

**Once A Launching State, Always *The* Launching State?  
A Needless Conflict of Treaty Regimes\***

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Over the past few years, we have seen a resurgence of interest in the meaning and application of the Space Treaties to the activities of the rapidly evolving commercial space sector. I have followed these discussions fairly closely, and, at times have participated, generally espousing a view that we need be careful not to let our zeal for academic certainty drive us to provide premature answers to hypothetical questions, with the result that we end up harming the industry we all wish to help.<sup>1</sup> For example, at the 50th IISL Colloquium in Amsterdam, I presented a paper reviewing the United States legal and regulatory experience with private commercial launch services. My specific topic concerned the adequacy of the existing international legal framework for conducting private launches, particularly from international territory.

The issue was becoming a topic of considerable discussion in the international space law community at

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that time, and was later added to the agendas of the Scientific and Technical Subcommittee as well as the Legal Subcommittee of the UN Committee on the Peaceful Uses of Outer Space (COPUOS). My presentation in Amsterdam was one of several at that IISL Colloquium made in part, to introduce Project 2001, a joint effort the Institute of Air and Space Law at the University of Cologne and the German Aerospace Center (DLR), and led by Dr. Karl-Heinz Bckstiegel, Director of the Institute. Project 2001 surveyed, in depth, many of the legal issues raised by the burgeoning commercial space industry. This nearly three year effort illustrates the level of worldwide interest in the legal issues surrounding commercial space, and I was pleased that a number of NASA attorneys were able to participate in the various Project 2001 symposia. As we move forward, I want to acknowledge the significant contributions Dr. Bckstiegel and Project 2001 have made toward better understanding of the many legal needs and challenges of private commercial space activities.

Project 2001 concluded its work at a Colloquium in Cologne, Germany in May of this year, and the product of its operations will contribute to the discussions within the UN/COPUOS subcommittees on the concept of the launching state in the UN Liability and Registration Conventions. The COPUOS discussions are scheduled to conclude in April of next year. Thus, it seems that several efforts are converging, making this a good time both to review the conclusions emerging from the extensive work that has been accomplished thus far and to anticipate some of the follow-on issues that will likely arise. Today, I wish to concentrate on one specific area that will undoubtedly draw a great deal of attention: the evolution of the concept of the launching state.

One of the central issues in the Project 2001 discussions and, indeed, within UN/COPUOS, has been whether the activities of private commercial launch providers worldwide warrant adjustments to the UN Treaty framework for space activities that has been in place for over 30 years. After more than two years of work, the Project 2001 Working Group on Launch and Associated Services issued a final report concluding that:

In respect of the launching state issue, it is not necessary to change international law. Possible gaps in the liability system of the space treaties can be filled by licensing procedures applicable to commercial ventures for which state responsibility may exist. However, it is recommended to induce states to implement national space legislation.

I noted in my remarks at the Project 2001 Colloquium that this conclusion fit well with my pragmatic bias, as it preserves the flexibility to respond to future issues by not attempting to resolve matters that have not proven to be impediments to date. I believe this conclusion is virtually compelled by the present circumstances of the international space launch industry. Despite the undoubted existence of ambiguities that can be found in the legal framework established several decades ago, the experience with launch liability risks justifies, if not compels, the conclusion that there is no present need to attempt to clarify the meaning and applicability of the Liability Convention to private launch activities.

Three significant developments since the Liability Convention entered into force have influenced this conclusion: 1) the virtual absence of *any* third party claims history — under the Convention or otherwise — despite hundreds of launches worldwide; 2) the availability of high levels of insurance, at reasonable rates, to cover potential liability of commercial launch ventures; and 3) the imposition of licensing and regulatory requirements by states with active commercial launch programs, including excess liability payment commitments.

Given this history, it seems highly unlikely that any remaining legal uncertainty over which state or states might have launching state liability for private launch activities will create situations where compensation for death or injury is unavailable. Moreover, efforts to interpret the Convention to clarify a state's liability for launch activities by its nationals outside its own

territory — or for having procured a launch — may disturb a currently calm relationship between launching states and potential claimant states. Creation of such uncertainty would serve little purpose other than providing a forum for academic debate, and it certainly would not advance COPUOS stated goal of encouraging additional states to ratify the UN space law conventions.

