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out of human activities in outer space

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# THE 1979 MOON AGREEMENT: WHERE IS IT TODAY?

Carl Q. Christol\*

*As I was going up the stair I met a man who wasn't there. He wasn't there again to-day. I wish, I wish he'd stay away.* Hughes Mearns (1875) from *The Psychoed*, quoted in *The Oxford Dictionary of Quotations*, 2nd ed., 335 (1955)

## Introduction

What has happened to the Moon Agreement since it received the unanimous approval, without a vote, by the United Nations General Assembly on December 14, 1979?<sup>1</sup> In an effort to respond to this question several issues will be addressed.

Broadly speaking, what has gone wrong with an agreement that was considered by the UN Committee on the Peaceful Uses of Outer Space (COPUOS) between 1969 and 1979? Why has it been ratified by only 9 States and acceded to by only 5 more?<sup>2</sup> What is its legal significance for those countries which allowed it to receive the consensus approval of

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<sup>1</sup> The Agreement Governing the Activities of States on the Moon and Other Celestial Bodies. G.A. RES/34/68, 14 Dec. 1979; U.N. Doc. A/34/664, 9; 18 ILM 1434 (1979). It will also be referred to as the Moon Treaty.

<sup>2</sup> The Moon Agreement entered into force on July 11, 1984 with its ratification by the required five States. C.Q. Christol, *The Moon Treaty Enters into Force*, 79 AM. J. INT'L L. 163 (1985). Pursuant to Article 18 "Ten years after the entry into force of this Agreement, the question of the review of the Agreement shall be included in the provisional agenda of the General Assembly of the United Nations in order to consider, in the light of past application of the Agreement, whether it requires revision." (*Supra* note 1). The Article also permitted an earlier review at the instance of one-third of the parties and with the concurrence of the majority of the parties. Also to be open for consideration was the status of the governmental regime dealing with the exploitation of natural resources. General references include B. Cheng, *The Moon Treaty*, CURRENT LEGAL PROBLEMS 1980, 213 (1980); reprinted in B. CHENG, STUDIES IN INTERNATIONAL SPACE LAW 217 (1997); C.Q. Christol, *The Common Heritage of Mankind Provision in the 1979 Agreement Governing the Activities of States on the Moon and Other Celestial Bodies*, 14 THE INT'L LAW. 429-483 (1980); C.Q. Christol, *The Common Heritage of Mankind Provisions of the 5 December 1979 Moon Treaty*, 6 ANNUAIRE DE DROIT MARITIME ET AERIEN 429-463 (1982), reprinted in C.Q. CHRISTOL, SPACE LAW: PAST, PRESENT AND FUTURE 403-426 (1991); E.M. Galloway, AGREEMENT GOVERNING THE ACTIVITIES OF STATES ON THE MOON AND OTHER CELESTIAL BODIES (1980); N. JASENTULIYANA AND R.S.K. LEE, EDS., MANUAL ON SPACE LAW, VOL. 1 (1981) and Vol. 4 (1981); N.M. Matte, *The Draft Treaty on the Moon, Eight Years Later*, III ANNALS AIR & SPACE L. 511 (1978).

COPUOS and the adoption of the foregoing resolution by the General Assembly?

The issues that will be considered are: first, certain key provisions of the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies will be identified.<sup>3</sup> Second, their relationship to key Moon Treaty provisions will be indicated. Third, a brief assessment will be made of the early (1969-1972) efforts of those countries which played important roles in providing proposals, and, ultimately, texts for the treaty. This will include the question of the scope of the proposed agreement (whether it should be applied to the moon and other celestial bodies). Fourth, proposals as to the nature and extent of property rights, including the meaning to be ascribed to such terms as "ownership," "property," and "natural resources," will be examined. Fifth, the circumstances surrounding the acceptance of Article 11 and its provisions calling for the implementation of Common Heritage of Mankind (CHM) will be identified. This will include an assessment of the relationship between CHM and the *res communis* principle contained in Article II of the 1967 Principles Treaty and in Article 11.2 of the Moon Treaty. It will also deal with the characteristics of the regime to administer the sharing of benefits and the weighting of the shares for those States which may be able to engage in resource exploitation. Sixth, reference will be made to the timing of moon and celestial body activities including the proposal for a moratorium on exploitative activities. Seventh, reference will be made to the practice of assigning priorities to the issues under consideration. Eighth, attention will be drawn to efforts on the part of the U.N. General Assembly, its First and Fourth Committees, and COPUOS to obtain ratifications or accessions to the UN-based space agreements, and in particular the Moon Agreement. Ninth, reference will be made to Article 18 relating to the convening of a ten-year review conference. Finally, an assessment will be made of the legal significance and authority of the Moon Agreement, particularly in light of the limited formal support that has been accorded to it. Here the question will be raised as to the legality of the exploration, exploitation, and use of the moon's natural resources by the major space-resource States, which have neither ratified or acceded to it.

#### Early Efforts to Limit Private Space Activities

As the space age began to emerge during the Cold War attention was focused on the manner in which the exploration, use, and exploitation of the space environment and its natural resources was to occur. In broad terms the socialist countries favored governmental activities. The free enterprise countries, while accepting the role of governments, also expressed the need for private space activities. In order to focus attention on the need for a legal regime in 1960 the International Institute of Space

<sup>3</sup> 18 UST 2410; TIAS 6347; 610 UNTS 205.

Law established a working group to study and make proposals for the legal status of celestial bodies. After study it reported in 1964 that celestial bodies "or regions of them shall not be subject to national or private appropriation."<sup>4</sup> In its 1966 report the working group urged the interdiction of "private appropriation."<sup>5</sup> It was also suggested that nongovernmental entities "may explore and use" celestial bodies with the permission of the parent state.<sup>6</sup> The Institute did not record an approval of the working group's proposals.

Prior to September, 1963, the Soviet Union, during the early negotiations for the 1967 Principles Treaty, had voiced opposition to private space activity. This opposition was withdrawn when the principle now contained in Article VI of that agreement was adopted.

#### Private Property in Moon Resources, Sovereignty and Jurisdiction

One of the major provisions of the 1967 Principles Treaty has ordained that the space environment, e.g., outer space, per se, the moon, and other celestial bodies may not be or become subject to national sovereignties. This principle, as set forth in Article II,<sup>7</sup> must be read with Article VI which allows for space activities to be carried on by governmental agencies or by non-governmental entities. When this matter was being reviewed in the United States Senate, the principal American negotiator, Ambassador Arthur Goldberg, was asked if this provision contemplated "private enterprise undertaking development in outer space."<sup>8</sup> His response was: "Yes, this might happen, and if it does, then the Government must bear responsibility for nongovernmental organizations."<sup>9</sup>

This brief exchange captured a major legal principle applicable to space activities. States do not possess sovereignty nor may they exercise sovereign rights in the space environment. At the same time States are free to exercise national jurisdiction, pursuant to fundamental and fully accepted international legal principles, over persons and events occurring in the space environment. While the exercise of such jurisdiction cannot give rise to national sovereignty respecting the space environment, such jurisdictional rights over persons and events provide the basis for controlling exploitative activities in sovereignty-free areas.

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<sup>4</sup> 8 PROC. COLLOQ. L. OUTER SPACE 468 (1966).

<sup>5</sup> 10 PROC. COLLOQ. L. OUTER SPACE 13 (1968).

<sup>6</sup> *Id.*

<sup>7</sup> Article II reads: "Outer space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means." The operative parts of this article are repeated in Article 11.2. of the Moon Treaty. This states the *res communis* principle of international law.

<sup>8</sup> *Treaty on Outer Space, Hearings before the Committee on Foreign Relations, U.S. Senate, 90th Cong., 1st Sess., Executive D, 27 (1967).*

<sup>9</sup> *Id.*

The *res communis* principle adopted in the 1967 Principles Treaty, by prohibiting national sovereignty, necessarily produced a prohibition against the establishment or the granting of an exclusive right to private property in non-sovereign areas. A recent study has recommended the replacement of Article 11.2. of the Moon Agreement which applies the *res communis* principle to the moon. With the acceptance of the opposed principle of *res nullius*, as the study suggests, there could be sovereignty-based property rights. Underlying the suggestion is the belief that the *res nullius* regime would facilitate the exploitation of lunar resources.<sup>10</sup> However, the *res communis* principle allows for the acquisition of property rights in those natural resources situated in the non-sovereign areas, that have been acquired through their removal from their original "in place" situs, e.g., exploited.

The law of the sea rule, relying on the *res communis* principle, which prevents a nation from exercising sovereignty on the high seas, but which accords to its fishermen, who are subject to its jurisdiction, proprietary rights in the fish which they may catch, applies to natural resources of the space environment.

The broad extent of the jurisdictional rights of a State would allow it to prevent the landing in one of its ports of fish caught on the high seas if the State considered such fish to be, for example, contaminated with excessive amounts of mercury. Similarly, a State could prohibit the return to its territory of a space-sourced natural resource if it were to contain substances harmful to humankind. Such jurisdictional rights of a State have equal application to the activities of its nationals on the high seas and in the space environment.

In short, just as a State may not claim national sovereignty over areas of the high seas, it may not claim national sovereignty over the Moon and other celestial bodies, or any part of them. Being unable to possess sovereignty, a State may not create exclusive property rights. However, those public entities or those private institutions that have the capacity to engage in exploitative activities are fully competent to do so. They are, as required by Article VI of the Principles Treaty, to conform to the "authorization and continuing supervision by the appropriate State Party to the Treaty." As a result of this provision it is clear that parties may exercise important jurisdictional controls. Most importantly, the distinction between national sovereignty, and the right of a State to engage in jurisdictional authority, has been recognized. The extent of such jurisdictional authority will depend upon whether a State is bound by either or both of the 1967 Principles and the 1979 Moon treaty.

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<sup>10</sup> K. Cramer, *The Lunar Users Union - An Organization to Grant Land Use Rights on the Moon in Accordance with the Outer Space Treaty*, 40TH PROC. COLLOQ. L. OUTER SPACE, 352 (1998). See also N.C. Goldman and D.J. O'Donnell, *Revisiting the Outer Space Treaty: A Re-examination of the Sovereignty-Jurisdiction Compromise*, *Id.* at 316.



### Practical Factors Suggesting a Moon Treaty

By 1969 outer space activity was beginning to capture the attention of thoughtful people. Foremost was the successful landing on the moon. An awareness existed that tangible moon rocks were being returned to earth. The possibility was being explored whether mineral and other tangible and intangible resources could be exploited. The role of communications in space was becoming very real. There was talk of the establishment of human habitations on the moon. It was being accepted that even the temporary presence of humans would require the exploitation of such resources.

Further, the world's scientific and technical communities were exercising lively imaginations concerning novel and innovative experiments that might be implemented. In short, a convergence of human, economic, political, scientific, technical, and security interests was occurring. Not the least was the concern on the part of developing countries that they might share in the benefits to be derived from exploitative activities.

