1995

TWO NEW NATIONAL SPACE LAWS: RUSSIA AND SOUTH AFRICA

Frans G. von der Dunk
University of Nebraska - Lincoln, fvonderdunk2@unl.edu

von der Dunk in Proceedings of the Forty-Eighth Colloquium on the Law of Outer Space 251-261 (1995).

TWO NEW NATIONAL SPACE LAWS: RUSSIA AND SOUTH AFRICA

Frans G. von der Dunk*

Abstract

Increasing private participation in space activities is one of the most farreaching developments relevant for international space law today. The most comprehensive consequence of such private participation in a legal sense is in fact the necessity to establish a national space legislation of some kind, in view of the international obligations arising under responsibility and liability for the state relative to the consequences of these private activities.
The rather recent addition in 1993 of two states, the Russian Federation and the Republic of South Africa, to the previously existing number of three states (the United States, Sweden and the United Kingdom) in possession of national space legislation is therefore clear proof of the aforementioned development.
The paper will try to provide a summary description of the two pieces of national space legislation from the perspective of international space law. After a short introduction to the domestic circumstances in which the legislations have been established, analysis will focus therefore on the manner in which the two national space laws actually operate in elaboration of international responsibility and international liability for space activities. Reference will be had in this respect primarily to the respective scope of the two laws, both with regard to the activities concerned and with regard to the entities concerned.
Furthermore, with an eye to the three older national space laws, the measure of inclusion or absence of a licensing system, with related problems of derogation of liability and insurance obligations, will be discussed. Also, the extent to which a few fundamental obligations found in the international space treaties, such as those related to peaceful uses of space and environmental issues, are reflected in the two laws will be evaluated.
By means of the resulting conclusions, a summary evaluation may be made of the two respective national space laws, and the way in which they deal with the general problem of containing the risks inherent in private involvement in space activities by juridical means, that is by binding private entities to the international obligations of space law.

1. Introduction

It may be deemed an interesting historical coïncidence, that Russia and South Africa were the two states which, almost simultaneously, during 1993 enunciated two national space laws. Globally speaking, these two states experienced perhaps the most far-reaching, even revolutionary political developments of the last few decades.

1.1. Russia.

Russia in large measure took over the former Soviet Union's place in the global community. This includes the major share of Soviet space activities. Moreover, the political system of communism within Russia broke down. The accompanying transformation to a more democratic and capitalist society finally is complemented by serious upheavals, even crises, in economic terms.
One major consequence of this development was the diminishing possibility for the new Russian state to continue the immense space program of the former Soviet Union. This development was coupled with increasing opportunities for private or quasi-private entities to become involved in

---

Published by the American Institute of Aeronautics and Astronautics with permission.
*Co-Director, International Institute of Air and Space Law, Leiden University, The Netherlands: Member IISL, Member AIAA, Member ECSL, Member ILA.

such activities. The promulgation of the "Law of the Russian Federation on Space Activities"[1] which entered into force in August 1993 was for a large part motivated by a desire to deal with such possibilities of private involvement in outer space,[2] hitherto a phenomenon unheard of in this part of the world.

1.2. South Africa.

While South Africa could be considered a capitalist country for many decades, since the Second World War it had suffered increasing political isolation as a state because of its racist Apartheid-regime. The fundamental political transformation during the last years to a more or less normal democracy ended this international isolation, although South Africa of course will need more time to shed all of the heritage of the Apartheid-period.

This made the prevailing tendency within South Africa to consider all space activities as crucial to state security and therefore of military concern and secret character less and less relevant. Also, thereby it made acceptance of private entry into this special field possible. Therefore, establishment of the South African "Space Affairs Act"[3] in September 1993 was still largely due to the desire to deal with private enterprise.[4]

Another fundamental reason for both national space laws to deal with private enterprise, it should be noted, was the partisanship of Russia and South Africa to the main space treaties.[5] Russia has ratified the Outer Space Treaty[6], the Rescue Agreement[7], the Liability Convention[8] and the Registration Convention[9], whereas South Africa is a party to the Outer Space Treaty and the Rescue Agreement, as well as having signed the Liability Convention.[10]

2. The Scope of the Laws

This brings us to the issue of international accountability of Russia and South Africa for private space activities under the space treaties, and the extent to which this is reflected in the respective national laws. Basically, this concerns two related questions.

