not easy to apply, for example, the principle of *lex rei sitae* to the property rights or that of *lex loci delicti* to the liability arising from torts. The understanding that a space object in the space does not carry its nationality as the "floating island" but is merely subject to the jurisdiction of the state of registry<sup>1</sup>, which

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<sup>1</sup> Art. VIII, Outer Space Treaty.

shall be a launching state<sup>2</sup>, adds complication to the difficulty, because the governing law cannot be determined by the nationality under this scheme.

The second difficulty arises even when the governing law is determined in some way or another. The rules of domestic law to be applied are often not suitable to space activities. Not many countries have a statutory provision on patents arising from inventions in the outer space, after more than a decade from the enactment of the Patents in Space Act in the United States<sup>3</sup>. Very few countries have a Civil Code with special provisions on, or an overriding statute specific to, space objects. As a result, the applicable rules are those of a general nature and will not address unique features of space objects or space activities, no matter which law is chosen.

The situation appears somewhat similar to the early days of the air law. Faced with the rapid developments of the use of aircraft in the beginning of the twentieth century, the public law regime under the Paris Convention of 1919 was the first to come. Then it was found that private law rules were lacking and an international conference, Premier Conference de Droit Privé Aérien, was called for in 1925, which led to the establishment of CITEJA (Comité International Technique d'Experts Juridiques Aériens).<sup>4</sup> Contrary to the CMI (Comité

Maritime International), whose principal target was to coordinate national laws in existence for a long time, CITEJA worked on producing, rather than unifying, private law rules on novel matters. Similar law-making might be needed with regard to the outer space sooner or later. With this prospect in mind, this paper examines a possible legislation for private law rules on space activities.

## II. Torts

The damages caused by space activities have been a focus of concern from the beginning of the space exploration. However, the issue addressed by the Outer Space Treaty is only the state responsibility: the well known liability of the launching state<sup>5</sup>. When it is a private entity that engages in space activities and causes the damage, the launching state held liable under the above Treaty and Convention is entitled to require the former for indemnification.<sup>6</sup>

It may be more likely, however, that the damaged party brings suit against the private entity engaging in the space activity

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DIEDERIKS-VERSCHOOR, AN INTRODUCTION TO AIR LAW 6-7 (7th ed. 2001, The Hague et al.).

<sup>5</sup> Art. VII of the Outer Space Treaty; Art. II of the Liability Convention.

<sup>6</sup> For indemnification from the state that has compensated the damaged party, see MICHAEL GERHARD, NATIONALE WELTRAUMGESETZGEBUNG 147 ff. (2002, Köln et al.)

<sup>2</sup> Art. II, Registration Convention.

<sup>3</sup> 35 USC §105.

<sup>4</sup> For a short history on CITEJA, see I.H.PH.

rather than pursuing the liability of the launching state. A suit can also be brought against other relevant parties, such as the manufacturer or financier to the operator, in reliance on the rules of products liability or the doctrine of lender's liability. The following hypothetical case may highlight the issue.

#### HYPOTHETICAL CASE

*A component came apart from a communication satellite P, owned and operated by a US company W, and, after drifting in the space for a while, crashed into and damaged another satellite Q, which was owned and operated by a German company X. On the satellite Q, experiments under the microgravity were being undertaken at the order of a Canadian company Y. As a result of the crash, a rare material used in the experiments was lost and the stock price of company Y went down when the news of crash was distributed. The component causing this accident had been manufactured by a Japanese manufacturer Z. Satellite P was registered by the United States government, while satellite Q was registered by Germany.*

Under the Outer Space Treaty and the Liability Convention, it is evident that the United States as the launching state of satellite P shall be liable for the damages. Since the damages suffered by company X

and Company Y did not take place on the surface of the earth, the liability shall be fault-based one and not the absolute liability, even when the Liability Convention is applicable.<sup>7</sup>

The Outer Space treaty or the Liability Convention do not exclude the liabilities of private parties such as company W (operator) or company Z (manufacturer).<sup>8</sup> However, no further provision is found in either of them. As a result, there remains legal uncertainty in this regard.

The first issue is which law applies. The determination of the governing law through the ordinary choice of law rules is not workable because there is no *lex loci delicti*. The situation is similar to the collision of ships on the High Seas, for which the choice of law rules are also disputed. One idea may be to make reference to the state of registry of the satellites, while another idea of applying *lex fori* will also make sense.<sup>9</sup> The former solution will face another problem of choosing between the U.S. law (law of registration of the damaging satellite) and German law (that of the damaged satellite).

The second issue is the conditions for finding the operator W liable. It is referred to the rules of the chosen law. Since in most jurisdictions, including the U.S. and Germany, no special rule is provided with regard to the civil liability of satellite

<sup>7</sup> Art. III of the Liability Convention.

<sup>8</sup> See Art. XI para.2 of the Liability Convention.

<sup>9</sup> See CMI draft.

operators, it is likely that the general rules of tort are applied.

