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PERCEPTIONS ON THE DEFINITION OF A "LAUNCHING STATE" AND *SPACE DEBRIS RISKS*

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1. Introduction

The purpose of this paper is to pursue work on the elucidation of the launching state issue in light of the space treaties in force and recent developments concerning commercial space activities. A number of contradictions may be traced on this matter today whose consequences are undesirable in the present state-of-the-art. The lack of consensus on the term "launching state" -let alone "launching authority", as worded in the Astronauts Agreement- has been pointed out by the doctrine with increased frequency and becomes a matter of concern in the present world scenario.

A second matter of concern is based on the obscurity of the concept of reference vis-à-vis the emerging risks of damage caused by space debris, especially having in mind the growing participation of private entities in space activities and the existing doubts on the ability of these private enterprises to prevent damage resulting therefrom. The difficulties involved in the lack of agreement on the concept of "launching state" become particularly dangerous in this context. For these reasons the paper will also be addressing some of those difficulties with a view to paving the way for realistic solutions on this question.

2. Outlining the problem

The issues of responsibility and liability for space activities are strongly related to launch services. These, in turn, call for more precise national laws on the matter given the unprecedented growth of private activities in space.

Part of the doctrine, among who most of the members of the ILA Space Law Committee may be counted, consider that Article VI of the 1967 Outer Space Treaty entails an obligation of States to enact national laws on the authorisation and supervision of activities of non-governmental bodies in outer space[1]. Therefore, at first sight, commercial space activities in general - and launch services, in particular - appear conveniently covered in the present state-of-the-art by Article VI of the 1967 Treaty provided States Parties observe in good faith their obligations to authorise, supervise and, as the case may be, to implement an efficient licensing system[2].

Be that as it may, some clarifications would be helpful at this stage without falling into too detailed regulations. To this end, the general idea is to think in terms of an agile, short protocol or any other kind of separate instrument designed for supplementing and giving a more precise legal framework to Article VI of the 1967 Treaty.

Professor Hobe -one of the four Special Rapporteurs of the ILA Space Committee- studied this question in depth to determine whether any adjustments were needed for the 1967 Space Treaty to be more consistent with the participation of private enterprises in space. The result was a Draft Protocol which stands out for its simplicity and which, together with the Final Report of the Committee on "Review of the Space Treaties in View of Commercial Space Activities – Concrete Proposals" *was thoroughly discussed in April 2002 at the New Delhi Working Session of the ILA Space Law Committee. The Report -containing the Protocol- was subsequently adopted by consensus at the Plenary Session of the 70th Conference of the International Law Association[3]. Hereunder the text of the proposed Protocol.*

Suggested Protocol to the 1967 Outer Space Treaty

Article 1: (amendment to Article I, 3, of the OST)

1. States Parties hereby agree that the use of outer space and celestial bodies is inclusive of all commercial uses.

2. States Parties are free to define the way in which they shall implement the principle of international co-operation. All commercial uses of outer space and celestial bodies shall be carried out for the benefit and in the interest of all states, irrespective of their degree of economic or scientific development, and shall be the province of all mankind. Particular account shall be taken of the needs of developing countries.

Article 2: (amendment to Article VI of the OST)

States Parties undertake to enact national legislation concerning authorisation and continuing supervision of space activities carried out by non-governmental entities.

Article 3: (amendment to Article VIII of the OST)

States Parties are under the obligation to register any object launched into outer space both on their national register and on the international register maintained by the Secretary-General of the United Nations in accordance with the Convention on the Registration of Objects launched into Outer Space.

Article 4: States Parties undertake to adopt an international legal instrument on the peaceful settlement of disputes which should include provisions for binding mechanisms. In this sense, the 1998 ILA Convention on the Settlement of Disputes related to Space Activities is referred to as a model[4].

In the process of elaboration of the above-mentioned Final Report of the International Law Association, among the terms of reference of the Space Law Committee the need to clarify the meaning of the term "launching state" was listed. Professor Kopal -Special Rapporteur for the Registration Convention- paid considerable attention to Article I of this text, recommending improvements on that Article in connection with definitions and, particularly, improvements on the definition of a "launching state".

The problem is indeed not new. It existed already within the context of the 1968 Astronauts Agreement which refers to a "launching authority" and no longer to a "launching State", The problem continued when the 1972 Liability Convention and the 1975 Registration Convention were adopted and went back to the term "launching State", originally used by the 1967 Space Treaty.