It was thought, with the 1967 Principles Treaty as a foundation, that a more detailed and more specifically designed international agreement would serve world community interests.

### The Genesis of the Moon Agreement

The ink was hardly dry on the 1967 Principles Treaty when States started to urge that human space capabilities and the opportunities for material rewards required an international legal instrument dealing specifically with moon activities and resources.

In 1967 the Legal Sub-Committee adopted an agenda item which called for studies of questions relative to "(a) the definition of outer space [and] (b) the utilization of outer space and celestial bodies, including the various implications of space communications."<sup>11</sup>

When the Legal Sub-Committee met for its eighth session on June 9, 1969 its official agenda did not call for a consideration of the Moon and other celestial bodies and the natural resources located there. Nonetheless, relying on the 1967 agenda item, the Chairman allowed moon and celestial body presentations to go forward.

Within this broad construct the members of the subcommittee agreed to proceed with an examination of "questions relating to the legal rules which should govern man's activities on the moon and other celestial bodies including the legal regime governing substances coming from the moon and other celestial bodies."<sup>12</sup> Through this initiative the path was opened to drafting and entry into force of the 1979 Moon Agreement. Under the foregoing heading the government of Poland immediately introduced a working paper stating "In the elaboration of treaty rules governing the

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<sup>11</sup> U.N. Doc. A/AC.105/37, 1, 14 July 1967.

<sup>12</sup> U.N. Doc. A/AC.105/58, 5, July 4, 1969.

exploration and use of outer space, it is necessary to prepare such rules relating specifically to man's activities on the surface of the moon and other celestial bodies."<sup>13</sup>

Out of this modest proposal a whole host of legal problems has arisen.<sup>14</sup> Key to all has been the widely held assumption, which was confirmed in the 1979 Moon Agreement, that human activities would result in the exploration, use, and exploitation of the moon's natural resources without regard for whether such resources were located below, on, or above the surface of the moon. The extent of human activity was immediately perceived as extending to "substances, resources and products . . ." with their ultimately being "transported to earth."<sup>15</sup>

An additional factor was at once perceived. The representative of Italy, believing that such celestial bodies "might well be subjected to economic exploitation in the fairly near future suggested that an international organization should be established to regulate such economic activities. Not only would traffic in space have to be controlled, but it would also be necessary to grant concessions for the installation of machinery, buildings, etc., on celestial bodies."<sup>16</sup> The question was also raised whether national laws or international law would be applicable.

Reference was also made by the Italian representative to the early creation of a new organization which would "be empowered to grant concessions or prohibit dangerous activities . . . [which could be] an autonomous organization, or even a United Nations specialized agency, with power to settle any questions that might arise between States."<sup>17</sup>

In 1969 the Legal Sub-Committee received additional proposals focusing on human, moon and celestial body activities. Thus, France asked for an agenda item dealing with a "legal regime" for such activities.<sup>18</sup> Argentina and Poland put forward a proposal, based on the expectation that humans would soon land on the moon, which occurred on July 20, 1969, calling for the formation of suitable rules and in particular the "legal status of substances, resources and products taken from the moon and other celestial bodies."<sup>19</sup> These three countries then submitted a proposal in which they expressed the need for suitable rules, including a legal regime for substances "coming" from the identified areas.<sup>20</sup>

In 1970 the substantive content of the future Moon Agreement took an enormous leap forward with the submission to the subcommittee of the

<sup>13</sup> U.N. Doc. A/AC.105/C.2/L.53; *supra* note 12, at Annex I, 4.

<sup>14</sup> N.M. Matte, *supra* note 2, at 511; N.M. Matte, *The Common Heritage of Mankind and Outer Space: Towards a New International Order for Survival*, XII ANNALS AIR & SPACE L. 313, 1987; N.M. Matte, *The Moon Agreement: What Future?*, 12 ANNUAIRE DE DROIT MARITIME ET AERIEN 345, 1993; K.B. Walsh, *Controversial Issues Under Article XI of the Moon Treaty*, VI ANNALS AIR & SPACE L. 489, 1981.

<sup>15</sup> Proposal of Argentina, U.N. Doc. A/AC.105/C.2/L.54, *supra* note 11, Annex I, 4.

<sup>16</sup> U.N. Doc. A/AC.105/C.2, SR.113, 26, 7 Oct. 1969.

<sup>17</sup> U.N. Doc. A/AC.105/C.2/SR.114, 39-40, 7 Oct. 1969.

<sup>18</sup> U.N. Doc. A/AC.105/C.2/L.4; *supra* note 11, Annex I, at 6.

<sup>19</sup> U.N. Doc. A/AC.105/C.2/L.66; *supra* note 11, Annex I, at 7.

<sup>20</sup> U.N. Doc. A/AC.105/C.2/L.69; *supra* note 11, Annex I, at 7.

Argentinian "draft agreement on the principles governing activities in the use of the natural resources of the moon and other celestial bodies."<sup>21</sup> The proposal set the stage for all of the ensuing negotiations leading to the Moon Agreement. Most notable was the provision of Article 11 which stated that "The natural resources of the Moon and other celestial bodies shall be the common heritage of all mankind."<sup>22</sup> The remaining four articles prescribed that the substances originating in the Moon were to be regarded as natural resources, that a legal system different from that applicable to the natural resources brought to Earth for use would be applied to the natural resources used in their place of origin, that benefits derived from the use of such natural resources were to be made available to all peoples without discrimination, and in distributing such benefits account should be taken of the "interests and requirements" of developing countries and the "rights of those undertaking such activities."<sup>23</sup>

Argentina considered that a meaningful consideration of its proposal would require study. Thus, it agreed to defer consideration of the draft until 1971.<sup>24</sup>

On June 16, 1971 the Legal Sub-Committee was advised that on May 27, 1971 the Secretary-General had received a request from the Soviet Union that a draft moon treaty be placed on the provisional agenda of the 1971 session of the General Assembly.<sup>25</sup> Entitled "Draft Treaty Concerning the Moon,"<sup>26</sup> it consisted of 15 articles many of which had their source in the 1967 Principles Treaty. Within its provisions were references to the moon's use for peaceful purposes, environmental protections, freedom of movement of persons and vehicles, humanitarian assistance to persons in distress, exchange of information respecting health-threatening substances and the presence of organic life, non-existence of property rights respecting the moon's surface or subsoil, and procedures for proposing amendments and the conditions under which they could be accepted. On November 29, 1971, the General Assembly adopted a resolution requesting COPUOS and the Legal Sub-Committee to consider as "a matter of priority" the issue of drafting an international agreement relating to the Moon.<sup>27</sup>

The priority status to be accorded to a prospective subject for consideration by the Legal Sub-Committee has always produced a variety of national outlooks. At the 1971 meeting of the subcommittee Argentina and France urged the adoption of a new agenda item, having priority status, for

<sup>21</sup> U.N. Doc. A/AC.105/C.2/L.71 and Corr. 1, U.N. Doc. A/AC.105/85, Annex II, 1, 3 July 1970.

<sup>22</sup> *Id.* The elements of common heritage of all mankind are identified in C.Q. CHRISTOL, *THE MODERN INTERNATIONAL LAW OF OUTER SPACE* 286-287 (1982).

<sup>23</sup> *Supra* note 20, at 1-2.

<sup>24</sup> U.N. Doc. A/AC.105/C.2/SR.144, 46, 26 June 1970.

<sup>25</sup> U.N. Doc. A/AC.105/94, 2, 8 July 1971.

<sup>26</sup> U.N. Doc. A/8391 and Corr. 1, U.N. Doc. A/AC.105/101, Annex I, 1, 11 May 1972; U.N. Doc. A/C.1/L.568, 9 November 1971.

<sup>27</sup> G.A. Res. 2779 (XXVI) of 9 December 1971; U.N. Doc. A/AC.105/101, 5, 11 May 1972.

consideration in 1972. Pursuant to the subcommittee's decision priority was to be assigned to "The rules which should govern man's activities on the moon," and "Matters relating to the legal regime governing substances coming from the moon and from other celestial bodies, including the principles governing activities in the use of natural resources of the moon and other celestial bodies."<sup>28</sup>

The Legal Sub-Committee, mindful of the several suggestions that had been made between 1969 and 1971, and with the mandate to assign a priority status to a moon agreement, began serious discussions in 1972.<sup>29</sup> Annual encouragement has taken the form of General Assembly Resolutions. The General Assembly has regularly endorsed COPUOS recommendations, which had initially determined priority status. Illustrative of the General Assembly's involvement was its 1978 Resolution 33/16 in which it urged that at its eighteenth session in 1979 the Legal Sub-Committee should "continue as a matter of priority . . . (iii) its efforts to complete the draft treaty relating to the moon."<sup>30</sup>

Despite regular and intensive negotiational efforts and the repetitive assignment of a "priority" status to the completion of the proposed treaty, it was not until December 5, 1979 that the General Assembly gave its approval to the Moon Agreement.<sup>31</sup>

Since in 1971 the subcommittee was entitled under its agenda item on the utilization of outer space and celestial bodies including the various implications of space communications<sup>32</sup> to consider the 1970 Argentinian proposal, several of the representatives offered relevant suggestions. Thus, Ambassador Cocca of Argentina expressed the view that priority should be accorded to "activities on the Moon and the need for their regulation."<sup>33</sup> The United Kingdom representative called attention to the need for technical examinations to precede proposed "discussions of activities in the use of the natural resources ..." of the moon.<sup>34</sup> He also observed that there should be freedom of scientific exploration with respect to the "resources of the Moon."<sup>35</sup>

The representative of France observed that there was no immediate need to determine the legal status of extraterritorial materials serving "industrial purposes."<sup>36</sup> But, he did assert that there was a need to agree that "the sub-soil of the heavenly bodies like their ground surfaces could not be the subject of any national appropriation or private law."<sup>37</sup> He also

<sup>28</sup> U.N. Doc. A/AC.105/94, 15 (8 July 1971).

<sup>29</sup> U.N. Doc. A/AC.105/101, Annex I, 1-34, 11 May 1972.

<sup>30</sup> General Assembly, Official Records, 33d Sess. Suppl. No. 45, U.N. Doc. A33/45, 66 (1979).

<sup>31</sup> *Supra* note 1.

<sup>32</sup> U.N. Doc. A/AC.105/C.2/SR.187, 37, 7 June 1971.

<sup>33</sup> *Id.* at 50.

<sup>34</sup> U.N. Doc. A/AC.105/C.2/SR.161, 65, 18 June 1971.

<sup>35</sup> U.N. Doc. A/AC.105/C.2/SR.167, 129, 29 June 1971.

<sup>36</sup> U.N. Doc. A/AC.105/C.2/SR.167, 129, 29 June 1971.