The quoted conclusion of Project 2001 on the launching state issue is very much in line with my own views on this subject. I am hopeful that the UN/COPUOS subcommittees will reach a similar conclusion. The conclusion that states should implement national space legislation rather than amend or interpret the existing space law conventions establishes, I think, the right balance between public protection and the exercise of sovereign power. This balance is further refined by the report of a different Project 2001 Working Group established to identify the essential building blocks of such legislation.<sup>2</sup> Specifically, this group identified 22 factors to be considered, grouped in five areas: Authorization of Space Activities, Supervision of Space Activities, Registration of Space Objects, Indemnification Regulation, and Additional Regulation (linked to fair competition). I think these factors are quite consistent in philosophy, if not in total detail, with factors I have outlined previously for national launch licensing systems.<sup>3</sup>

The discussions within COPUOS Science and Technology Subcommittee, and especially in the Legal Subcommittee, have mirrored those within Project 2001 and seem to be yielding similar conclusions. The

subcommittees structured their approach to considering the launching state concept by adopting a three-year work plan focusing primarily on the nature of the launch industry and the scope of actions by states to regulate its activities. Thus, the final year of discussion in the Legal Subcommittee will focus on identifying, as did the Project 2001 Working Group, common elements or building blocks of national legislation to implement states international responsibility for authorization and continuing supervision of space activities by nongovernmental entities.

The ongoing effort to identify the building blocks of national space legislation is not restricted to Europe and the United Nations. In December of this year, the American Astronautical Society will convene in Scottsdale, Arizona, a Space Law Workshop, involving specialists from countries with active commercial space programs for the specific purpose of surveying the scope and content of national space legislation worldwide.<sup>4</sup> The meetings will include a wide range of presentations on existing space legislation, followed by working group efforts to identify and synthesize the primary elements of national legislation considered adequate for supervision of space activities by private entities. In my view, these efforts in Europe and the United States will add additional substance to COPUOS efforts to specify the minimum responsibilities of states to authorize and supervise private space activities, particularly in the launch services segment of the market.

The work product of these organizations will lead, I hope, to much more precise, consensus guidance on the nature and

scope of States obligations under Article VI of the Outer Space Treaty to provide authorization and continuing supervision of launch activities by private entities. Once there is general agreement on the minimum objectives of national legislation, each country will be in a position to implement laws suitable to its own jurisprudential system. I think most would agree that enforcement of national laws is often more predictable than is enforcement of international treaty obligations. Further, from what we are seeing around the world, prospects for achieving genuine commonality among laws authorizing and supervising private launches seem auspicious. A number of states with active space launch programs, particularly in Europe, are or will soon be in the process of enacting licensing statutes. With the further analysis of the relevant international obligations of states as well as consideration of existing State practice that is becoming available, we may achieve a harmonized approach that is far more effective than international lawmaking in the United Nations or elsewhere.

#### The Concept of Launching State in the Liability and Registration Conventions

The above efforts, are all occurring in the context of the current, unclarified and unamended treaties. Despite that, the effort seems to be working. As I noted before, even with the existing lack of clarity surrounding the concept of launching state, the global launch services industry is obtaining sufficient amounts of liability insurance, and whatever legal uncertainty exists has not prevented States from allowing, even encouraging, commercial launches by private entities under their jurisdiction.

Before leaving this topic, however, I want to address two additional points that have arisen in the course of this debate. For example, I am aware of the view that it is important to clarify areas of treaty ambiguity because state practice varies with regard to the scope of liability under the Convention. In the current discussions of the launching state concept within the Legal Subcommittee, for example, some delegates have expressed the view that states would bear no liability for foreign payloads launched by entities under their jurisdiction. In other words, they would only be responsible for damage caused by the launch vehicle itself. Other delegates have expressed the view that liability for foreign payloads ends with successful orbital insertion or that the precise extent of liability is an issue dependant on the facts of the incident in which damage results. Despite these current differences of opinion on how to address a hypothetical situation under a 30 year old treaty, it is unclear that state practice can truly be said to vary under a Convention which, to my knowledge, has almost never been invoked and under which no claims have been paid. To my mind, clarification will be immeasurably more useful if directed toward encouraging adoption of complementary licensing regimes on the part of states with active launch programs.