The third issue, which shall also be referred to the governing law, is the scope of damages to be recovered. In the hypothetical case above, the pure economic damages sustained by company Y will be controversial. With regard to the state liability under the Liability Convention, the damages to be covered are limited to the physical loss and the pure economic loss is excluded.<sup>10</sup> However, this provision of the Liability Convention does not affect the liability of a private entity under the applicable domestic law. The result might differ, depending on which law is applicable, the U.S. or German law.

The liability of company Y (manufacturer) could be more complicated, because the strict liability rules could be applied as a result of the doctrine of products liability in the United States or the Products Liability Law of Germany. Such complication may be reflected, in turn, in the availability and affordability of the space liability insurance.

It is implied from the above that the legal uncertainty, added onto the business and technical risk inherent in space activities, will work as a disincentive to private entities considering entry into the space business. If it is desirable to facilitate the commercialization of the outer space, it may merit considering whether the legislation to

<sup>10</sup> Art. I (a) of the Liability Convention.

facilitate commercial activities in the space is not necessary.<sup>11</sup> If the answer is in the affirmative, two steps will need to be distinguished. First, it is indispensable to ensure clarity of the legal rules by enacting explicit rules on the subject as domestic law, including the rules of private international law (choice of law). Second, a legal framework more conducive to the commercial activities, such as the limitation of liability, might also be worthy of being considered.<sup>12</sup>

### III. Property Rights and Secured Interests in Space Objects

#### *Transfer of Property Rights*

Under the existing law on property of some jurisdictions, including Japan, the distinction of movables and immovables is critical. With regard to movables, possession plays an important role. First, the transfer of the property right is effective only upon the transfer of the possession to the acquirer. In the case of immovables, when registered, possession has

<sup>11</sup> Cf. Sa'id Mosteshar, *International Liability for Damage: Proposed Solutions for the Era of Commercial Space Activity*, in: LUFT- UND WELTRAUMRECHT IM 21. JAHRHUNDERT: AIR AND SPACE LAW IN THE 21ST CENTURY (Liber Amicorum Karl-Heinz Böckstiegel) 396, 397 (Marietta Benkö & Walter Kröll (Hrsg.), 2001, Köln et al.).

<sup>12</sup> Another idea may be for the government to provide support to the entity found liable. See Sa'id Mosteshar, *supra* note 11, at 400.

little significance and the criteria shall be registration. Exceptions are automobiles, ships and aircrafts, which, though movables in nature, can be registered. Accordingly, property rights in them are made effective by the registration rather than possession.

No such special rules have been introduced with regard to space objects. The problem with this present situation is that the meaning of "possession" may raise difficult issues for interpretation in the case of space objects. Taking actual possession of a satellite is almost unconceivable. The normal means of delivering satellites is to hand over the control of it from the TT&C (telemetry, tracking and control) facility to the transferee. The code for control will be released to the transferee, the latter will use the code to put the satellite under its control and then change the code so that the transferor will not be able to have access to the satellite any more. Even if we enlarge the meaning of "possession" so that it includes taking possession indirectly, we will be faced with the question of which specific act in the abovementioned process shall be identified as "transfer of (indirect) possession."

It is thus realistic to consider introducing statutory scheme similar to ships and aircrafts with regard to space objects, in order to replace possession with registration as criteria for the transfer of property rights, at least with regard to those space objects owned by private entities and used for commercial purposes. A register for this purpose can be the same one as is prepared

for the identification under the Registration Convention, as is the case with the register of aircrafts and ships.<sup>13</sup>

#### *Judicial Enforcement*

The situation is all the more problematic, if we consider the enforcement procedure by the court order, as in the case of the attachment by a creditor, secured or not, or the enforcement of the final court decision. Under the Japanese law, the means of enforcement over a movable is taking possession of it by the bailiff. However, it is a matter of course that a bailiff cannot take actual possession of a satellite. A bailiff trying to take control of the satellite from the ground will be no more successful, since a bailiff, unlikely to be equipped with the knowledge of space technologies, may not be able to operate the TT&C facilities. A launcher might be able to be possessed after its return to the Earth, though it is doubtful that there remains a sufficient value in it at this stage.

If a legislation is made for a space object to be registered and the property right in it to be transferred by reference to the registration, it will also be possible to devise a scheme to enforce attachment by registering the court order. As long as there is a register of attachment, a third party acquiring rights in it shall not escape the burden due to the attached creditor. Such a

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<sup>13</sup> For the double role of the register of ships, see ROLF HERBER, *SEEHANDELSRECHT* 97 (1999, Berlin & New York).

system needs further legislation, by adding special provisions to the procedural rules of enforcement of each state.

### *Secured Transactions*

As regards the secured transactions, the point of discussion is common with the property rights: a movable can be pledged by handing over its possession but not mortgaged like an immovable, because the latter requires registration. However, this is not an absolute rule but rather a matter of convenience, as is again shown by the example of ships and aircrafts, which are movables that can be mortgaged. Therefore, a statute to enable mortgaging of space objects will be useful in facilitating the financial transactions over space objects, which, in turn, will promote the construction and acquiring of space objects for commercial purposes.