<sup>37</sup> *Id.*

stated that publicity should be given "to the operations carried out and knowledge acquired."<sup>38</sup>

The Soviet representative, without specifically mentioning the 1971 Soviet draft, but undoubtedly with it in mind, expressed an objection to the earlier Argentinian and French proposals. In his view they constituted a linking of two separate concepts. These were, first, "the legal status of man's activities on the Moon," and, second, "the use of the natural resources of the Moon and other celestial bodies."<sup>39</sup>

Thus, even before the subcommittee had been provided with the greater authority to deal with the subject of the moon and its natural resources, which would be formalized with the identification of a more specific agenda item, it was evident that many wants, needs, interests, and values would have to be sorted out. To make the matter even more complex at this early 1971 date was the statement by the Argentinian representative that there was a need to relate the natural resources of the ocean and seabed with those of the moon because they were both perceived as being "beyond the limits of national jurisdiction."<sup>40</sup>

When the Legal Sub-Committee met in May of 1972 it had before it the 1970 Argentinian and the 1971 Soviet draft treaties. During this session, pursuant to General Assembly Resolution 2779 (XXVI) of November 29, 1971, it embarked on the preparation of an international agreement concerning the Moon.<sup>41</sup> It also had before it eighteen working papers submitted by the United States.<sup>42</sup> Working papers were also provided by Sweden and the United Kingdom, Australia, Belgium, France, Italy, Sweden, the United Kingdom, by Egypt and India, and by Bulgaria.<sup>43</sup> In its working paper, dated April 13, 1972, the United States called for the application of the CHM principle to the natural resources of the moon and other celestial bodies.<sup>44</sup>

During the 1972 meeting of the Legal Sub-Committee a number of statements were made. They reflected in large part the formal written proposals that had been submitted to the newly constituted Working Group.

<sup>38</sup> *Id.*

<sup>39</sup> *Supra* note 35, at 132.

<sup>40</sup> U.N. Doc. A/AC.105/C.2/SR.168, 145, 30 June 1971.

<sup>41</sup> G.A. A/RES.2779 (XXVI), 9 December 1971.

<sup>42</sup> U.N. Doc. A/AC.105/101, Annex I, 7-20, 11 May 1972.

<sup>43</sup> *Id.*

<sup>44</sup> *Id.* at 13. Among the American writers who had reviewed the American proposals are E.R. Finch, Jr., E. Galloway, S. Gorove, S.N. Hosenball, B.K. Luxenberg, P.L. Saffo, D.D. Smith, S.B. Rosenfield and D.A. Zafren. Many of their articles appear in the Proceedings of the Annual Colloquia on the Law of Outer Space. They have been referred to in C.Q. Christol, *supra* note 22, at 329-341, 361-363 (1982). Of particular interest is S.N. Hosenball, *Current Issues of Space Law before the United Nations*, 2 J. SPACE L. 9 (Spring 1974). He was a principal U.S. representative to the Legal Sub-Committee during the negotiations. The U.S. position is set forth in his "Statement" made on September 6, 1979 to the Subcommittee on Space Science and Applications, House Committee on Science and Technology, 96th Cong. 2d Sess. 8292 (1979).

At the very outset the term "Common Heritage of Mankind" produced searching inquiries.<sup>45</sup> At this time it was identified as a "concept" by Egypt, India, Japan, and the United Kingdom. The Working Group's 1972 draft did not characterize CHM as either a concept or as a principle although over time its proponents frequently employed the latter term.

Support for the CHM approach for natural resources came from Argentina, Belgium, Egypt, India, Iran, Japan, Lebanon, Romania, the United Kingdom, and the United States. The Indian representative stated that a majority of the States attending the session were supportive of CHM. Only Bulgaria expressly rejected the idea.<sup>46</sup>

In assessing the deliberations it is important to keep in mind the composition of COPUOS. In 1972 there were 28 members. They represented the older and more advanced countries. This number became 37 on December 18, 1973 with the addition of Chile, Federal Republic of Germany, German Democratic Republic, Indonesia, Kenya, Nigeria, Pakistan, Sudan, and Venezuela. Ten new members were added in 1977. These were Benin, Colombia, Ecuador, Iraq, Netherlands, Niger, Philippines, Turkey, United Republic of Cameroon, and Yugoslavia. China did not become a member until 1980.<sup>47</sup>

Even though a CHM approach was supported in 1972, there were a number of critics. Japan considered CHM to be new and illdefined. It was willing for the time being to leave its operational meaning vague. There were differing views respecting the sharing of CHM benefits. Japan considered that arrangements for the sharing of benefits were not dependent on the CHM concept. It indicated that it was too soon to try to solve the problems of sharing of benefits. Provision should be delayed until exploitation became a reality.<sup>48</sup>

The United Kingdom indicated that CHM should be the source for such sharings, even though it expressed the view that CHM was not a precise concept.<sup>49</sup> Egypt indicated that the CHM concept should prevent the assertion of ownership respecting moon-based stations and installations.<sup>50</sup>

There were sharp divisions as to the scope of the proposed agreement. Thus, Japan, along with Bulgaria, Czechoslovakia, Egypt, Hungary, India, Poland, and the Soviet Union wished the treaty to apply only to the natural resources of the Moon. And, of this group, Bulgaria, Czechoslovakia, Japan,

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<sup>45</sup> U.N. Doc. A/AC.105/C.2/SR.187, 3-20, 12 July 1972; U.N. Doc. A/AC.105/C.2/SR.188, 21-32, 12 July 1972; U.N. Doc. A/AC.105/C.2/SR.189, 38-39, 12 July 1972; U.N. Doc. A/AC.105/C.2/SR.190, 42-44, 12 July 1972.

<sup>46</sup> U.N. Doc. A/AC.105.C.2/SR.188, 29, 12 July 1972.

<sup>47</sup> See generally N. Jasentuliyana, *The Role of Developing Countries and the Formulation of Space Law*, XX:II ANNALS AIR & SPACE, L. 105 (1995).

<sup>48</sup> U.N. Doc. A/AC.105.C.2/SR.187, 3, 12 July 1972.

<sup>49</sup> *Supra* note 46, at 23

<sup>50</sup> *Id.* at 20. On the other hand, Argentina the original proponent of CHM, indicated that an on-the-spot use and development of the natural resources of the moon and celestial bodies was lawful. Hence, the substances used to construct objects on the moon would be the property of the builders.

and the Soviet Union considered it premature to endeavor to regulate the use of such natural resources.

A larger view of the scope of the agreement was put forward by the United States, Australia and Canada. Support for this approach came from Belgium and Argentina. They favored an agreement that would encompass the natural resources of the Moon and other celestial bodies. Canada proposed a separate agreement to deal only with the natural resources of celestial bodies.<sup>51</sup>

With respect to the formation of a regime to govern the exploitation of natural resources, Canada urged the importance of sharing benefits. Hungary and Czechoslovakia pointed to the need to take account of the interests of States not possessing outer space capabilities. The United Kingdom suggested that commercial exploitation would provide the source of such sharings. Due account would have to be taken of the enormous costs involved in exploitative activities, with such costs making it difficult to determine when a benefit actually existed. Doubt was expressed that such commercial exploitation would occur in the near future. Thus, no need was seen to deal with it in the proposed treaty.<sup>52</sup>

France also advanced a "go slow" approach stating that an agreement should be delayed until the exploitation of moon resources had assumed sufficient proportions.<sup>53</sup> The United States,<sup>54</sup> Romania<sup>55</sup> and Argentina<sup>56</sup> while, agreeing that such exploitability might be distant, urged that the new agreement should provide for such an eventuality. The USSR favored going forward on a case by case basis.<sup>57</sup>

It was not until 1973 that the Soviet Union clearly expressed its view on CHM. In addressing the Legal Sub-Committee the Soviet representative noted that CHM "did not have a real and practical meaning at the present stage of activities relating to the Moon."<sup>58</sup> He suggested, in the absence of any legal meaning for CHM, that there was no practical need to consider the formation of an appropriate international regime.<sup>59</sup>

Between 1973 and 1979 Soviet space lawyers expressed support for the official governmental position. The novelty of the CHM idea, without traditional national underpinnings, caused concerns. Further, a literal reading of the terminology presented difficulties. Efforts to gain direction from the province of all mankind concept resulted in concerns over abstractions. Also noted were reservations over the timeliness and the

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<sup>51</sup> *Supra* note 48, at 11.

<sup>52</sup> *Supra* note 46, at 23-24.

<sup>53</sup> *Id.* at 26.

<sup>54</sup> *Id.* at 32.

<sup>55</sup> U.N. Doc. A/AC.105.C.2/SR.189, 38, 12 July 1973.

<sup>56</sup> U.N. Doc. A/AC.105/C.2/SR.190, 42, 12 July 1972.

<sup>57</sup> *Id.*

<sup>58</sup> U.N. Doc. A/AC.105/C.2/SR.204, 91, 19 April 1973.

<sup>59</sup> *Id.*

characteristics of the proposed legal regime, including legal powers and organizational structure.<sup>60</sup>

In 1972 numerous references were made to the 1967 Principles treaty. It was suggested, since it was lacking in explicitly in some respects, that the new agreement would represent an advance or improvement. On the other hand, it was urged that there should be an incorporation of the relevant provisions of that earlier agreement. Canada suggested that the new agreement should elaborate on Article II of the Principles Treaty in order to insure that the Moon and its natural resources were not subject to national appropriation. Canada also counseled that the Soviet draft be examined to determine if it repeated, expanded, or omitted corresponding provisions of the 1967 agreement. It also specified that there should be a guarantee that the benefits of the exploitation of the moon's natural resources be distributed equitably.<sup>61</sup>

Japan indicated that the acceptance of CHM in law of the sea discussions should not be a reason for applying it to Moon and celestial body resources.<sup>62</sup>

Special points were made by the United States and by Romania. The former stressed the need to deal with scientific investigations.<sup>63</sup> Romania noted the importance of access to the area and resources.<sup>64</sup>

Austria considered that certain provisions would apply equally to the moon and to celestial bodies. Both should be used for peaceful purposes. They should be exploited for the benefit of all mankind. Both should be open to scientific research. In each area suitable attention should be given to environmental protection.<sup>65</sup>

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<sup>60</sup> Among the USSR scholars were R.V. Dekanozov, E. Kamenetskaya, Y.M. Kolosov, V. Kulebyakin, M. Lazarev, E.G. Vassilovskaya, and G.P. Zukov. Many of their articles have appeared in the *Proceedings of the Annual Colloquia on the Law of Outer Space* between 1968 and 1978. They have been identified in C.Q. CHRISTOL, *supra* note 22, at 329-341 (1982). Other scholars whose appraisals of the Moon Treaty have appeared in the annual Colloquia on the Law of Outer Space include C.W. Jenks (1969 and 1970), S.M. Williams (1970 and 1971), A.A. Cocca (1971, 1974, 1986), M. Marcoff (1972), I.H.Ph. Diederiks-Verschoor (1972), V. Kopal (1973 and 1974), and G.C.M. Reijnen (1977). See also A. Bueckling, *The Strategy of Semantics and the 'Mankind' Provisions*, 7 J. SPACE L. 15 (1977); N. Jasentuliyana, *The United Nations Space Treaties and the Common Heritage Principle*, 2 SPACE POL'Y. 297 (1986); C.W. Pinto, *'Common Heritage of Mankind' From Metaphor to Myth, and the Consequences of Constructive Ambiguity*, in J. MARKARCZK, ed., *THEORY OF INTERNATIONAL LAW AT THE THRESHOLD OF THE 21ST CENTURY* (1996); P.F. Mercure, *L'Échet des Modèles de Gestion des Ressources Naturelles Selon les Caractéristiques du Concept de Patrimoine Commun de l'Humanité*, 28 OTTAWA L. REV. 45 (1996/1997).