Naturally, in those days, problems were mainly of an academic nature. It was not easy to imagine the pace at which, a few years on, commercial activities in the new areas would be progressing. This phenomenon, however, had the virtue of simplifying certain traditional institutions and making them more agile. An illustrative example is provided by comparing dispute settlement procedures involving sovereign States –subjects par excellence *of public international law-, as would have been the case in the initial stages of space exploration, and the nowadays prompt and simple means available to parties to a dispute in the field of private international law and, particularly, international commercial arbitration.*

Thus, the long-standing controversy over state sovereignty and compulsory jurisdiction, and its sometimes very thorny implications, is nowadays losing momentum as a result of the participation of private companies in the use of outer space. In the present scenario many more actors are participating and an increasing number of private enterprises are investing heavily in space activity.

Professor Kopal –whose views were widely supported by the ILA Space Law Committee- believed that the best way to update the definitions embodied in Article I of the Registration Convention was by means of a separate agreement - possibly a protocol- to supplement the Convention.

Another course of action which was seen with favour was the adoption of a UNGA Resolution to shed light on the definitions issue. Having in mind the fact that the political will of the international community and, especially, of the space-faring nations, is not prepared for changes, such as drastic amendments to the Space Treaties in force, Professor Kopal's realistic recommendation was to take a cautious approach concerning any such course of action[5].

Even though the Registration Convention is not so closely related to the activities of private entities in space as are the 1967 Space Treaty and the Liability Convention, it is, undoubtedly, very closely linked to the latter and an indispensable complement thereof. Hence, the restricted scope of the definitions contained in Article I of the Registration Convention is clearly insufficient in the world of today.

3. Towards descriptions and clarifications

In the present international context the concept of "launching State" stemming from the Space Treaties in force appears outdated. A glaring example is provided by the formula "procure the launching" which is common to the Outer Space Treaty and the Liability and Registration Conventions and which raises, as will later be seen, not a few doubts.

On the occasion of Unispace III, in a discussion paper entitled "Existing United

Nations Treaties: Strengths and Needs"[6] *submitted by Professor Kopal, the need for review is clearly evident. This conclusion, in fact, was a common denominator in most sessions of the meeting. In this sense, Session 8 of the UN Workshop, entitled* "Maintaining the Space Environment", *refers in its* Summary Report *to the need to define the term "space object" and some other terms*[7] *amongst which, no doubt, "launching state" takes pride of place.*

As observed at the outset it is perhaps wise at this point in time to attempt descriptions rather than definitions. As is known, "to define" implies "to limit" and the idea is precisely the opposite. A description, for its very essence, can never be exhaustive.

It should be borne in mind as well that within the Working Group set up by the Legal Subcommittee of Copuos in 2001 as agenda item 9, under the chairmanship of Dr. Kai-Uwe Schrogl, the underlying idea was that no authoritative interpretation of the concept of launching state could emerge therefrom. An international intergovernmental conference would be essential when the time came to agree on any new formula. In the meantime it is for the doctrine to provide down-to-earth ideas leading to viable solutions.

4. Recent advancements on the launching state issue and the meaning of "procurement"

When dealing with commercial space activities, and particularly with launch services, the outstanding issue nowadays is the identification of the launching state. As pointed out earlier the Space Treaties are not too precise on this question. The fact that the Astronauts Agreement introduces the term "launching authority" -even though the Liability and Registration Convention went back to the "launching state" formula- is clearly indicating that not only States who launched or procured a launching, or from whose facilities a launching occured should be considered as such. This idea existed, no doubt, in the mind of the drafters of the 1968 Agreement.

Another source of doubt and controversy surrounds the meaning of the term "procurement", especially when private entities are involved in space activities. A first hurdle to overcome is, therefore, to agree on what should be understood by "procurement". An elucidation of this term is essential before any progress on the "launching state issue"[8] is attempted.

In this quest, Edward Frankle and E. Jason Steptoe (General Counsel and Associate General Counsel, respectively, of NASA) provide food for thought with their pointed observations based on experience. I shall focus on some of the issues raised in their presentation to a Workshop on "Commercial Launch Activities" *held in Bremen on 19 January 2000 as part of the activities included in Project 2001 on the Legal Framework for the Commercial Uses of Outer Space*[9]*, headed by Professor Karl-Heinz Böckstiegel and his team from Cologne University.*

As may be expected when streamlining this paper, a very realistic approach is reflected. The authors put an accent on the need for states to examine the treaties currently in force and all available mechanisms before embarking in the creation of new law. It is important, they underline, to centre attention on state responsibility for licensing, continuing supervision of non-governmental entities and to make sure that a just compensation is always readily available [10]. Commercial mechanisms are favoured for solving controversies which are essentially commercial. To this end the authors suggest encouraging States to maintain active licensing programmes and adequate compensation arrangements. Such approach, in their view[11], is a good alternative to lengthy procedures aimed at establishing the precise scope of state responsibility. No doubt this idea would go a long way in avoiding conflicting interpretations of the existing treaties within the complex structure of public international law.