Firstly, what categories of activities are the Russian Law and the South African Act aiming to regulate? To what extent does this coïncide with the general scope of the space treaties regarding the activities dealt with?

Secondly, to the extent of private involvement in such activities, what categories of private entities are the two states aiming to control, by force of law? In what measure does this exercise of national jurisdiction relate to the accountability of the states on the international plane?

2.1. Space Activities in the Russian Context.

The Russian Law deals with an, in principle, extraordinary wide range of activities. Space activities are defined as including not only space communications, space remote sensing, manned space flights, space research and the manufacture of products in outer space, but also "other kinds of activities performed with the aid of space technologies".[11] Even more sweeping, the creation, use and transfer of "space technics, space technologies, [and] other products and services necessary for carrying out space activities" are also included in the scope of the Russian Law.[12] This would cause also for example financial arrangements or labor contracts with respect to space undertakings to fall under any requirements provided by the Law.

The practical consequences of such a broad spectrum of activities related to outer space in principle being dealt with by one single law can not be dealt with adequately here. Nevertheless, the Russian Law may at any rate be said to include in its scope in a comprehensive fashion those activities which for example the space treaties deal with: rescue and return of astronauts and space objects[13], the launching of space objects and all other space activities causing damage[14], issues of registration[15], and in general all "activities in outer space"[16].

2.2. Space Activities in the South African Context.

The South African Act has a more limited scope in terms of activities falling within its terms.

Thus, "space activities" are defined as "the activities directly contributing to the launching of spacecraft and the operation of such craft in outer space".[17] In addition however, under circumstances the Act can also deal with "space

related activities", defined as "all activities supporting, or sharing mutual technologies with, space activities".[18] While not as extensive in scope as the Russian Law therefore, also the South African Act seems to principally include at least all activities which may possibly result in violations of rules contained in the main space treaties.

Both laws, it should also be noted, thereby deal with the three fields of space activities where so far private involvement has actually proven to be an issue: launching, satellite communications and remote sensing.

2.3. International Responsibility and Liability for Private Space Activities.

Russia and South Africa, just as all other states, are internationally responsible not only for their own, governmental space activities, but also for certain private space activities.[19] As to the question in respect of which category or categories of private activities are concerned, Article VI of the Outer Space Treaty provides no further clue than its reference to "national activities".[20]

Likewise, Russia and South Africa will be held liable under international space law for damage as the consequence of space activities partly or wholly conducted by private entities, as long as they qualify as "launching states" in respect of these activities - in other words: as long as they either launched the space object involved, or (co-)procured its launching, or had their facility or territory used for its launch.[21]

2.4. Responsibility and Liability in the Russian Context.

In this respect, the Russian Law faithfully follows the international framework for private space activities. It applies to "the space activities of organizations and citizens of the Russian Federation or the space activities of foreign organizations and citizens under the jurisdiction of the Russian Federation", which latter phrase can logically only mean 'territorial jurisdiction'.[22] This obviously covers both the Russian responsibility for any private "national activities" in outer space, and Russian liability for private space activities involving a space object launched from Russian territory.

On the other hand, there are instances where Russia will be held internationally liable for private entities' activities which it has no territorial or nationality-based jurisdiction over. This, however, is more a consequence of the present structure of international liability for space activities, than of a flaw in the exercise of Russian jurisdiction.[23] For example, a US company operating from US soil a satellite which was launched from Russia, can entail Russian liability in case the satellite causes relevant damage in terms of the Liability Convention, even though it operates completely outside the reach of Russian jurisdiction, either over nationals or over territory, at the time of the accident. Such cases consequently will have to be dealt with by means of the relevant contracts.

2.5. Responsibility and Liability in the South African Context.

The South African Act structures its application in a somewhat more complicated manner. With respect to launching activities, both launches from the territory of South Africa and launches undertaken elsewhere by (juridical) persons of South African nationality fall within the scope of the Act.[24] Also, (any) "operation of a launch facility" invokes application of the Act.[25]

As to other space activities, only such space activities undertaken or participated in by juridical persons of South African nationality which entail South Africa's international obligations (or affect other national interests) automatically trigger application of the Act.[26] Thus, foreign companies operating satellites for telecommunications purposes from South African territory would not seem to fall under the scope of the Act. However, it should be added that the Minister of Trade and Industry has the discretion to apply the Act to such space and space-related activities he deems necessary or desirable.[27]

In summary, South Africa has also covered those cases where it might be held internationally responsible for space activities which were actually (at least partly) privately conducted. Unequivocally so with respect to launch activities; at least optionally with respect to other space activities.