One of the advantages to be brought by the draft Space Protocol to the Cape Town Convention, now under discussions at Unidroit, may be the introduction of the registration system for the security interests ("international interests" as the Convention and Protocol put them). Unlike aircrafts and ships, space objects have had no registration system for security interests so far. Therefore, even without the various provisions aimed at promoting financial transactions, the Cape Town Convention and its Protocol will be of benefit to the transactions over space objects.

### *Liens*

In relation to secured transactions, law on liens also needs consideration. Unless excluded, space objects will be subject to various liens provided in the applicable domestic law. Besides the question of how to determine the applicable law in regard to liens, which may itself difficult and complicating, the general rules on liens is very likely to be inappropriate to space objects that are up in the outer space and not handed over or taken in custody physically.

Here again, it may be useful to examine the equivalent legal rules on ships and aircrafts. In the case of maritime liens, they have developed in the long history of each country and exist in a large variety. The international efforts to decrease the kinds of liens so that financing by mortgages becomes easier have been so far unsuccessful.<sup>14</sup> In contrast, the liens on aircrafts, as provided in the Geneva Convention of 1948, are only two kinds, securing a claim in respect of compensation due for salvage of the aircraft and of extraordinary expenses indispensable for the preservation of the aircraft.<sup>15</sup>

With regard to space objects, a need for acquiring finance is even more imminent than in the case of aircrafts.

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<sup>14</sup> The 1967 Convention on Maritime Liens and Mortgages as well as the 1993 Convention on the same subject, both aimed at limiting maritime liens, have attracted only few State Parties.

<sup>15</sup> Art. IV (1) of the Convention on the International Recognition of Rights in Aircraft, 1948.

Besides, the right to subrogation of the insurer needs to be ensured as well. Therefore, it may be better to exclude the liens under general private law rules and introduce instead a simple rule admitting only very limited number of liens, after the Geneva Convention on rights in aircraft.

#### IV. Contracts

Commercial activities in the outer space are based on various contracts. It may be an undertaking agreement between the satellite operator and the customer to carry out scientific experiments, or a filming agreement for a TV commercial film or a transport agreement to carry a passenger to space tourism. It might be questioned whether these agreements need not be regulated by law, just as the Hague-Visby Rules on carriage of goods by sea or the Warsaw (now Montreal) Convention on carriage by air.

However, it is rather doubtful that we need to introduce regulation over such agreements and limit the freedom of contract with regard to space activities. There are two differences between the space transactions on the one hand and maritime and aerial transactions on the other. One is the volume of trade. On one extreme is found the passenger carriage by aircraft, which is a mass market with most of the users being consumers. In the case of carriage of cargo by sea, though the customer (shipper) may

not be a consumer, it is still a massive trade based on a highly formalised terms of conditions not subject to individual negotiations, as long as the liner service is concerned. On the other hand, space transactions are still small in volume and it is likely that the contracts are well negotiated by both parties. Even in the case of space tourism, the passenger will be a sophisticated person who fully understands the nature of risks of the activities he or she is going to engage in, until a truly mass market develops.

Another difference is found in the industrial organisation. In liner service of maritime transport, shipping conferences have remained exempt from the regulation of cartels and held not a little bargaining power against the shippers. Air carriers form an organisation named IATA, also exempt from the antitrust regulation and maintain a globally uniform price list. Regulation over the terms and conditions of carriage can be understood, at least in part, as a protection of the counterparties against such large organisations. In contrast, enterprises in the commercial space activities are not organised in a similar way. Neither do they appear to have a dominant bargaining power against their customers. It is thus doubtful that regulation of contracts is necessary at this stage.

#### V. Conclusion

As has been discussed, the

existing private law rules are quite unsatisfactory if states truly want to facilitate commercialisation of the outer space. The Outer Space Treaty and other Conventions do not address private law issues, leaving them to the domestic law chosen as the governing law will apply. However, the choice of law rules to be referred to at the outset are already not clear at all, since the outer space is a public domain and the space objects are considered to carry no nationality. Besides, even when the governing law is determined, domestic law rules, more often than not, do not fit in to space activities or objects. The liability rules could be too harsh on operators and manufacturers, while the rules on property rights, enforcement procedure as well as secured transactions treat space objects as simple movables, which might lead to bizarre conclusions.

It is thus required that private law rules suitable to commercial activities in space are introduced at an early occasion so as to promote the commercialisation of space. The remaining issue yet to be discussed is the approach to be taken toward this end. Though this paper did not address this issue to a full extent, the author is rather careful in suggesting an international law-making, considering the rapid developments of both technological and business environment of space activities. Not only the international law-making could be time consuming, it is often difficult to make necessary amendments to the once adopted international instrument, despite the

developments of the environment. Private law rules are indeed necessary infrastructure for commercial activities, but outdated legal system is worse than no rules at all.

An alternative approach to international law-making might be to establish an international forum consisting of people with expertise that examines the current situation and makes necessary recommendations to national legislators from time to time so that a legal system truly conducive to commercial activities is introduced in each state.