Let us now move on to the analysis of the term "procure the launching", common to the 1967, 1972 and 1975 Space Treaties. Also in this field the above-cited experts follow a very pragmatic approach. On the basis of Article I of the Liability Convention and the possibilities established thereby (participation in a launching activity, procurement of a launching and use of launch facilities as requirements to be a launching state) the authors point out that liability exposure exists when a launch takes place from national or international territory. Yet, the space treaties do not define any of these terms.

However , when following the authors' reasoning further one cannot but agree with them that the least clear of the bases to attribute liability to a state is when it "procures a launching"[12]. This expression lends itself to misinterpretations which are even more serious where private enterprises are involved. The drafting of the space treaties, on this point, does not appear consistent with the present era of commercialisation of space activities. These shortcomings, however, are not enough to

justify the introduction of changes thereto.

Interesting, for its implications, is the research carried out by Frankle and Steptoe in connection with the drafting history of the space treaties. One of their conclusions, stemming from the Liability Convention, is that "to procure" was intended to mean active and substantial participation in launching activities[13]. This interpretation is in line with Article 31 of the Vienna Convention on the Law of Treaties laying down rules on interpretation which should be carried out in accordance with the ordinary meaning to be given to the terms in the context and in the light of the object and purpose of the treaty.

In short, the NASA experts identify a few examples of what the drafters intended to be the meaning of "procures a launching", as follows:

- Exceptional arrangements in which a state might induce another state to conduct a launch from the first state's territory, presumably with its active participation in launching decisions[14], or
- Cases in which the state arranging the launch plays a substantial role in the project.

However so, it remains to be established what the situation would be when all actors involved in launching services are private parties. It can be argued, in accordance with Article VI of the 1967 Space Treaty, that the State cannot say it knew "nothing about it" if we have in mind the obligations of authorisation and supervision resulting from that Article.

As indicated by Dr. Schrogl, the responsibility and liability of states also occurs for commercial activities of non-governmental entities. Consequently, national laws should also include rules on indemnification and compensation[15].

Therefore, the most practical solution is for States Parties to the 1967 Treaty to enact national laws establishing effective licensing systems for private enterprises operating launch services. Indeed, as underlined earlier, this is an obligation arising from the Treaty whereby states should act in good faith to make the licensing mechanisms fully reliable. In this context Article 27 of the Vienna Convention establishing that provisions of internal law may not be invoked to justify a failure to perform a treaty is fully applicable.

An overall conclusion is, therefore, that is not necessary to change international treaties in connection with the launching state issue and that lacunae *should be covered by national legislation laying down effective procedures for authorising, supervising and licensing private enterprises operating launch services and, in general, conducting activities in outer space*[16].

On the occasion of the International Colloquium held in Cologne to mark the end of Project 2001, the Working Group on Launch and Associated Services expressed similar views. A consensus is therefore growing to the effect that the terms "launching state" and "launching authority" should not be changed in the space treaties as this would entail a very complex procedure of amendments at a time when the political scenario is not really prepared for it. Consequently, the role to be played by national space legislation in the present time is of major importance.

5. The Copuos Working Group on the concept of "launching state"

At the outset of the fortieth session of the Legal Subcommittee of Copuos a Working Group was set up with the mandate of reviewing the concept of "launching state". This task was to be carried out without amending or interpreting the existing treaties, as the terms of reference for the Group proclaimed. On this occasion the importance of national legislation and licensing régimes were highlighted once again. The Working Group also invited states and international organisations to send information on state practice, including states that did not currently have national space laws[17]. Presentations were made on these points by Australia, China, France, Sweden, the United Kingdom, the European Space Agency, the International Law Association, the International Astronautical Federation and the International Mobile Satellite Organisation[18].

A wide range of opinions were voiced on the occasion. Some delegations remarked that, even though Article V of the Liability Convention provided for the joint and several liability of all launching states for damage caused by a space object, it was still possible for States to conclude arrangements modifying and apportioning liability between them. This stand would set aside to some extent the "launching state issue". It seems, in fact, a reasonable mid-way response to that issue without falling into unwanted interpretation efforts.