As to liability for private space activities, launches of space objects conducted from South

African territory, one of the four ways for South Africa to incur international liability for damage under international space law, automatically trigger application of the Act. With respect to the other three cases where South Africa may be held liable, the same applies as with regard to Russia. As long as the private entities concerned are either of South African nationality or operating from South African soil, the Act applies. Other than that, South African jurisdiction can not apply, and its potential liability can be dealt with only by means of the contracts involved.

3. Licensing Systems and Liability

3.1. Licensing Systems.

The central piece of both laws, as far as the issue of private enterprise is concerned, consists of a licensing regime. Thus, all activities as just defined, undertaken by any private entity as defined, require a license from the applicable government authority.[28] This concerns the Russian Space Agency with respect to Russia, and the South African Council for Space Affairs under the authority of the Minister of Trade and Industry as far as South Africa is concerned.[29]
Activities requiring a license, but carried out without it, or in violation of its terms, will constitute crimes under the respective laws.[30] Extensive mechanisms and compentences are provided for by the laws to allow the responsible government bodies to supervise and control the activities of licensees for this purpose.[31] The options of (temporary) withdrawal, suspension or amendment of licenses issued are available to the relevant bodies as well.[32]

3.2. Liability.

The most important elements of the licensing schemes in the light of international liability obviously concerns the issue of compensation for damages caused by licensed activities. Since the Liability Convention must be deemed an elaboration of Article VII of the Outer Space Treaty,[33] it should be concluded that at least its central provisions would be binding also upon South Africa as a signatory to the Liability Convention.
These central provisions could be summarized as follows. Absolute liability applies to damage caused by space objects to the earth or to aircraft in flight, subject to a possibility of exemption in case of what might be labelled 'contributory gross negligence'.[34] Fault liability on the other hand applies if the damage is caused to another space object.[35] Whether absolute or fault liability, any liability applies "jointly and severally": it is up to the liable states in case there is more than one, to deal with *inter se*-distribution of any burden of compensation.[36] Finally, compensation is to restore the victimized entity (respectively the state claiming on behalf of it, to the extent that the victimized entity is not a state itself) comprehensively to the situation existing before the damage occurred; in other words: it is basically unlimited.[37] It should be noted, that only this last issue has really been given attention also at the domestic level.

3.3. Other Domestic Regulations on Liability and Reïmbursement.

In the other cases where states have, by means of legal regulation, dealt with their possible international liability for private space activities, they have chosen different paths *vis-à-vis* the private entities in question. This concerns the United States, Sweden and the United Kingdom, having established national space laws, plus the special case of France and Arianespace.
On the one hand, the United States has chosen to limit the recourse to licensees for liability claims under international space law.[38] In a similar vein, Arianespace, as the sole private company whose activities so far can lead to international liability claims against France under the prevailing regime of the Liability Convention, needs to reïmburse the French government in such cases up to a maximum of FF 400 million per launch.[39]
On the other hand, both Sweden and the United Kingdom have, in their respective national space laws, included the obligation in principle for any licensee to comprehensively reïmburse any international liability claim against their respective governments.[40] Only in Sweden the applicable government authorities are granted some discretion in deviating from such a course with regard to a particular license.[41]

3.4. Liability and Reïmbursement in the Russian and South African Contexts.

Both the Russian Law and the South African Act strongly suggest a following of the approach of Sweden and the United Kingdom, rather than providing explicitly and 'across the board' for maxima of reïmbursement. While the terms and conditions for being granted a license under the Russian Law remain to be established by further legislation,[42] it would seem that the organizations or persons ultimately accountable for the damage, including the cases of damage dealt with by the Liability Convention, shall have to bear the burden of compensation to the full.[43]

Drafted differently, but equally ambiguous, the South African Act provides for the competence of the Council to include conditions for a prospective licensee relating to the "international obligations and responsibilities" of South Africa.[44] One of the major obligations flowing from international space law is that of liability in the terms of Article VII of the Outer Space Treaty and the Liability Convention. Therefore, the point of departure in respect of conditions included in the license relating to such international liability should be that of full compensation.[45]

On the other hand, so far in Russia as much as in South Africa discretion of the applicable government body to provide for limitations to reïmbursement is not explicitly excluded or limited. In both cases of national space legislation therefore, the last word has not yet been said on the proper meaning of the phrases mentioned as to the requirements relating to liability and reïmbursement. Alternatively, one would have to wait for actual disputes before an authoritative interpretation could arise.