<sup>61</sup> *Supra* note 48, at 10.

<sup>62</sup> *Id.* at 3.

<sup>63</sup> *Supra* note 46, at 32.

<sup>64</sup> U.N. Doc. A/AC.105.C.2.1SR.189, 38, 12 July 1972.

<sup>65</sup> *Supra* note 46, at 22.



At the 1972 meeting of the subcommittee, as in 1973, at which time it had before it a working paper dated March 27, entitled "Draft Treaty Relating to the Moon," prepared by Bulgaria and consisting of 21 articles,<sup>66</sup> it was evident that a number of difficult issues would have to be resolved before a consensus could be reached. There was no common understanding of CHM. Different views were advanced as to its application to both the moon and other celestial bodies. While it was understood that CHM would encompass the sharing of benefits, there were proposals that a separate and later agreement should address this situation. It was urged that the creation of a regime for the sharing of benefits could wait until commercial exploitation was taking place. Some States were wholly opposed to CHM.

The proposed agreement was to take into account the provisions of the 1967 Principles Treaty. Without detracting from its fundamental principles, it was urged that as much as possible of it be restated in the new agreement. Unresolved was the important matter of property rights and ownership of natural resources in their original condition and as used in the manufacture of finished products. Because of the varied outlooks on all of these troublesome issues, it was not possible until 1979 to obtain the required consensus.

#### The Year of Decision: 1979

The controversial aspects of CHM were frequently alluded to during the Spring, 1979 meeting of the Legal Sub-Committee. Also coming under serious criticism was the proposal for a regime to implement CHM. These concerns were also voiced in COPUOS. For example, in 1979 Romania in referring to CHM as a "notion," indicated it could be "a stumbling block . . . [since the notion] had no precise juridical significance but was rather a moral and political concept without the juridical connotation that had been ascribed to it. . . ."<sup>67</sup> Romania considered CHM to be an ambiguous "concept," and indicated that mention of it in the proposed agreement would not "serve to settle the question of the moon's natural resources."<sup>68</sup> This was based on the proposition that the utilization of such natural resources was still a hypothetical issue. Thus, it was urged that the matter could be postponed until experience would suggest an appropriate decision.<sup>69</sup>

On the other hand, Italy, and other countries, considered that moon resources would be available and that "once they had been transported to earth, no country should be denied an equitable share of the benefits."<sup>70</sup> At that time, and down to the present, the developing countries were and have been the most vocal of the supporters of CHM. Reflecting this position was the observation of the representative of Kenya.

<sup>66</sup> U.N. Doc. A/AC.105/115, Annex I, 11, 27 April 1973.

<sup>67</sup> U.N. Doc. A/AC.105/C.2/SR.306, 13, 16 March 1979.

<sup>68</sup> U.N. Doc. A/AC.105/C.2/SR.307, 4, 22 March 1979.

<sup>69</sup> *Id.*

<sup>70</sup> U.N. Doc. A/AC.105/C.2/SR.304, 6, 16 March 1979.

In his view the CHM principle had replaced the *res communis* principle. The latter was characterized as a "free for all system whereby the developed maritime powers had exploited the resources of the sea for their own benefit."<sup>71</sup> Thus, the CHM principle would require the sharing of resources.

From 1972 through 1979 the Legal Sub-Committee and COPUOS made valiant efforts to arrive at a consensus on existing issues. During these years the subcommittee benefitted from the use of working groups. An on-going sense of direction was provided through the presentation to the subcommittee of entire drafts. A major contribution was made by Austria on April 3, 1978.<sup>72</sup> This consolidated draft was used as the basis for discussion when the subcommittee met in 1979.<sup>73</sup>

In 1979 an article by article review of the Austrian draft resulted in a modified version. Like the original, it was heavily embroidered with square brackets.<sup>74</sup> In this condition it was, without a consensus on the terms of Article 11, referred to COPUOS.<sup>75</sup>

#### Approval by COPUOS and Committee Four of the General Assembly

COPUOS reviewed the draft agreement at its June-July, 1979, session. Following the efforts of a new Working Group and informal consultations among the membership, it was agreed that Article 11, paragraph 1 should read: "The moon and its natural resources are the common heritage of mankind, which finds its expression in the provisions of this agreement and, in particular paragraph 5 of this article."<sup>76</sup> COPUOS also clarified the scope of the Treaty through a formal understanding, namely, "The Committee agreed that by virtue of article 1, paragraph 1, the principle contained in article 11, paragraph 1, would also apply to celestial bodies in the solar system other than the earth and to its natural resources."<sup>77</sup> With this the Chairman, on the basis of consensus on July 3, 1979, more than ten years after the subject had first been considered in the Legal Sub-Committee, declared that the draft agreement had been approved.<sup>78</sup>

Representatives from many countries, especially from developing States, applauded the provisions of Article 11. The American delegate, while acknowledging that the common heritage principle had initially been suggested by Argentina, observed that it "was formally proposed by his

<sup>71</sup> U.N. Doc. A/AC.105/C.2.SR.219, 2, 22 March 1978.

<sup>72</sup> U.N. Doc. WG.I(1978)/WP.2 of 3 April 1978; U.N. Doc. A/AC.105/218, Annex I, 2, 13 April 1978.

<sup>73</sup> U.N. Doc. A/AC.105/240, Annex III, 1, 10 April 1979.

<sup>74</sup> *Id.* at 4.

<sup>75</sup> U.N. Doc. A/AC.105/249, Annex III, 2, 10 April 1979.

<sup>76</sup> General Assembly, Official Records, 34th Sess., Supp. No. 20, UN Doc. A/34/20, No. 20, 32, 1979.

<sup>77</sup> *Id.*

<sup>78</sup> U.N. Doc. A/AC.105/PV.203, 6, 16 July 1979.

delegation in 1972.<sup>79</sup> He also stated that the article "makes clear that the parties to the agreement undertake, as the exploitation of the natural resources of the celestial bodies other than the earth is about to become feasible, to convene a conference to negotiate an international regime to govern the exploitation of those mineral and other substantive resources which may be found on the surface or subsurface of a celestial body."<sup>80</sup> After noting that the agreement, following many compromises, did not place a moratorium upon the "exploitation of the natural resources on celestial bodies, pending the establishment of an international regime," he added that the United States "will, when and if these negotiations for such a regime are called for, under article 11 and 18, make every effort to see that the regime is successfully negotiated."<sup>81</sup> He also observed that a consensus existed that the Moon Treaty "in no way derogates from or limits the provisions of the 1967 Outer Space Treaty."<sup>82</sup>

In comparison to the American representative's fairly extensive review of meanings to be ascribed to treaty terms, the Soviet delegate merely observed that "our delegation will make no hasty interpretation of the meaning behind each article of the new draft agreement, its possible impact on further developments in international co-operation in outer space, or its potential impact on the further development of international space law."<sup>83</sup> The treaty was characterized as a commendable achievement.

With the removal of the square brackets on Article 11 by COPUOS the draft of the Moon agreement was submitted to the Fourth Committee.<sup>84</sup> In his presentation to this Committee the Chairman of COPUOS stated that while the agreement "might not fully reflect the views of every delegate that had participated in its preparation, the text did represent the highest common denominator of agreement."<sup>85</sup> He indicated that if the agreement were approved and adopted by the General Assembly "it would constitute an impressive addition to previous United Nations treaties on the peaceful uses of outer space."<sup>86</sup>

The Egyptian representative added that it "would be the corner-stone of future co-operation in outer space . . ." because of the CHM provision.<sup>87</sup> The Soviet representative, as did others, spoke of the treaty as a "meticulous and balanced document which met the needs of all countries."<sup>88</sup>

Since no official records were made of the negotiations immediately prior to the achievement of consensus, this has allowed for speculation as to the immediate causes for the agreement. One author has suggested that

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<sup>79</sup> *Id.* at 21.

<sup>80</sup> *Id.* at 21-22.

<sup>81</sup> *Id.* at 26.

<sup>82</sup> *Id.* at 26.

<sup>83</sup> *Id.* at 43-46.

<sup>84</sup> U.N. Doc. A/SPC/34.SR.15, 31 October 1979

<sup>85</sup> *Id.* at 7.

<sup>86</sup> *Id.*

<sup>87</sup> *Id.* at 8.

<sup>88</sup> U.N. Doc. A/SPC/34/17, 11, 5 November 1979.

the signature of the SALT-II Agreement on the date when the Chairman of COPUOS indicated that consensus had been achieved was a factor.<sup>89</sup> Professor Cheng assigns some significance to the concurrent observation of the representative of the German Democratic Republic that reaching agreement on SALT-II "will have a positive bearing on the peaceful uses of outer space."<sup>90</sup> In all likelihood, however, the last-minute political will needed to obtain consensus resulted from an awareness on the part of the non-space powers -- and particularly those constituting the socialist block -- that CHM met with the approval of the space resource States. Many representatives referred to the importance of the CHM principle.

The United States delegate reviewed many subjects including the absence in the agreement of a moratorium "on the exploitation of the natural resources of celestial bodies by States or their nationals, but it did provide that any such exploitation must be carried out in accordance with Article 11, paragraph 7, and Article 6, paragraph 2."<sup>91</sup> He added that "Article 11, paragraph 7, provided a framework for such exploitation, since even exploitation undertaken by a State Party or its nationals outside the context of the proposed regime would have to be compatible with the provisions of that paragraph."<sup>92</sup> His meaning is not entirely clear. However, it may be supposed that he was not asserting that the United States or its nationals would be subject to the agreement in the absence of its ratification. He stated expressly that this "balanced" and "reasonable" agreement would have to meet the "approval of the United States Senate."<sup>93</sup>

The United States committed itself to future participation in negotiations respecting the establishment of an international regime for governing the exploitation of the moon's natural resources. Its representative stated that the United States "would, when and if negotiations for such a regime were called for under articles 11 and 18, make a good faith effort to ensure that they were successfully concluded."<sup>94</sup> This was the only reference at that time to the unfinished business of the preceding negotiations.