A practical example of national space legislation bridging the gaps left by international law without the need to amend the existing treaties is provided by the United Kingdom. This country has enacted specific national law on space activities. The presentation made by the British delegate to the Working Group on the occasion in question focused on the 1986 Outer Space Act applicable to UK nationals, including individuals and corporations, and to activities carried out in the UK

or elsewhere. This meant establishing jurisdiction over space activities, requirements to obtain a licence (after ensuring that the activity should not jeopardise public health or national security), penalties, registration requisites and the obligation to indemnify the government for liability[19].

One of the remaining problems, as pointed out to the Working Group by the delegation of France[20], might result from new launching techniques and increasing commercialisation of space activities. Furthermore, some concern was shown in cases of launching from an international territory which could lead to "forum shopping" or flags of convenience on the part of private entities. This assumption, however, could be adequately solved through appropriate arrangements between the entities concerned.

It is expected that the newly-established Working Group within the Legal Subcommittee of Copuos, with the mandate of dealing with the very wide topic of the status and application of the five United Nations Treaties on Outer Space, will continue work on the review of the launching state issue in light of the most recent experiences, state practice and doctrine on the basis of the general idea that the existing space treaties ought not to be amended.

6. Space Debris Risks in a Changing Scenario

Indeed the risk of damage resulting from space debris is infinitely higher now than at the time of drafting the Space Treaties the last of which -the Moon Agreement- was adopted in 1979. As a consequence of the growth of the commercial aspects of space activities the issue is no longer one for academic discussion alone. The possibility of damage has grown considerably in the present world scenario.

The problem was addressed -following the interdisciplinary approach that identified the Unispace III Workshop referred to previously- by a number of participants who expressed their preoccupation for a question likely to become unmanageable unless some specific international regulation is agreed upon. Among them, let us pause briefly on Professor Kerrest's very precise remarks on prevention and mitigation of space debris, made at the last Session of the Workshop entitled "Maintaining the Space Environment"[21].

In the view of this author, speaking of prevention, at this stage, did not seem realistic. If we are to get involved in the mitigation of space debris one cannot escape the fact that costs involved in any such procedure are astronomic. Moreover, it is fair to say, as pointed out by Professor Kerrest[22], that no private entity would be prepared to accept those costs unless its competitors followed suit. This is a natural rule of the market underlying commercial space activities.

In this respect a short reference will be made to a recent South American experience[23]. When the Argentine Republic decided to embark in the construction of its first domestic satellite –which was launched into GEO in 1997- an international bid was opened to establish who would be in charge of this construction. When discussing the various conditions and modalities of the agreements the possibility of having a clause whereby the operator of the satellite should be made responsible for its removal from GEO at the end of its active life was envisaged. In practice, however, this idea did not materialise as it implied a disadvantage for that operator *vis-à-vis* others who were not obliged to any such removal procedures. In fact, the operator in question, in order to comply with that obligation, would have to use the last available power of the satellite for the removal operation, with the consequent reduction of the active life of the satellite.

In light of these facts and realities it is not difficult to conclude that the commitment originating in Article VI of the 1967 Space Treaty should be seen as an obligation imposed on States to adopt national laws on this topic. Furthermore, as private enterprises may tend to switch nationalities, it is reasonable to suggest that States and international organisations be encouraged to accept and duly observe the outer space treaties in force. In the pursuance of these objectives the principle of international co-operation appears of significant value.

7. Outlining conclusions

Finally, a couple of conclusions have been designed for each of the topics addressed in this paper.

(a) the launching State issue

From the foregoing paragraphs it follows that references to a "launching State" and "launching authority" in the existing space treaties should remain as they stand. The general view appears to be totally against introducing amendments to these texts.

This leaves us with the possibility of drafting a separate international instrument dealing with an updated concept of launching consistent with the contemporary reality. The idea is good in spite of the political will of space-faring nations not being

the best at the moment.

For these reasons the accent should be on national space legislation. This course of action, to be seen as mandatory in accordance with Article VI of the 1967 Space Treaty is, by and large, simpler, more agile and possibly more effective.

Naturally, States should act in good faith when passing national laws on the issues of authorisation, supervision and licensing of private enterprises to operate launch services and ensure the availability of a just compensation to avoid the international obligations becoming a dead letter.