The same applies basically if one approaches the subject from another angle. Closely related to any reïmbursement is the condition to provide for the necessary insurance in this respect.[46]

The Russian Law provides for compulsory insurance to the amount set by (prospective) legislation.[47] The South African Act, in view of "the national interests" of South Africa,[48] would at least seem to suggest inclusion of the same or a similar condition for a license; yet, it is again far from unambiguous.[49]

4. Other Fundamental Obligations of International Space Law

Other than the question of third party liability, a few paramount substantive obligations of international space law would require being taken account of in national space legislation dealing with private space entrepreneurs. Private entrepreneurs are, after all, primarily focused on the financial aspects of space activities. Without further ado, they might tend to loose sight of other obligations of a more public-oriented character. Such obligations typically concern the mandatory peaceful character of space activities, due regard for the environment, and the promotion of international cooperation. It is clear that, in order for such principles to remain relevant, private entities active in outer space will have to be held to these obligations just as much as states and intergovernmental organizations are held to respect them. The applicable licensing system would seem to provide a useful tool for that purpose.

4.1. The Peaceful Character of Space Activities.

With respect to the peaceful character of space activities, the following provisions of international space law are important. Space activities are to be carried on "in the interest of maintaining peace and security".[50] Fundamental furthermore is the distinction between the area of outer space as a whole, where actual prohibitions only extend to weapons of mass destruction, and the moon and other celestial bodies, which may be used for peaceful purposes only.[51] Because the issues of what should exactly be understood by the term "weapons of mass destruction", respectively what constitutes "exclusively peaceful purposes" have not yet been settled, it becomes interesting to take a look at the extent in which, for example, the Russian and South African laws have dealt with these issues.

4.2. Peaceful Space Activities in the Russian Context.

The Russian Law provides for one of the main goals of Russian space activities as being the solution of "global problems of mankind", *inter alia* by controlling "the implementation of international treaties concerning armaments and

armed forces".[52]
More specifically, it is prohibited "to put into orbit around the Earth or to deploy otherwise in outer space nuclear weapons and any other kinds of weapons of mass destruction; [and] to test nuclear weapons and any other kinds of weapons of mass destruction in outer space" - terms closely corresponding to those of the Outer Space Treaty.[53] If anything, the Russian Law's prohibition is wider in scope than that of the Outer Space Treaty.
Also, it is prohibited "to use space objects and other space technics as a means of influence upon the environment for military and other hostile purposes; [and] to use the Moon and other celestial bodies for military purposes".[54] As to the latter, apparently the interpretation of "exclusively peaceful purposes" of Article IV as being 'non-military purposes' has not changed since the days of the former Soviet Union.[55] Finally, it might be noted that "deliberate elimination of space objects in outer space" is also outlawed.[56]

4.3. Peaceful Space Activities in the South African Context.
The South African Act also provides some interesting provisions from the point of view of international space law. For weapons of mass destruction the definition is used of "any weapon designed to kill, harm or infect people, animals or plants", this weapon being of a nuclear, chemical or biological nature, including any "delivery system" thereof.[57] Then, "dual-purpose technologies" are defined as "space technologies which can contribute to the proliferation of weapons of mass destruction".[58] Control and restriction of activities involving such dual-purpose technologies in conformity with South Africa's international obligations, is a major element of South African space policy.[59] This obviously refers to the provisions *inter alia* of Article IV of the Outer Space Treaty, providing the parameters for controls and restrictions in that respect.
Similarly, conformity with the international obligations of South Africa with respect to "the peaceful utilization of outer space" represents a major policy goal.[60] By implicitly referring back to the international treaties for the definitions of the relevant terms, the Act once more brings to the fore the desirability on the international level to agree upon more specific interpretations thereof.