At this time support for CHM was indicated by Colombia, Mexico, Philippines, and Uruguay.<sup>95</sup> Ecuador advanced a qualified view on this subject. It reaffirmed its right "to a segment of the geostationary orbit."<sup>96</sup> It then added that "as to those segments of the orbit which were not within the jurisdiction of equatorial countries, they constituted the Common Heritage of Mankind."<sup>97</sup>

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<sup>89</sup> B. Cheng, *Supra* note 2, at 217.

<sup>90</sup> U.N. Doc. A/AC.105/PV.203, 19-20, 3 July 1979.

<sup>91</sup> U.N. Doc. A/SPC/34/19, 6, 7 November 1979.

<sup>92</sup> *Id.*

<sup>93</sup> *Id.*

<sup>94</sup> *Id.*

<sup>95</sup> *Id.* at 8-21.

<sup>96</sup> U.N. Doc. A/SPC/34/18, 2, 1 November 1979.

<sup>97</sup> *Id.*

Other countries hailed the agreement, based on fruitful cooperation as a "major political compromise,"<sup>98</sup> as a balanced accord even though it failed "to cover every eventuality as exhaustively as an agreement of that nature should,"<sup>99</sup> and the successful outcome of almost irreconcilable differences."<sup>100</sup>

Austria, which had played a substantial role in obtaining approval for the terms of the accord, concluded that all mankind would be beneficiaries. In support of this conclusion their delegate asserted that the agreement allowed for the "use of the natural resources of celestial bodies and outer space . . . [to] take place in a predominantly peaceful environment, in an orderly fashion, in accordance with international law, on the basis of international cooperation and mutual understanding, and in accordance with previously agreed procedures."<sup>101</sup> In this way the Austrian delegate was endeavoring to capture and record the view that the new accord had not weakened the guarantees contained in the 1967 Principles treaty. Nonetheless, it was well understood that most of Article 11 was completely innovative and that it constituted, depending on its entry into force, a profound departure from the province of mankind and *res communis* principles of the earlier agreement. Following the General Assembly's approval of the Agreement on December 14, 1979, it was opened for ratification or accession.

#### The Treaty Between 1985 and 1997

COPUOS and the General Assembly have endeavored to obtain support for all of the outer space treaties. Following the entry into force of the Moon Treaty in 1985 it might have been supposed that the parties bound by it would have made efforts to persuade other States to join them. Since the agreement occupied a novel position, because of the Article 18 provision relating to its 10-year review, the parties could have taken the initiative in seeking the convening of a future revision conference.

There is almost no evidence of such efforts. The most that can be said of such an approach is that there were a limited number of manifestations of support.<sup>102</sup> Such national statements were made at meetings of COPUOS and in the Fourth Committee of the General Assembly.

Initially the debates took place under the topic of ways and means of maintaining outer space for peaceful purposes. Later they were made under the agenda item entitled "Consideration of the legal aspects related to the application of the principle that the exploration and utilization of outer

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<sup>98</sup> Brazil, *Id.* at 5.

<sup>99</sup> Venezuela, U.N. Doc. A/SPC/34/16, 10, 31 Oct. 1979.

<sup>100</sup> Argentina, *Id.* at 12.

<sup>101</sup> *Id.* at 12.

<sup>102</sup> Reflecting the passive outlook toward the Moon Treaty was the statement of the Chairman of COPUOS in 1984. In his annual report he observed that "the last major agreement" achieved by COPUOS took place in 1979. General Assembly Official Records, 39th Sess., Supp. No. 20, 20 U.N. Doc.A/39/20.

space should be carried out for the benefit and in the interests of all States, taking into particular account the needs of developing countries."<sup>103</sup> Under this formulation it was anticipated that the subcommittee "could gradually develop a framework aimed at securing the equitable access of all States to the benefits derived from the use and exploration of outer space, which framework would constitute a progressive development of international space law."<sup>104</sup> A review of existing international space agreements was explicitly recited as being within the jurisdiction of a proposed working group.<sup>105</sup>

Between 1985-1997 there were periodic laudatory statements made by representatives of developing countries in support of CHM.<sup>106</sup> During this time frame there was no visible effort to make the agreement more acceptable to the space-resource States. The debates during this period disclosed a variety of interesting positions.

For example, during the 1987 meeting of the subcommittee Yugoslavia stated that the geostationary orbit was a CHM. This position was also advanced by China.<sup>107</sup> In the following year the Chinese delegate observed that the geostationary orbit was "a limited natural resource which formed part of the heritage of mankind and should therefore be used for the benefit of the whole of humanity . . . [while subject to a] special legal regime."<sup>108</sup> In the same year the representative of Venezuela spoke of space as being a CHM.<sup>109</sup>

In 1988 the Soviet Union proposed a "permanent world-wide international body, a world space organization . . . [which was to serve as] a focal point for the practical development of a universal model of international space exploration."<sup>110</sup> Support was voiced by Romania, the German Democratic Republic, Cuba, Czechoslovakia, Poland, Hungary, and Mongolia.<sup>111</sup>

The Federal Republic of Germany opposed the proposal. Its representative characterized it as "a costly new bureaucratic machinery."<sup>112</sup> Opposition was voiced by the United States. Its representative stated that greater benefit would be derived from the strengthening of "the present structure of multilateral instruments."<sup>113</sup>

The representative of the United Kingdom, in remarks that could apply to the Moon Agreement, stated that the work of COPUOS "will not prosper unless we can arrive at a common understanding of what is necessary and

<sup>103</sup> U.N. Doc.A/AC.105/430, 10, 26 April 1989.

<sup>104</sup> *Id.* at 11.

<sup>105</sup> *Id.* at 15.

<sup>106</sup> U.N. Doc.A/AC.105/C.2/SR.454, 3, 18 March 1987.

<sup>107</sup> *Id.*

<sup>108</sup> U.N. Doc. AC.105/C.2/SR.482, 3, 17, March 1988.

<sup>109</sup> U.N. Doc. A/AC.105/C.2/SR.493, 3, 29 March 1988.

<sup>110</sup> U.N. Doc. A/AC.105/PV.312, 16, 15 June 1988.

<sup>111</sup> *Id.* at 8, 22, 32; U.N. Doc. A/AC/PV.309, 11, 31, 52, 14 June 1988.

<sup>112</sup> U.N. Doc. A/AC.105/PV.314, 2, 16 June 1988.

<sup>113</sup> *Id.* at 18.

realistically achievable and move forward in a way which will be of practical value, particularly to the developing countries, without prejudice to the interest of any other member."<sup>114</sup> In the same vein the Mexican delegate observed that "the development of norms of international law is usually a lengthy and complex process that puts our patience to a test and that requires a readiness to reconcile different interests."<sup>115</sup>

In 1989 the Soviet Union called again for the establishment of a world space organization. At this time it was pointed out that such a body would not replace COPUOS, would not become a bureaucracy, would not be duplicative of other institutions, and would not be a supranational organization.<sup>116</sup> Vietnam announced its support for such an entity.<sup>117</sup> The German Democratic Republic repeated its earlier support on the grounds that such a body could aid in "the progressive development and codification of legal regulations concerning outer space."<sup>118</sup> The United States responded that the Soviet proposal "to establish a new international machinery does not present a promising avenue to explore at this time."<sup>119</sup>

The Soviet Union also referred to the Moon Agreement. The reference was in the context of its disarmament provisions.<sup>120</sup> This was the first specific reference to that agreement that had been made in COPUOS since its entry into force in 1985.

However, the Moon Agreement had not been forgotten entirely. References to its CHM provision was made in 1989 by Chile,<sup>121</sup> Brazil,<sup>122</sup> and Nigeria.<sup>123</sup>

In 1990 Colombia stated that outer space resources were the CHM.<sup>124</sup> In that year the representative of the International Astronautical Federation reported that the International Institute of Space Law had considered "whether it would be desirable to draw up the basic outline of a legal regime for the exploitation of the natural resources of the moon and other celestial bodies."<sup>125</sup>

In 1991 the Soviet representative spoke favorably of the five UN-formulated treaties on international space law and the three declarations that had been approved by the General Assembly. In his words, they "constituted the framework of contemporary international space law."<sup>126</sup>

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<sup>114</sup> U.N. Doc. A/AC.105/PV.319, 23, 21 June 1988.

<sup>115</sup> *Id.* at 46.

<sup>116</sup> U.N. Doc. A/AC.105/PV.326, 21, 7 June 1989.

<sup>117</sup> *Id.* at 4.

<sup>118</sup> *Id.* at 7.

<sup>119</sup> *Id.* at 20.

<sup>120</sup> *Id.* at 36.

<sup>121</sup> U.N. Doc. A/AC.105/PV.323, 27, 6 June 1989.

<sup>122</sup> U.N. Doc. A/AC.105/PV.327, 27, 8 June 1989.

<sup>123</sup> U.N. Doc. A/AC.105/PV.330, 23, 9 June 1989.

<sup>124</sup> U.N. Doc. A/AC.105/C.2/SR.533, 2, 2 May 1990.

<sup>125</sup> *Id.* at 3.

<sup>126</sup> U.N. Doc. A/AC.105/C.2/SR.540, 7, 12 April 1991.

In 1992 Nigeria emphasized its support for the CHM stating that "outer space was part of the CHM."<sup>127</sup> At the same meeting the representative of China spoke in general terms of the function of the subcommittee. He observed that "the elaboration of international space law within the United Nations system . . . [must be considered] to be very important."<sup>128</sup>

In 1993 the subcommittee examined in detail the agenda item on benefits and interests. This allowed for comments on the existence of international agreements seeking to advance the condition of the developing countries. In this connection Italy pointed out that existing treaties provided a useful basis for advancing indigenous capabilities, "particularly in developing countries."<sup>129</sup>

During the 1993 session of COPUOS mention was made of the importance of CHM to developing countries. Such concerns were voiced by Senegal<sup>130</sup> and Indonesia.<sup>131</sup>

During the 1993 session of COPUOS there were no efforts to bring into focus a 1994 revision of the Moon Agreement. Perhaps the most relevant observation came from India, whose representative stated there was a need to maintain "the relevance of the already developed international legal framework in this field."<sup>132</sup> He was more specific in advocating the need to protect the interests of developing countries and in urging that the subject of the safe use of nuclear power sources be assigned a priority.<sup>133</sup> He expressed the hope that international approaches to space would serve "as a motivational force for strengthening international cooperation . . . [and that this would lead to] the spreading of the benefits of those developments."<sup>134</sup>

Other observations in 1993 were also couched in very general terms. Expressing a frustration, growing out of the 1993 session of the subcommittee, was the comment of the representative of Colombia. He stated that the delegates were "often apt to lose sight of legal issues and to be side-tracked by political discussions."<sup>135</sup>

However, other representatives remained hopeful. Thus, the Chinese representative observed that the elaboration of legal principles would minimize space conflict and would provide international peace and security.<sup>136</sup> Following the same theme the Indonesian delegate stated that

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<sup>127</sup> U.N. Doc. A/AC.105/C.2/SR.553, 4, 31 March 1992.