A related problem with efforts to clarify the existing treaties (by amendment or interpretation) is that the authority to accomplish this goal now resides not with the various groups studying the issues, or even with the United Nations. It resides, in varying groups of states that are parties to the different conventions.

Indeed, as Russia and other states have insisted, the ability of COPUOS (and particularly member states that have not ratified the UN space law treaties) to interpret the UN space law conventions *post hoc* is rather questionable. Since the treaties themselves provide that only states for which the treaties are in force can adopt amendments, subsequent interpretive statements by COPUOS or other bodies may have limited legal effect. In my opinion, this is all the more reason to encourage reliance upon complementary national means to achieve the goal of treaty clarification.

#### The Divergent Purposes of the Liability and Registration Conventions

So far, the discussion has focused primarily on development of national measures to address the uncertain concept of the launching state, as that term is used in the Liability Convention. The obvious next question is whether similar problems exist with the use of the term in the Registration Convention; and if so, if the same or other remedial measures should be taken. To address this, we need to examine the relationship, if any, between the concept of launching state in the two conventions. Specifically, we need to consider whether the use of the same term in each convention means that a launching state responsible for registering a space object thereby accepts absolute liability as the primary — if not exclusive — launching state under the Liability Convention for damage caused by that object.

These questions arise because the Liability and Registration Conventions use the identical term to establish distinct rights and obligations for

launching states. The apparent link between registration and liability arises from a common, but not necessarily controlling, belief that, because Article VIII of the Outer Space Treaty (OST) provides that a registering state retains jurisdiction and control over space objects it registers, the state would therefore be presumed to exercise control over the object. As a result, the state could reasonably be expected to bear significant — if not sole — responsibility for damage.<sup>5</sup>

It seems apparent from the negotiating records, however, that the drafters of the Registration Convention generally believed registration of a space object, by itself, to be an insufficient basis for linking a state to damage caused by that space object.<sup>6</sup> The discussions provide important support for the proposition that the concepts of launching state as used in the Registration and Liability Conventions are separate and distinct; and therefore, should not be equated.

I understand the reluctance of some to embrace the idea that the term launching state could have identical definitions, but different meanings, in the two conventions. Many feel that a state accepting responsibility as a launching state to register a space object is, therefore, also liable as a launching state for any damage caused by the object it has registered. The problem with merging these two concepts is that it overlooks the fundamentally different objectives of the two conventions and, therefore, the fundamentally different way they each utilize the concept of launching state. Legal experts can surely find in the negotiating records of the OST and the two conventions support for a variety of interpretations as to the

intended meaning of the term. It would, perhaps, be more productive to turn our attention to the basic purposes of the legal regimes for liability and registration as a way to resolve the apparent paradox.

The primary need for the Registration Convention to establish legal tests and procedural mechanisms for identifying one single state among potential launching states that should register a particular space object is because only one state can. Thus, for purposes of the Registration Convention, the state that registers the object becomes, in effect, *the* launching state.<sup>7</sup> On the other hand, the Liability Convention has a quite different focus. Instead of needing to reduce the possible candidate launching states to a single one, it seeks to maximize the potential for recovery by injured parties, and that is done by increasing the number of potentially liable parties. Unlike the need to know which state should register a space object, under the Liability Convention there is never a need to answer the question of which states may be launching states, unless, of course, the space object causes damage. Even then the purpose of ensuring compensation is served by keeping multiple options available. Thus, under the framework of the Liability Convention, there is no way to eliminate any potentially liable launching state, except through apportionment of liability among all such states under Article V.2. Every state having contacts to the launch activity sufficient to make it a launching state remains jointly and severally liable.