4.4. Protection of the Environment.
As to the environment, it should be noted that relatively few specific international space law rules on this issue have been established so far. The most commonly cited provision in this respect relates to the requirement to study the possibility of harmful contamination when undertaking space activities, and adopt appropriate measures.[61] Of indirect relevance furthermore is the United Nations Resolution on the use of nuclear power sources, aimed at minimizing *inter alia* environmental risks in this particular area of space activities by means of technical and operational precautionary measures.[62]

4.5. Protection of the Environment in the Russian Context.
The Russian Law provides for the protection of the environment as a guiding principle for all space activities.[63] More specifically, as mentioned, the "use [of] space objects and other space technics as a means of influence upon the environment", at least for "military and other hostile purposes", is prohibited, and likewise it is not allowed to cause "harmful contamination of outer space which leads to unfavourable changes of the environment".[64] Finally, it may be noted that the Russian Space Fund which is created by the Law, could be called upon for the elimination of harmful effects of space activities on the environment.[65]
Obviously, therefore, the relevant competences of applicable government bodies can be used to protect the environment to the extent desired - at least by the respective government - in any licensing process with respect to private activities.

4.6. Protection of the Environment in the South African Context.
As to South Africa, the Act only refers to its international obligations in general, which includes of course the Outer Space Treaty's Article IX as dealt with above.[66] This approach, of squarely referring to international obligations, has the advantage of flexibility and

inherent congruity with the international norms, in whatever direction they develop. From the practical point of view it may perhaps serve at the same time to obscure the exact extent of duties in this respect awaiting a licensee-to-be. Whether this disadvantage off-sets the advantage mentioned however would be rather doubtful.

4.7. International Cooperation in Space Activities.

Finally, an important feature of public international space law is the principle of international cooperation. While it is difficult to distill any clear-cut positive obligations resulting from this principle at the international level, the principle is found especially throughout the Outer Space Treaty. Thus, it is provided that states "shall facilitate and encourage international cooperation" in scientific investigation in outer space.[67] Also, the exploration and use of outer space shall be carried out in the service of "promoting international cooperation and understanding".[68] Flowing from this general provision is the duty for states "to consider (...) any requests [by other states](...) to observe the flight of space objects" and the requirement to inform the international community, "to the greatest extent feasible and practicable", of their own space activities.[69]

4.8. International Cooperation in the Russian Context.

The principle of international cooperation figures prominently in the Russian Law.[70] Actual projects of international cooperation are predominantly the domain of the Russian Space Agency, albeit that the Ministry of Defense basically has to concur in such matters, in a manner yet to be legislated.[71] However, such provisions regard the public level in Russia only. No specific element of the principle of international cooperation, such as the provision of information to other states, is explicitly mentioned in relation to the licensing process. This is also the case with Section VI of the Russian Law, which deals with international cooperation in somewhat more detail.[72] As a consequence, any further evaluation of this issue will have to wait for the various pieces of legislation yet to be established, or for a thorough analysis of Russian licenses provided.

4.9. International Cooperation in the South African Context.

International cooperation as such is not explicitly mentioned in the South African Act. South African policy should meet the "international commitments" of South Africa, but seems to be essentially focused in this respect on international obligations and agreements.[73] This is also reflected in the requirements established for the licensing process.[74]

Thus, the South African Act also lacks more specific references to the principle of international cooperation as this was established on the international level. This may be deemed logical however, in view of the abstract nature thereof, even in the specific instances concerning observation of spaceflights or information on space activities - which are to be considered in good faith respectively to be provided as far as feasible and practicable. Moreover, once again the general and broadly formulated discretionary competences of the South African Minister of Trade and Industry and the South African Council for Space Affairs obviously leave open the possibilities to include clearly identifiable duties for private entities in future licenses.

5. Conclusion

In conclusion, both the Russian Law and the South African Act provide interesting examples of domestical implementation of paramount rules of international space law with respect especially to private entities - not in the least, because on some issues they help further defining key terms and notions of international space law, while on other issues begging precisely for such further interpretations.

This concerns the structural issue of responsibility, as well as substantive issues. As to the first, the two national laws serve as two important expressions of *opinio juris* regarding the interpretation to be attached to 'national activities' for the purpose of international responsibility with respect to private entities - namely based on the exercise of jurisdiction on the basis of territory as well as of nationality.

As to the substantive issues, alternatively choices have been made to (try to) enumerate

more in detail the issues concerned (especially in the case of Russia) or to simply and squarely refer to 'international obligations' (somewhat more frequent in the case of South Africa), when it comes to the possible inclusion of such substantive obligations in licenses to be granted. The large measure of discretion for the relevant government bodies in these respects leave room for both flexibility on the government level and uncertainty on the private level. Whichever of these is the more important can not be determined *in abstracto*, but will probably depend upon the circumstances of a concrete case.