<sup>128</sup> *Id.* at 5.

<sup>129</sup> U.N. Doc. A/AC.105/C.2/SR.569, 1, 12 August 1993.

<sup>130</sup> U.N. Doc. A/AC.105/PV.380, 27, 8 June 1993.

<sup>131</sup> U.N. Doc. A/AC.105/PV.382, 49, 9 June 1993.

<sup>132</sup> U.N. Doc. A/AC.105/PV.387, 4, 18 June 1993.

<sup>133</sup> *Id.*

<sup>134</sup> *Id.*

<sup>135</sup> *Id.* at 11.

<sup>136</sup> U.N. Doc. A/AC.105/PV.388, 10, 21 June 1993.



the absence of law "could affect the growth, progress, and preservation of our world."<sup>137</sup>

The delegates debated the timeliness of convening a Third United Nations Conference on the Exploration and Uses of Outer Space. The United States representative said that there were a number of issues to be resolved before such an event could be scheduled. Using a global perspective for his comment he suggested the need to deal with the world's oceans and environment.<sup>138</sup>

With the foregoing outlooks being presented to COPUOS in 1993 it was quite predictable what would probably occur in 1994.

On March 21, 1994 the Chairman of the subcommittee indicated that in that year a review of the status of the Moon Agreement would occur.<sup>139</sup> There were no immediate or direct responses to the statement. However, reference was made by the representative of the Russian Federation to the difficulties encountered in obtaining support for the 1982 Law of the Sea Convention. He stated that it had taken ten years to obtain sufficient ratifications for its entry into force. He also observed that among the non-ratifiers were those countries which "were supposed to provide financial and technological assistance."<sup>140</sup>

The United States, in assessing the role of the subcommittee, indicated that it was to engage in "the development of new legal regimes or principles . . ."<sup>141</sup> To this the Indian representative suggested that the subcommittee's duty was to "continue to pursue the task of developing outer space law."<sup>142</sup>

At this time several references were made to CAM. The Republic of Korea stated that "outer space was the common heritage of mankind and not subject to national appropriation by claim of sovereignty."<sup>143</sup> The representative of the Russian Federation indicated that "as part of outer space, the geostationary orbit belonged to the common heritage of mankind."<sup>144</sup>

Portugal called attention to the Moon Treaty's CHM provision for the sharing of benefits. A comparison was made to the 1982 Law of the Sea Convention. It was noted that "very elaborate provisions of international cooperation"<sup>145</sup> were applicable to the transfer of marine technology and cooperation in areas of scientific research. Other delegations also made brief references to the CHM provisions affecting the ocean and outer space. For example, the Spanish representative observed that "There were a number of similarities between the law of the sea and the legal approach to

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<sup>137</sup> *Id.* at 12.

<sup>138</sup> U.N. Doc. A/AC.105/PV.384, 11, 16 June 1993.

<sup>139</sup> U.N. Doc. A/AC.105/C.2/SR.572, 3, 28 March 1994.

<sup>140</sup> U.N. Doc. A/C.105/C.2/SR.576, 9, 7 April 1994.

<sup>141</sup> *Id.* at 11.

<sup>142</sup> U.N. Doc. A/AC.105/C.2/SR.577, 4, 7 April 1994.

<sup>143</sup> U.N. Doc. A/AC.105/C.2/SR.577, 3, 7 April 1994.

<sup>144</sup> *Id.* at 5.

<sup>145</sup> *Id.* at 4.

outer space."<sup>146</sup> The Soviet Union has consistently rejected reference to maritime analogies for outer space, holding that international space law was "arising and developing with due consideration for the specific features of the space activities of states. . . ."<sup>147</sup>

Even though the foregoing record discloses hardly any support for the Moon Agreement, except for periodic specific references to its CHM provision, it was required that consideration be given to its review through inclusion in the provisional agenda of the 1994 General Assembly. When this subject was considered by COPUOS the Chairman stated that he would welcome "any inputs on this matter at this session to provide some guidance for the discussions at the next session of the General Assembly."<sup>148</sup> He stated that the question of the review of the Agreement "should be included in the agenda of the Assembly in order that the Assembly might consider, in the light of the past application of the Agreement, whether it requires revision."<sup>149</sup>

In light of the priorities previously assigned to the completion of the agreement, there were surprisingly few direct statements on the subject. One response was that of Mexico. Its delegate merely observed that the desirability of such a review "should be considered."<sup>150</sup> He made reference to the importance of a legal framework guaranteeing that the exploration and peaceful use of outer space will be "carried out for the benefit of all humankind."<sup>151</sup> The representative of China offered the suggestion that any revision should be "carried out with prudence and on the basis of wide consultations with all Member States."<sup>152</sup>

While statements were made which mentioned terms found in the agreement, such as the Russian Federation's representative's reference to CHM and to the interests of developing countries,<sup>153</sup> there was no systematic analysis of the terms of the Moon Agreement. There were, however, numerous references to such items as boundary matters, the geostationary orbit, debris, technological and scientific spin-offs, benefits and interests, and, in general, the need for peaceful uses, including a third space conference.

Affecting the prospect for discussions on the agreement was the observation of the representative of the Russian Federation. He stated that the space powers needed "to change some of their current habits. They should overcome the prevailing stereotypes and prejudices."<sup>154</sup> He also stated that they needed to "correct their behavior in the light of present

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<sup>146</sup> U.N. Doc. A/AC.105/C.2/SR.578, 4, 7 April 1994.

<sup>147</sup> G. Zhukov and Y. Kolosov, *INTERNATIONAL SPACE LAW* 16 (1984).

<sup>148</sup> U.N. Doc. A/AC.105/PV.393, 10, 6 June 1994.

<sup>149</sup> *Id.*

<sup>150</sup> *Id.* at 14.

<sup>151</sup> *Id.*

<sup>152</sup> U.N. Doc. A/AC.105/PV.401, 12, 15 June 1994.

<sup>153</sup> *Id.* at 6.

<sup>154</sup> U.N. Doc. A/AC.105.PV.394, 1, 1 June 1994.

realities."<sup>155</sup> He also observed that the basic idea of employing space and its resources was to serve the interests of all mankind. While he hoped this would allow for special account to be taken respecting the interests of developing countries, he noted that this entailed practical considerations. He stated that "when it comes to such practical aspects as financing or the transfer of technology . . . [these have] given rise to great difficulties in contemporary international economic relations."<sup>156</sup>

On the assumption that developing countries would be large beneficiaries of the sharing of the natural resources of the moon and other celestial bodies, he suggested that those states with some outer space potential and "related aspects of technology should give a precise, practical outline of a model that they envisage for access to outer space activities. . . ."<sup>157</sup> He added that the plan might include attention to services, preferences, the means to effect the redistribution of benefits, and supportive material for "translating this model into reality."<sup>158</sup>

During the 1994 session of COPUOS the representative of Morocco, without making a special reference to the Moon Agreement, observed that "international outer space law must be revised."<sup>159</sup> This contrasted with the view of the Spanish representative. After pointing out that Spain was a party to three of the COPUOS treaties, he observed with respect to the Moon Agreement, which Spain had not ratified, that his country was "waiting to see what is decided . . . before beginning the process of acceding to that Agreement."<sup>160</sup>

The United States delegate did not express a direct view on revision of the agreement. He did observe, however, that matters to be considered by COPUOS "should not unnecessarily impede further progress in the exploration and use of outer space."<sup>161</sup>

On the basis of such remarks, and, undoubtedly after consultations with members of COPUOS, the Chairman prepared the 1994 report of the committee.<sup>162</sup> Under the heading of "Recommendations and Decisions," reference was made to "The Question of the Review of the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies." After referring to Article 18 of the agreement and General Assembly Resolution 48/39 of December 10, 1993, he stated that "the view was expressed that because the Agreement had so far been ratified by nine Member States and had been signed by five others, any possible revision of

<sup>155</sup> *Id.* at 2.

<sup>156</sup> *Supra* note 153, at 6.

<sup>157</sup> *Id.*

<sup>158</sup> *Id.*

<sup>159</sup> U.N. Doc. A/AC.105/PV.397, 8, 8 June 1994.

<sup>160</sup> *Supra* note 155, at 10.

<sup>161</sup> U.N. Doc. A/AC.105.PV.402, 2, 14 June 1994.

<sup>162</sup> General Assembly, Official Records, 49th Sess. Supp. No. 20, U.N. Doc. A/49/20. His report referred to Committee discussions on CHM. In this connection he stated that some States had advanced the view that the law of the sea negotiations on CHM were relevant to outer space benefits. Other countries wished to separate the applicability of CHM to the ocean from its application to outer space.

its provisions should be conducted with prudence and only on the basis of consultations with all Member States."<sup>163</sup> This led to the Committee's recommendation, namely, that "the General Assembly, at its forty-ninth session, in considering whether to revise the Agreement, should take no further action at that time."<sup>164</sup>

The 1994 COPUOS report was reviewed by the Fourth Committee. The latter established a working group chaired by the Austrian representative. Its draft resolution consisted of nine pages and mentioned all of the matters that had come to the attention of COPUOS in 1994. The draft took note of the COPUOS report which had recommended that the General Assembly in its current session "in considering whether to revise the Agreement . . . should take no action at the present time."<sup>165</sup> At the same time the draft set forth the standard language used by the General Assembly in inviting States "that have not yet become parties to the international treaties governing the uses of outer space to give consideration to ratifying those treaties."<sup>166</sup>

At the time the draft was submitted to the Fourth Committee the Chairman of COPUOS repeated the approach previously suggested by China, namely, in this case, that "Any possible revision should be conducted with prudence and only on the basis of consultation with Member States."<sup>167</sup>

In 1994 the General Assembly, being aware of the terms of Article 18, and not having received from the Legal Sub-Committee, COPUOS, or its Fourth Committee any specific or substantial demand for a review conference, resolved the matter with the adoption of a resolution. The General Assembly began by affirming that international cooperation in the peaceful uses of outer space required that attention be given to a review of space issues.

With respect to the Moon Agreement the General Assembly's response was brief and to the point. On December 9, 1994 it adopted unanimously, and without change, the report of the Fourth Committee.<sup>168</sup> Without offering any specific reason for its action it merely concluded that "in considering whether to revise the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, [the General Assembly] should take no action at the present time."<sup>169</sup>

In 1995 the General Assembly, despite its decision not to seek a revision of the Moon Agreement, adopted the same resolution employed before 1994 and after 1995. By its resolution the General Assembly invited "States which have not yet become parties to the international

<sup>163</sup> *Id.* at para. 152.