The two Conventions, therefore, have separate purposes and very different requirements, in spite of the fact that

they both create certain obligations for launching states. While the Registration Convention accords to the *registrant* launching state the right and obligation to exercise jurisdiction and control over a space object, the Liability Convention renders *all* launching states potentially liable to pay compensation. Thus, it is not the fact that a state has registered a space object that renders the state potentially liable, but rather its status as a launching state. Stated differently, a state's liability as a launching state under the Liability Convention arises only as a result of the state's involvement in launching activities. And, as a launching state, it assumes no greater degree of responsibility or liability than other launching states simply because a space object causing damage is carried on the state's registry.

I think it is essential to keep this distinction in mind. To merge the separate and distinct concepts of launching state in each convention by imputing exclusive or even primary liability to the state of registry risks diminishing the joint and several liability of other launching states. It therefore undercuts the Liability Convention's objective of maximizing potential recovery. At the same time, such a merged concept has the perverse effect of creating a major disincentive for launching states to register space objects, thereby undercutting the principal goal of the Registration Convention. In sum, ascribing liability to a state solely because it has registered a space object is not only legally questionable, but also unnecessary and counterproductive. We need to maintain a clear separation between the launching state concepts inherent in the two Conventions in their purpose, scope and effect.

## The Health of the Registration Convention

In order to give effect to both conventions without adversely impacting either, I think that one premise must be true: registering a space object does not, by itself, imply acceptance of responsibility to pay compensation under the Liability Convention. I believe that if this one premise gains general acceptance, efforts to improve and harmonize implementation of the Registration Convention and to increase adherence to it have a significantly greater likelihood of success.

As of now, the Registration Convention needs help. The registration practices of states vary widely and there many opportunities for improvement. For example, Article 1 of the Registration Convention defines space object to include component parts of a space object as well as its launch vehicle and parts thereof. However, the U.S. is the only nation I am aware of that registers non-functional objects. As a result, the current UN register lists far more U.S. space objects than those of any other nation. One of the reasons the U.S. reports this information is to contribute to a reasonably comprehensive and meaningful inventory of the number and kind of space objects in orbit. This, in turn, reduces risk to all objects in orbit because registered objects can more easily be tracked, as their characteristics are known. The U.S. would have little incentive to continue providing such information if it believed accurate identification of all such objects on the U.S. registry automatically increased its liability exposure.

Before discussing ways to improve state practice in implementing the Registration Convention if the risk of increased automatic liability can be removed, it may be helpful to review briefly the origins and objectives of the Convention. The concept of registering spacecraft existed long before the Outer Space Treaty was concluded. In the late 1950s, in anticipation of increased launch activities, there was discussion of registering space objects as an appropriate means for identifying the objects, combined with placing suitable markings on the space objects.<sup>8</sup> As this concept developed through the 1960s, registration of space objects was proposed as a means for minimizing the likelihood that weapons of mass destruction would be placed in orbit.<sup>9</sup> Further, a convention on registration would complement the Rescue Agreement,<sup>10</sup> which required contracting parties to rescue astronauts and return space objects to the launching authority when found. (The Rescue Agreement is the only convention to use the term launching authority to refer to the State or international intergovernmental organization responsible for launching the spacecraft.)<sup>11</sup> When the Registration Convention was finally concluded in 1975, three reasons were put forward for the establishment of a central registry: traffic management, safety, and identification of space objects.<sup>12</sup> Although the negotiation records reflect the obvious fact that the identity of an object would indicate the state having some responsibility, it is important to note that *allocation* of liability was not one of the noted factors.

Under the Registration Convention, the only information required to be reported to the UN under Article IV is: the name

of the launching state, the appropriate designation or registration number, the date and location of the launch, the basic orbital parameters, and the general function of the space object. There is no requirement to update this information as orbits drift or other changes occur. Apart from the fact that even the basic, initial information is infrequently reported to the UN given the individual states inconsistent reporting practices, the required information is irrelevant as proof of damage and causation in a liability discussion. Even assuming that all the information submitted to the central registry is complete, accurate and current (at the time of submission), it is simply not possible to discern which spacecraft caused damage in outer space by knowing the spacecraft's function and initial orbital parameters. Far better information on current orbital positioning is currently available through multiple other means, including, at a minimum, national and international telecommunications regulatory procedures that provide identification details for slot allocations in GEO or, alternatively, the U.S. Space Command Satellite Catalog, which has near real-time location capabilities. In the event of need, additional databases, maintained, at least, by the U.S. and Russia, could be accessed under the Convention to aid in identification.<sup>13</sup>