By and large, while sometimes complicating things, the two laws present useful tools for the respective governments to take care of their international responsibilities and liabilities as they may arise in consequence of partly or wholly private activities.

References:

1. Law of the Russian Federation on Space Activities (hereafter Russian Law), signed into law 20 August 1993. English translation: ESALEX database with the European Space Agency in Paris (accessible by modem or Internet); German translation by official interpreter: 44 Zeitschrift für Luft- und Weltraumrecht (1995), 43-56.

2. Cf. e.g. 3rd preamb. para., Russian Law; also E. Kamenetskaya, V.S. Vereshchetin & E. Zhukova, *Legal regulation of space activities in Russia*, 9 Space Policy (1993), 121-3; J.H. Heintze, *Das russische Weltraumgesetz vom 20. August 1993 [The Russian Space Law of 20 August 1993]*, 44 Zeitschrift für Luft- und Weltraumrecht (1995), 36-7.

3. Space Affairs Act (hereafter South African Act), No. 84 of 1993, assented to 23 June 1993, date of commencement 6 September 1993. Statutes of the Republic of South Africa - Trade and Industry, Issue No. 27-Supplementary, 21 (both in English and in Afrikaans).

4. See e.g. I. De Villiers Lessing, *South Africa: Recent Developments in Space Law*, 1 Telecommunications & Space Journal (1994), 139-42.

5. See e.g. Art. 4(2), last sent., Russian Law; Secs. 2(1.a), 11(2.c), South African Act. Also on the Russian Law: Heintze, 37; respectively on the South African Act: De Villiers Lessing, 139-41.

6. Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (hereafter Outer Space Treaty), adopted 19 December 1966, opened for signature 27 January 1967, entered into force 10 October 1967. 18 UST 2410; TIAS 6347; 610 UNTS 205.

7. Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (hereafter Rescue Agreement), adopted 19 December 1967, opened for signature 22 April 1968, entered into force 3 December 1968. 19 UST 7570; TIAS 6599; 672 UNTS 119.

8. Convention on International Liability for Damage Caused by Space Objects (hereafter Liability Convention), adopted 29 November 1971, opened for signature 29 March 1972, entered into force 1 September 1972. 24 UST 2389; TIAS 7762; 961 UNTS 187.

9. Convention on Registration of Objects Launched into Outer Space (Registration Convention), adopted 12 November 1974, opened for signature 14 January 1975, entered into force 15 September 1976. 28 UST 695; TIAS 8480; 1023 UNTS 15.

10. See e.g. 1994 Annual Report of the IISL Standing Committee on the Status of International Agreements Relating to Activities in Outer Space, Proceedings of the Thirty-Seventh Colloquium on the Law of Outer Space (1995), 363.

11. Art. 2(1), Russian Law.

12. Art. 2(2), Russian Law.

13. See Art. V, Outer Space Treaty, and the Rescue Agreement.

14. See Art. VII, Outer Space Treaty, and the Liability Convention.

15. See Art. VIII, Outer Space Treaty, and the Registration Convention.

16. Art. VI, Outer Space Treaty.

17. Sec. 1, 19th def., South African Act.

18. Sec. 1, 22nd def., South African Act.

19. See Art. VI, Outer Space Treaty.

20. Cf. e.g. the author's *Liability Versus Responsibility in Space Law: Misconception or Misconstruction?*, Proceedings of the Thirty-Fourth Colloquium on the Law of Outer Space (1992), 363-71. See also notes 51, 58 and 59 thereof for a choice of authors having vented their different opinions on the subject.

21. See Art. VII, Outer Space Treaty, and Artt. I(c), II, III, IV and V, Liability Convention.

22. Art. 9(2), Russian Law. Cf. also Art. 18(4), Russian Law, including activities of Russian nationals outside the "jurisdiction" of any state respectively under the "jurisdiction" of a foreign state in the scope of the Law.

23. See on this issue further e.g. the author's *The Illogical Link: Launching, Liability and Leasing*, Proceedings of the Thirty-Sixth Colloquium on the Law of Outer Space (1994), 351-2.