<sup>164</sup> *Id.* at para. 153.

<sup>165</sup> U.N. Doc. A/A.4/49/L.II, 9, 11 November 1994.

<sup>166</sup> *Id.* at 9.

<sup>167</sup> U.N. Doc. A/C.4/49/SR.18, 5, 7 November 1994. The Chinese proposal had referred to "all" member states, which may have referred to COPUOS members.

<sup>168</sup> G.A. Res. 49/34; General Assembly Official Records, 49th Sess., Supp. No. 49, 91, U.N. Doc. A/49/49 (1994).

<sup>169</sup> *Id.*

treaties governing the uses of outer space to give consideration to ratifying or acceding to those treaties."<sup>170</sup>

Thus, the period prior to and after 1994 was marked by a general lack of interest in reviewing the 1979 Moon Agreement. The subcommittee allowed itself to become largely engaged in dealing with its official agenda items, namely, the formation of principles relating to the use of nuclear power sources in outer space, the boundary question and the use of the geostationary orbit, and the use of outer space for the benefit and in the interests of all States including reference to the needs of developing countries.<sup>171</sup> Even in a political environment lacking much of the confrontational behavior which was present during the 1970s, no vital circumstances arose to mandate a review of the agreement.

It was evident that a review conference would depend on the joint and common interests of the United States and the Soviet Union. The feeble and tentative efforts of the Soviet Union were met largely by silence on the part of the United States.

The views and behavior of these two States was also reflected in statements made before COPUOS and at the Fourth Committee during the indicated years. Aside from any evidence of an immediate need to establish a formal regime, there was an awareness of the complexity of the issues which would have to be resolved. The delegates who referred to the extended negotiations leading to the 1982 Law of the Sea Convention were actually posing the question: Is it worthwhile to try to establish a legal regime prior to the very real prospect for commercial exploitation? Since most of the space-resource States urged a step-by-step or "go slow" process, the other countries spoke about equities and the preservation of the CHM. By keeping these matters "on the record," it evidently was their hope that such factors will be considered if and when the Moon Treaty becomes a future subject of an official review.

In the years preceding the General Assembly's foregoing unfocused review of the revision of the Moon Treaty there were no practical manifestations requiring that serious attention be given to it. Security considerations, property rights, and dreams that a new "horn of plenty" was ready to disgorge its bounties were not real enough to make the matter worth discussing. While the confrontational behavior that had been present in the negotiations of the 1960's and 1970's was no longer evident, this factor did not appreciably improve the working processes of the subcommittee or the committee. An outlook of "let well enough alone" pervaded the thinking of some countries. On the whole these were the space-resource States. But, as has been noted, the developing countries did not put forward a plan that might have provoked a meaningful analysis. As a result the Moon and celestial bodies have been allowed to return to the popular stereotype, namely, they are a cruelly cold, inhospitable, and

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<sup>170</sup> G.A. Res. 50/27; General Assembly Official Records, 50th Sess., Supp. No. 49, U.N. Doc. A/50/49, 116 (1995).

<sup>171</sup> U.N. Doc. A/AC.105/573, 14 April 1994.

forbidding area generally without the need of the new law proposed for them in the 1979 agreement.

Nonetheless, nine States are bound by the Moon Agreement. This has produced two coexisting international legal regimes appertaining to the moon and other celestial bodies. A parallel situation emerged following the signing of the 1982 Law of the Sea Convention when four major maritime States (the Federal Republic of Germany, France, the United Kingdom, and the United States) on September 2, 1982 entered into the Agreement Concerning Interim Arrangements Relating to Polymetallic Nodules of the Deep Sea Bed.<sup>172</sup> For the moment the presence of the two treaty-based regimes for the moon and other celestial bodies probably is not detrimental to general community interests. Until exploitative activities resulting from the utilization of such resources produce earth benefits, it is not likely that meaningful harms or unimportant inequities will result.<sup>173</sup>

#### Revival of Interests in the UN Space Agreements: 1995 to the Present

The decision of the General Assembly in 1994 terminated any immediate prospect for a revision of the Moon Agreement. It also effectively disavowed the assignment to COPUOS in 1971 of the priority classification on that subject. The Legal Sub-Committee dropped the matter. That did not mean that a legal regime for the Moon and other celestial bodies was irrelevant. Nor had some of the key issues of the draft agreement been forgotten. The concern for the uneven support accorded to the five space instruments remained.

In 1995 new trends began to emerge. In the subcommittee Spain reverted to its interest in CHM as it related both to outer space and the law of the sea.<sup>174</sup> Romania urged that "States should have access to the knowledge and applications derived from the exploration and utilization of outer space on an equitably, non-discriminatory and timely basis. . . ."<sup>175</sup>

Also in 1995 the subcommittee considered its agenda item entitled "Ways and Means of Maintaining Outer Space for Peaceful Purposes." Attention was drawn to the possibility that the status of the five outer space treaties might be a suitable subject.<sup>176</sup> This was presented to COPUOS. In its 1995 Report it enlarged the area of inquiry. Also suggested were commercial aspects of space activities, such as property rights, insurance, and liability.<sup>177</sup>

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<sup>172</sup> Agreement Concerning Interim Arrangements Relating to Polymetallic Nodules of the Deep Sea Bed, TIAS 10562, 21 ILM 590.

<sup>173</sup> C.Q. Christol, *The Moon Treaty and the Allocation of Resources*, XXII:II ANNALS AIR & SPACE L. 45 (1997).

<sup>174</sup> U.N. Doc. A/AC.105/C.2/SR.580, 7, 31 March 1995.

<sup>175</sup> U.N. Doc. A/AC.105/PV.413, 5, 19 June 1995.

<sup>176</sup> U.N. Doc. A/AC.105/607, 10, 19 April 1995.

<sup>177</sup> *Id.*

COPUOS suggested a questionnaire on three subjects. First, the Committee referred to the sufficiency of the existing international legal regime for ensuring peace, law, and order in space "currently, in the near future, and in the long-term."<sup>178</sup> Second, the Committee wanted information on possible new legal and other measures applicable to peace, law, and order in space. Third, as to legal instruments, the Committee sought responses on "Is there a requirement for the modification of existing legal instruments or is there a need for the elaboration of a new instrument? If so, in what areas?"<sup>179</sup>

This subject was reviewed by the subcommittee in 1996. To provide new direction for the subcommittee the government of Mexico submitted an unofficial background note.<sup>180</sup> After reciting the number of ratifications and signatures for the five treaties, the note signalled the limited application of the agreements. The purpose of the proposals was to obtain the "preparation of a preliminary document compiling the opinions of COPUOS delegations on this situation, as well as consideration of the advisability of devising some kind of multilateral strategy to achieve a greater commitment of States to the existing legal instruments."<sup>181</sup>

During the 1996 meeting of the subcommittee attention was given to the possibility of cooperative ventures in the area of communications and intellectual property rights in a working paper submitted by Germany and France.<sup>182</sup> In their proposed draft resolution the two countries specified the means to accomplish the proposed exploration and utilization of the space resource. They indicated the possibility of both governmental and non-governmental activity. Moreover, they perceived that the activity could be either on a commercial or on a non-commercial basis.<sup>183</sup> The evolvement was captured in the 1996 Report of the Legal Sub-Committee, where the Chairman reported that "future activities in outer space would be increasingly regulated by market forces. . . ."<sup>184</sup> At the same time he noted that such activities would be subject to "intergovernmental regulation," and that "the development of outer space law would continue to be of paramount importance..."<sup>185</sup> This suggested that moon activities might be carried out under the same circumstances.<sup>186</sup>

<sup>178</sup> General Assembly, Official Records, 50th Sess., Supp. No. 20, U.N. Doc. A/50/20 (1995).

<sup>179</sup> *Id.*

<sup>180</sup> U.N. Doc. A/AC.105/639, 40, 11 April 1996.

<sup>181</sup> *Id.*

<sup>182</sup> U.N. Doc. A/AC.105/639, 32, 3 June 1996; U.N. Doc. A/AC.105/C.2/197/Rev.1, 1, 19 March 1996. B.L. Smith and E. Mazzoli, *Problems and Realities in Applying the Provisions of the Outer Space Treaty to Intellectual Property Issues*, 40 PROC. COLLOQ. L. OUTER SPACE 169 (1988). Compare R. Oosterlink, *Tangible and Intangible Property in Outer Space*, 39 PROC. COLLOQ. L. OUTER SPACE 277 (1997).

<sup>183</sup> *Id.* at 33.

<sup>184</sup> *Id.* at para. 48.

<sup>185</sup> *Id.*

<sup>186</sup> F.G. von der Dunk, *The Dark Side of the Status of the Moon: Public Concepts and Private Enterprises*, 40 PROC. COLLOQ. L. OUTER SPACE 119 (1997).

The extent of property rights on the moon goes well beyond communications and intellectual property. The Moon treaty in Article 11 imposes wide-ranging limitations on acquiring property rights except when a natural resource is removed from its "in place" location. An attempt to clarify property rights in such substances has been made via a theory of "functional property rights."<sup>187</sup> Such an approach would not depend upon a State's control over a specific area. Rather, it would depend on national "control over the space objects and personnel at that location."<sup>188</sup> Such national jurisdiction would, in any event, be permissible in the absence of a viable Moon Treaty.

The 1967 Principles Treaty did not impose the Moon Treaty's limitation allowing only for the removal of natural resources from their "in place" location. As has been indicated above, the acceptance of the *res communis* principle in the Principles Treaty, and confirmed in Article 11.2. of the Moon Agreement -- subject to the importance limitations contained in CHM -- allows for exploitative activities. As noted by Professor Cheng the Principles Treaty, "while it precludes the space powers from appropriating territorially portions of outer space, the moon and other celestial bodies, leaves them free, notwithstanding views to the contrary, nevertheless to appropriate their resources."<sup>189</sup> In 1996 the Chinese delegate observed that "the elaboration of space law must be accelerated."<sup>190</sup> This was followed by a statement on the part of the U.S. representative. He indicated that the subcommittee "should not consider matters which would needlessly complicate efforts to improve . . . international cooperation in outer space."<sup>191</sup> He continued: "With a view to promote progress . . . [the subcommittee should] avoid seeking to create new legal regimes for which there was no practical or legal need and which were bound to stir up controversy."<sup>192</sup> He added that the United States could not find a need for the proposed Third United Nations Conference on the Peaceful Uses of Outer Space.<sup>193</sup>

The continuing role to be played by the subcommittee in the progressive development of international space law was astutely identified by the Austrian representative. As the 1996 session was drawing to a close he stated "Higher priority must be accorded to making legal solutions to space problems acceptable to the key players involved, without which international instruments on space law would be useless."<sup>194</sup> At the same session Nigeria, remaining steadfast in its support for an extended reading

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<sup>187</sup> W.N. White, Jr., *Real Property Rights in Outer Space*, 40 PROC. COLLOQ. L. OUTER SPACE 380 (1998).