It is interesting to note that the Registration Convention has only been ratified by 43 states, with only four others having signed it. This puts the Registration Convention almost in a class with the Moon Treaty, which has only nine ratifications and 26 signatures. If you contrast these figures with the OST (96 ratifications and 27 signatures), the Rescue Agreement (87 ratifications

and 26 signatures), and the Liability Convention (81 ratifications and 26 signatures), it is clear that the Registration Convention does not command universal acceptance. When combined with the varying compliance practices of even the states that have ratified or signed in, it appears that the continuing utility of the Registration Convention is not a trivial question.

Personally, I think the Registration Convention is both useful and relevant. It just needs to be used more predictably. The primary purpose of registration is still to establish the state that has jurisdiction and control over a space object.<sup>14</sup> This was originally a State concept. As more private parties participate in space activities and more accurate mechanisms for determining causation are now available, there are more accurate ways to apportion joint and several liability among responsible launching states and entities over which they have jurisdiction. Thus, any argument that registration could be useful for liability allocation purposes continues to weaken. In short, because better means for determining causation in the event of damage (*e.g.* whether the damage in fact resulted from the registry state's failure to exercise adequate jurisdiction and control) are now available, any residual utility of registration *for the purpose of establishing liability* is almost wholly eliminated. I suggest it is time to take the linkage of registration and liability off the table.

It is obvious to all that, as space commerce has increased national activities in space are no longer predominantly those of states. Indeed, a space object's state of registry is now of



less importance than its ownership. The Registration Convention makes no provision for transfer of a space object to the registry of another state.<sup>15</sup> Article IV provides that states may furnish the UN registry additional information concerning a space object carried on its [state] registry. Assumedly, this would include updated information of the object's basic orbital parameters. While not required, it might also record ownership transfers. Under the current treaty framework, however, the registering state still maintains jurisdiction and control over a space object whose ownership has been transferred to another state or to a nongovernmental entity organized and operating under the laws of the transferee state. The Convention does not address transfer of ownership by agreement, and it is unclear whether States for whom it has entered into force would allow the Convention to be interpreted so as to allow this.<sup>16</sup> If the Convention is to have significant relevance to commercial space activities, a way must be found to recognize the jurisdiction and control of a commercial asset by the state that regulates or whose nationals operate it.

There are many suggestions regarding ways to alter registration practice to make it more functional in an era in which we have private operators of spacecraft bankrolled by private entities for use by individual persons. Although specific ideas for improving or augmenting the Convention is a discussion for another time, and outside the scope of this paper, some of the many issues that need to be considered are:

- are states required to register non-functional objects?
- if states could be assured that better registration practices would not increase their international liability exposure, would they have incentive to identify their space objects to clarify jurisdiction?
- the definition of space object includes component parts: does this include fragments?
- what state has actual jurisdiction and control over a space object? The state of the entity that purchases (or arranges) the launch? The state (or states) whose nationals own the object? The state of the operator of the satellite? The state of manufacture? The state of the launch service provider?

While it is intellectually stimulating to debate issues like these in forums like this one, as I noted before, even if we can reach consensus on ways to clarify and improve registration practices, that may not be enough to effect the changes. Article II.3 of the Registration Convention states: The contents of each registry and the conditions under which it is maintained shall be determined by the State of registry concerned. Article IX provides that only State Parties may amend the Convention. And, again, as mentioned, there have been longstanding concerns of numerous states that only parties to the respective conventions (i.e. states that have ratified or acceded) can amend or interpret them. Given the low number of signatories and the noted inconsistencies in state practice, it is not unreasonable to ask, Can this Convention be saved?