24. See resp. Sec. 11(1.a) and 11(1.b), South African Act.

25. Sec. 11(1.c), South African Act.

26. See Sec. 11(1.d), South African Act.

27. Cf. Sec. 11(1.e), South African Act.

28. See Art. 9(2), Russian Law, and Sec. 11(1), South African Act, respectively.

29. Cf. Art. 6(2), Russian Law, respectively Sec. 11(1), South African Act. The Russian Space Agency is in existence as of 9 April 1992; see 20 Journal of Space Law (1992), 106-9, for its Statute. The South African Council for Space Affairs was created by the South African Act itself; see Sec. 4.

30. See Art. 9(4), Russian Law, respectively Sec. 23, South African Act. The latter lays down a relatively elaborate scheme, providing *inter alia* for maximum fines of 1 million South African Rand or maximum imprisonment for ten years in case of the conduct of activities in the absence of, or in violation of the required license, and lesser penalties for other offences related to the licensing regime.

31. Cf. e.g. Artt. 5(2), (3) and (4), 9(3), Russian Law; be it that the actual contents of the supervision- and control-mechanism will have to be formulated yet; respectively Secs. 10, 11(4), 12(1), South African Act.

32. Cf. Art. 9(3), Russian Law, referring formulation of its terms to further legislation by the Russian government; Sec. 13, South African Act, which also, in conjunction with Secs. 11(3) and 12(3), allows for some opportunities for the (prospective) licensee to defend his case.

33. Cf. already the Preamble of the Liability Convention.

34. See Artt. II, Liability Convention, respectively Art. VI(1), Liability Convention. The possibility of exemption from absolute liability is further qualified by Art. VI(2), Liability Convention.

35. See Art. III, Liability Convention.

36. Artt. IV(1) and V(1), Liability Convention, and as to *inter se*-distribution, Art. IV(2) and V(2).

37. See Art. XII, Liability Convention. Only the "principles of justice and equity" could serve to limit the compensation ultimately to be paid.

38. Under Sec. 16(a.1.A) of the Commercial Space Launch Act of 1984 as amended 1988 (Public Law 100-657, of 15 November 1988; 102 Stat. 3900), the United States government will only have recourse to the licensee actually causing the damage in case of an international claim to the extent the Secretary of Transport has deemed necessary, but in no case for more than US$ 500 million per accident. The actual maxima provided by the Secretary in licenses for the largest category of launch vehicles were considerably lower: in the range of US$ 160-215 million. Cf. e.g. P.L. Meredith & G.S. Robinson, Space Law: A Case Study for the Practitioner (1992), 67.

39. See Artt. 3(8), 4(1), Declaration by Certain European Governments Relating to the Ariane Launcher Production Phase, 6 Annals of Air and Space Law (1981), 723-37. Also V. Kayser, *An Achievement of Domestic Space Law: U.S. Regulation of Private Commercial Launch Services*, 16 Annals of Air and Space Law (1991), 377; M.G. Bourély, *La Production du Lanceur Ariane [The Production of the Ariane Launcher]*, 6 Annals of Air and Space Law (1981), 307.

40. See Art. 6, Swedish Act on Space Activities; Sec. 10(1), UK Outer Space Act; 36 Zeitschrift für Luft- und Weltraumrecht (1987), 11-2 resp. 12-6. Also further J. Reifarth, *Nationale Weltraumgesetze in Europa [National Space Laws in Europe]*, 36 Zeitschrift für Luft- und Weltraumrecht (1987), 3-10.

41. Cf. Sec. 6, Swedish Act on Space Activities: "unless special reasons tell against this [full reïmbursement]".

42. See Art. 9(3), Russian Law.

43. See Art. 30(2), Russian Law. The formulation of this provision is rather general and not very exact, leaving some doubt as to the inclusion of third party-liability therein. In view of the full liability which the Russian Federation assumes itself under Art. 30(1), the better view however seems to be the one submitted.

44. Sec. 11(2.c), South African Act. Sec. 11(2.a) and (2.b) respectively, it may be noted, refer to minimum safety standards - a legal safety device next to that of liability itself - and the national interests of South Africa.