(b) space debris risks

In the present international context, where the space activities of private entities are growing in a scale without precedent, space debris risks become an aggravated problem. It is doubtful whether these commercial enterprises, in the event of damage caused by launching operations, will be able to meet the ensuing liability issues. Here again a sound insurance system, coupled with effective domestic legislation, seem at the moment the most realistic answer.

References

1 See REPORT OF THE 70TH CONFERENCE OF THE INTERNATIONAL LAW ASSOCIATION, New Delhi, 2-7 April 2002, Space Law Committee. Most of the members of this Committee see this obligation as implicit in Article VI of the 1967.

2 It should be noted that some authors, like Professor Kolosov, firmly hold the view that problems arising in connection with the activities of private enterprises in space should be left entirely to national space legislations. See Proceedings of the Workshop on Space Law in the Twenty-First Century", p.31, Unispace III, Technical Forum, July 1999.

3 This Report and ensuing ILA Resolution were introduced by the ILA representative to the Forty-Fifth Session of the UN Committee on the Peaceful Uses of Outer Space, in Vienna, on 6 June 2002.

4 See op.cit. in note 1, chapter on the Review of the 1967 Outer Space Treaty in View of Commercial Space Activities – Concrete proposals.

5 See op.cit. in note 1 supra, chapter on the Registration Convention.

6 See "Proceedings of the Workshop on Space Law in the Twenty-First Century", at p. 19, Unispace III, Technical Forum, July 1999, Vienna, where the author makes reference to a Working Paper submitted by Germany to the LSC of Copuos (Doc. A/AC.105/C.2/L.211/Rev.1 of 30-03-1998). Cf. Eilene Galloway, in her Commentary Paper, at p. 27.

7 See op.cit. in note 6 supra, p.217.

8 Project 2001 very clearly underlined the "launching state issue" from its initial steps, particularly in the context of one of its Working Groups addressing the issue of "Launch and Associated Services". See "Project 2001: Legal Framework for the Commercial Use of Outer Space", Carl Heymanns Verlag 2002, p.73 et seq.

9 Project 2001 was conducted by Professor Karl-Heinz Böckstiegel, Cologne University, between 1998-2001. The Project, of undoubted international scope and implications, came to a close in May 2001, and was marked by a Colloquium entitled "Project 2001: Legal Framework for the Commercial Use of Outer Space – Recommendations and conclusions to develop the present state of the law" . The book, edited by Karl-Heinz Böckstiegel, was published in 2002 by Carl Heymanns Verlag KG (Köln, Berlin, Bonn, München).

10 See Frankle and Steptoe, "Legal Considerations affecting Commercial Space Launches from International Territory", Proceedings of the Workshop on "Legal Framework for Commercial Launch and Associated Activities", Bremen, January 2000" (Project 2001), p.68.

11 Ibid., p.65.

12 Ibid., p.66.

13 Ibid., p. 67.

14 For example, as indicated by the authors, the San Marcos project which brought together the US and Italy and where NASA was conducting launches with Italy both from US territory and the Indian ocean. Italy, as pointed out by Frankle and Steptoe, took active part in these launchings and this was sufficient to constitute "procurement" from the US.

15 See Karl-Uwe Schrogl, "Responsibility and Liability – Need for national regulation (including harmonisation)", in Proceedings of the Workshop on Commercial Launch Activities, Project 2001, Bremen, January 2000, pp.155-157.

16 This conclusion is in line with Professor Kopal's thinking on the cautious approach to be taken when considering amendments to the space treaties and stressing the need to "ease identification through national and international space regulation". It coincides as well with the stand of the ILA reflected in the Report of the Space Law Committee to the London 2000 and New Delhi 2002 Conferences (op. cit. in note 4) where Prof. Kopal was the Special Rapporteur for this topic.

17 UN Doc. A/AC.105)763, Annex II, p. 22.

18 See Conference Room Paper A/AC.105/C.2/2001/CRP.10.

19 Ibid., p. 23.

20 See Doc. A/AC.105/738 (20 April 2000), p.18 and Doc.A/AC.105/763 (24 April 2001), p.24.

21 This was Session 8 of the Workshop chaired by Ambassador Qizhi He (China) and where the present writer acted as rapporteur and coordinator. See op.cit. in note 1, pp. 195-217.

22 See Commentary Paper to Session 8, op.cit. in note 2, p. 216.

23 See, by the present writer, EL RIESGO AMBIENTAL Y SU REGULACIÓN, Abeledo-Perrot, Buenos Aires 1998, p.50. This question was examined deeply in the framework of the "Ubacyt Projects" conducted by the University of Buenos Aires from 1992 to date, under the direction of the present writer.