I believe that these are some of the issues facing space lawyers seeking to

craft new mechanisms to meet the special challenges posed by commercial space interests. The launching state concept remains a viable, if somewhat controversial, mechanism for sorting out the respective obligations of states, entities under their jurisdiction, and users of space vehicles. I firmly believe that we will do the international space industry an injustice if we try, for the sake of ostensible consistency, to convert the term launching state into a uniform term of art to be applied across conventions intended for very different purposes. I also believe that if we can escape that trap by utilizing the term launching state in ways appropriate for both the Liability Convention and the Registration Convention, we will have opened the door to a revitalized Registration Convention that can have increased relevance and usefulness to a vibrant, multinational commercial space industry.

<sup>1</sup> See, e.g., Edward A. Frankle, *Commercial Space: Confidence built on a Framework of Law and Policy*, IISL.98.IISL.2.04; Edward A. Frankle and E. Jason Steptoe, *Legal Considerations Affecting Commercial Space Launches From International Territory*, 50th International Astronautical Congress, International Institute of Space Law, IISL-99-IISL.4.02, Remarks of Edward A. Frankle, Project 2001 International Colloquium, 29-31 May, 2001.

<sup>2</sup> Vladimir Kopal and Kai-Uwe Schrogl, *Needs and Prospects for National Space Legislation*, Proceedings of the Project 2001 Workshop on National Space Legislation, 5/6 December 2000, p. 13 (Annex).

<sup>3</sup> Frankle and Steptoe, *supra*, note 3.

<sup>4</sup> Legislation or proposed legislation from Australia, Brazil, China, France, Germany, India, Japan, Russia, Sweden, the United Kingdom, and the United States will be considered.

<sup>5</sup> See: U.N. Doc. A/AC.105/c.2/L.8 (1963, reprinted in U.N. Doc. A/AC.105/19 Annex II, at 2-3 (1964).

<sup>6</sup> See: U.N. Doc. A/AC.105/21/Add.2, at 36-45 (1964).

<sup>7</sup> If two states agree to jointly register a space object, as Brazil and China did recently in respect of their cooperative CBERS mission, then presumably both states would be launching states for registration purposes.

<sup>8</sup> *Report to the National Aeronautics and Space Administration On the Law of Outer Space*, Leon Lipson, Nicholas Katzenbach, American Bar Foundation, July 1961, p.87.

<sup>9</sup> *Maintaining Outer Space for Peaceful Purposes*, ed. Nandasiri Jasentuliyana, (1984), Observations on the Registration Convention, I.H.Ph. Diederiks-Verschoor, p.113.

<sup>10</sup> Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, 22 April 1968, the "Rescue Agreement.

<sup>11</sup> *Id.*, Article 6.

<sup>12</sup> Matte, N.M. *Aerospace Law: From Scientific Exploration to Commercial Utilization*, (Toronto, 1977), 175, as cited in *Space Activities and Emerging International Law*, ed. Nicolas Mateesco Matte, at 103.

<sup>13</sup> States have an obligation to provide this information under the Registration Convention Article VI, upon request, in the event of damage. Where the application of the provisions of this Convention has not enabled a State Party to identify a space object which has caused damage to it or to any of its natural or juridical persons, or which may be of a hazardous or deleterious nature, *other States Parties, including in particular States possessing space monitoring and tracking facilities, shall respond to the greatest extent feasible to a request* by that State Party for assistance under equitable and reasonable conditions in the identification of the object. ( italics added).

<sup>14</sup> OST Article VIII: A State Party to the Treaty on whose registry an object launched into outer space is carried shall retain jurisdiction and control over such object, and over any personnel thereof, while in outer space or on a celestial body.

<sup>15</sup> The United Kingdom notified the U.N. of its transfer to China's registry of space objects owned by Hong Kong entities, upon reversion of the Crown colony in 1997. It is unclear whether this occurred pursuant to successor state arrangements or under the Liability Convention.

<sup>16</sup> The proposed Unidroit Protocol is concerned with issues related to ownership: in particular, the creation of security interests in

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communications satellites. Thus, registering information about a space object under the Registration Convention would continue to be for a different purpose than registering security interests under the Unidroit Protocol. If, however, states are willing to accept that transfer of ownership of a satellite (including any security interests) to a state or nongovernmental entity organized and operating under the laws of the transferee state necessitates transfer of jurisdiction and control to that state, then amendment or interpretation of the Registration Convention becomes appropriate and possible.