45. See Sec. 14(2), South African Act, in conjunction with Sec. 14(1), where the Council is competent to "determine, limit or exclude the liability of the licensee". The absence of use of terms such as "recourse" or "reïmbursement" throughout the Act is thereby interpreted in the sense that the term "liability of the licensee resulting from international conventions" includes such liability-by-proxy; cf. Sec. 14(1.b). Since Sec. 14(2) explicitly does not refer to Sec. 14(1.b) but to Sec. 14(1.a) in providing for the aforementioned competence, one should perhaps *a contrario* proceed from the assumption that the Council does not have this competence of determining, limiting or excluding liability when it comes to this particular subsection dealing with international liability.

46. See Sec. 16(a), Commercial Space Launch Act as amended, for the United States.

47. See Art. 25(1), Russian Law. Of course, this provision regarding prospective legislation also points to a general discretion in applying maximum recourse. The insurance is to cover *inter alia* "property damage to third parties"; the exclusion of damage to the life and health of third parties must be blamed on imprecise drafting or difficulties in translation if it is not to result in absurd consequences.

48. Sec. 11(2.b), South African Act.

49. Confusingly, optional inclusion of such a condition "relating to (...) security to be given by the licensee for (...) damages" is only mentioned in respect of the "liability of the licensee for damages", Sec. 14(1.a.) sub ii) and i) respectively. Should one really read from this, however, that for the type of liability dealt with by Sec. 14(1.b), being international liability, no such condition may be imposed?

50. Art. III, Outer Space Treaty.

51. See Art. IV, 1st sent., respectively 2nd sent., Outer Space Treaty. With respect to the latter, the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (adopted 5 December 1979, opened for signature 18 December 1979, entered into force 11 July 1984; 18 ILM 1434; 1363 UNTS 3) in Art. 3 provides further guidance.

52. Art. 3(1) and (2), Russian Law.

53. Art. 4(2), Russian Law. Art. IV, 1st sent., Outer Space Treaty in this regard reads: "to place in orbit around the earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, install such weapons on celestial bodies, or station such weapons in outer space in any other manner".

54. Art. 4(2), Russian Law. Cf. again the wording of Art. IV, Outer Space Treaty, in this respect.

55. See on this issue e.g. C.Q. Christol, The Modern International Law of Outer Space (1982), 27-30.

56. Art. 4(2), Russian Law.

57. Sec. 1, 27th def., South African Act, refers to the Non-Proliferation of Weapons of Mass Destruction Act, No. 87 of 1993, assented to 23 June 1993, effective 16 August 1993 (Statutes of the Republic of South Africa - Arms and Ammunition, Issue No. 27, 231); where Sec. 1, 36th def., provides the definition quoted.

58. Sec. 1, 6th def., South African Act.

59. See Sec. 2(1.b), South African Act.

60. Sec. 2(1.a), South African Act.

61. See Art. IX, Outer Space Treaty.

62. UNGA Res. 47/68 of 14 December 1992, e.g. Princc. 3, 4.

63. See Art. 4(1), Russian Law.

64. Art. 4(2), Russian Law. Cf. in this regard also the role of the RKA in monitoring space activities, Artt. 6(2), 22(1), Russian Law; and, more generally, Artt. 23, 24, Russian Law, on the investigation of accidents and the related search, rescue and clean-up operations.

65. See Art. 13(3), Russian Law.

66. See e.g. Sec. 11(2.c), South African Act, concerning the conditions to be included in licenses. Also, in general, Sec. 2(1.a), South African Act.

67. Art. I, 3rd sent., Outer Space Treaty.

68. Art. III, Outer Space Treaty.

69. Art. X respectively Art. XI, Outer Space Treaty.

70. See Art. 4(1), Russian Law, establishing promotion of international cooperation as a fundamental principle for Russian space activities. Cf. also Art. 8(2), Russian Law, making the "task to expand international cooperation" part of the Federal Space Program.

71. See Artt. 6(2), 8(1), Russian Law.

72. Art. 26, Russian Law, deals with the international obligations (to be) undertaken by Russia, para. 4 repeating the promotion of international cooperation as a task for Russia. Art. 27, Russian Law, provides for an elemental legal regime applicable to private foreign entities cooperating with Russia or Russian entities. Art. 28, Russian Law, obliges any entity involving itself in international projects to conclude the appropriate agreements.

73. Sec. 2(1.a), South African Act; cf. further Secc. 2(1.b), 5(2) & (3.c), South African Act.

74. See Sec. 11(1.d) sub i) and (2.c), South African Act. Cf. also Sec. 22(1.g), South African Act.