<sup>188</sup> *Id.*

<sup>189</sup> *Supra* note 2, at 214.

<sup>190</sup> U.N. Doc. A/AC.105/C.2/SR.590, 4, 22 March 1996.

<sup>191</sup> *Id.* at 5.

<sup>192</sup> *Id.*

<sup>193</sup> *Id.* at 6.

<sup>194</sup> U.N. Doc. A/AC.105/C.2/SR.591, 4, 27 March 1996.



of CHM, observed that "outer space, including the geostationary orbit, was a common heritage. . . ." <sup>195</sup>

By 1996 it was becoming evident that States were becoming interested in examining the role of law respecting outer space activities. Accordingly the COPUOS report for that year referred to the status of the five international legal instruments of outer space. This subject was identified as a possible agenda item for the Legal Sub-Committee. <sup>196</sup>

Within this framework the General Assembly became aware of other legal matters which have been heavily debated in COPUOS in recent years. Several have relevant legal ramifications. For example, the agenda item concerning a "Declaration on international co-operation in the exploration and use for the benefit and in the interest of all States, taking into particular account the needs of developing countries" raises issues respecting the natural resources of the Moon and other celestial bodies. The 1996 COPUOS report dealing with this subject, following the recommendation of the Fourth Committee, was approved by the General Assembly on December 13, 1996. <sup>197</sup>

The General Assembly was also made aware by COPUOS of intellectual property rights resulting from human activity in the exploration, exploitation, and use of the Moon and other celestial bodies. Thus, COPUOS in its 1996 report to the General Assembly noted that contracts relating to "intellectual property rights" should be "fair and reasonable." <sup>198</sup> The report identified types of agreements on this subject emanating from "governmental, non-governmental, commercial and non-commercial, global, multilateral, regional, or bilateral. . . ." sources. <sup>199</sup>

During its 1997 session the subcommittee was able to study a new working paper prepared by Mexico. <sup>200</sup> Mexico identified the purpose of its proposal. The goal was to obtain the widest and fullest adherence to the five agreements while assessing their status in promoting the peaceful uses of outer space. The following condition was attached: "The initiative would not lead to reopening of substantive debate on the treaties, or any proposals for their revision or amendment." <sup>201</sup>

So that the subcommittee would best be able to cope with the subject it was hoped that upon request States would submit reports allowing for ascertaining why the agreements had not been ratified. After study it was

<sup>195</sup> U.N. Doc. A/AC.105/C.2/SR.592, 2, 27 March 1996.

<sup>196</sup> General Assembly, Official Records, 51st Sess., Supp. No. 20, U.N. Doc. A/51/20, 20 (1996).

<sup>197</sup> G.A. 51/122, 13 December 1996.

<sup>198</sup> General Assembly, Official Records, 51st Sess., Supp. No. 20, U.N. Doc. A/51/21, para. 2 (1996).

<sup>199</sup> *Id.* at para. 4.

<sup>200</sup> U.N. Doc. A/AC.105/C.2/L.206 Rev. 1 of 4 April 1997, U.N. Doc. A/AC.105/674, 22, 14 April 1997.

<sup>201</sup> *Id.* at 23.

expected that the subcommittee would be able to "propose mechanism towards achieving the fullest. . . <sup>202</sup> adherence to the agreements.

To facilitate the work of the subcommittee the plan called for the preparation by the Secretariat of a report. This would facilitate an understanding by the subcommittee why States had not become parties and also how it might facilitate the fullest adherence to the five instruments.<sup>203</sup>

Mexico proposed that the inquiry be completed in three years. During the first year there would be a study of national reports so that it would be possible to know what had impeded ratifications. During the second year the working group would analyze national reports, prepare recommendations, and submit its draft to the subcommittee. During the final year there would be a consideration and implementation of the measures best suited to achieve the objectives of the inquiry.<sup>204</sup>

Following the subcommittee's agreement that the foregoing should become an agenda item, the subject was submitted to COPUOS for approval. At its 1997 meeting the Committee endorsed the proposal that there be a new agenda item entitled "Review of the Status of the Five International Instruments Governing Outer Space." Approval was given to the subcommittee to begin its considerations in 1998.<sup>205</sup>

In 1997, as had been the case in 1996, the General Assembly repeated its call to States to give consideration to ratifying or acceding to the five space instruments.<sup>206</sup>

### Conclusion

It is evident that COPUOS employs well-considered procedures in the preparation of draft international agreements. Its use of consensus provides an opportunity to consider all relevant points of view.

The implicit assumption underlying the negotiations leading to the Moon Agreement was that in its final form it would command the support of a large number of States. This is true even though, or despite the fact that, the substantive decision had to be made within a complex political context. The Moon Agreement obtained approval in COPUOS despite alignments of

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<sup>202</sup> *Id.*

<sup>203</sup> *Id.*

<sup>204</sup> *Id.*

<sup>205</sup> General Assembly, Official Records, 52d Sess., Supp. No. 20, U.N. Doc. A/52/20 (1997).

<sup>206</sup> G.A. Res. 52/56, 12 Feb. 1998, U.N. GAOR Supp. (No. 52) (A/52/615) (1998); G.A. Res. 51/122, 13 Dec. 1996, U.N. GAOR Supp. (No. 51) (A/51/590) (1997). This practice went back to the endorsement of the General Assembly of the 1967 Principles Treaty. On that occasion the General Assembly reaffirmed the importance of developing the rule of law for space activities and, in commending the agreement, expressed the hope that the agreement would obtain "the widest possible adherence." U.N. Doc. A/RES/2222 (XXI), 25 January 1967.

East and West, of the socialist and free enterprise countries, and of North and South combinations, including the Group of 77.<sup>207</sup>

The review of the initial proposals of 1969 and the 1970-1973 debates identified the major issues facing the architects of the agreement. It was not until 1979 that the final draft received the approval of the Legal Sub-Committee, COPUOS, the General Assembly's Fourth Committee and the General Assembly. The latter's approval was without a formal vote.<sup>208</sup> Even though the draft agreement was the product of the consensus process, and even though its terms apparently had the full support of the space-resource States, when prospective parties were faced with the legal consequences of ratification or accession, old doubts were revived. These were not addressed to the numerous provisions which had their source in the 1967 Principles Treaty. There can be no doubt that those principles or rules that were repeated from the 1967 agreement constitute valid space law.

Rather, it was the more novel CHM and legal regime for the distribution of space benefits provisions that failed to command continuing support on the part of the major resource States.

Developing countries, which during the negotiations had given so much verbal support to CHM, with very few exceptions failed to ratify the accord. This was surprising in so far as Article 11 was designed to serve their interests. Even Argentina has declined to ratify or accede to the agreement. Thus, those countries, which sought to achieve protection against the unilateral activities permissible under the *res communis* principle, have not created a legal foundation suited to their proclaimed needs.

The vanishing consensus may be attributed to concerns over the impact of Article 11. There was lingering doubt as to the meaning and implementation of CHM, as to the powers of the regime that was to effect the sharing of benefits, and the meaning to be accorded to such terms as "natural resources in place," "property," "ownership," "exploitation," and "equitable sharing." The provision in Article 18 for a review conference to be convened 10 years after the agreement had entered into force disclosed the existence in 1979 of major concerns over the final terms of the agreement.

In light of the original formal support resulting from the consensus process, which is intended to create expectations that the product will receive ultimate approval, the general rejection of the agreement must be considered to be more than a disappointment. The entire experience serves as a warning to those who engage in the creation of new international law. Well-intentioned novelty can be troublesome. As it has turned out, this treaty has become more of a way station than a final destination.

With the resurrection of pre-consensus doubts by those States which have elected not to ratify or to accede to the agreement, the accord has been denied the force of general international law. Put otherwise, there are now

<sup>207</sup> N. Jasentuliyana, *The Role of Developing Countries in the Formulation of Space Law*, XX:II ANNALS AIR & SPACE L. 95 (1995).

<sup>208</sup> G.A. Res. 34/68, 14 December 1979.

two treaty regimes for the moon and other celestial bodies, namely, the *res communis* regime of the 1967 Principles Treaty and the CHM regime of the 1979 accord. If this is the situation, there has been a departure from the expectation that there would be, as in the case of the four earlier COPUOS-based instruments, a singular and unique legal regime for the moon and other celestial bodies and their natural resources.

The inconsistencies between the 1967 Principles Treaty and the Moon Agreement have produced two legal regimes. In short, the States which are not bound by the Moon Agreement, but which are parties to the 1967 Treaty, remain free to engage without any limitations except for those of the 1967 Agreement, in moon and celestial body activities, including the exploitation of their natural resources.

The situation for the States that are parties to both agreements is more ambiguous. For these countries it is to be expected they will conform to all of the terms of the Moon Agreement including the provisions of Article 11 which depart from Article I of the 1967 Principles Treaty. For example, they would be obliged to conform to the non-appropriation provisions of Article 11.2. But, until the parties of the Moon Agreement were able to put into operation the legal regime for the equitable sharing of benefits, they would remain free to disregard the CHM principle. Many countries after 1979 have expressed loyal support for CHM. Parties to one or both of the instruments would retain jurisdiction over national space activities.

In addition to treaties the common practices of States, known as general or customary international law, can serve as the basis for international law. It is evident that there is no general international law based on accepted practice supporting the existence of CHM as it relates to the exploitation and use of the natural resources of the moon and other celestial bodies. It is doubtful that reliance on a customary international law approach would, in any event, be accepted. Article 19 of the agreement, taking into account the innovative terms of the accord, specified that it would become operative following signature, ratification, or accession. This would appear to be the required means to effect its entry into force and to establish its provisions.

Despite the adoption of the Moon Agreement by the U.N. General Assembly in 1979, it now appears that many of the necessary accommodations were either overdrawn or that moon and celestial body activity can be carried out without the need for the agreement.

Even so, and despite the foregoing observation, there is a present awareness within COPUOS and professional circles that there may be a need to breathe more life into all of the international space agreements and to achieve the stability resulting from a written agreement. For example, both the International Institute of Space Law and the International Law Association's space law committee have announced plans for studies and reviews of all five agreements.

As a result of the 1996 proposal of the government of Mexico, and following years of quiet indifference on the part of COPUOS respecting the terms and the status of the five agreements, an affirmative process will soon be available to obtain greater numerical support and, possibly, newer

provisions having greater appeal and larger practical utility. Such efforts may make it possible once again to characterize international space law as the art of the possible. Presently unforeseen, but entirely possible, advances in science and technology could contribute to the need for a special legal regime for the moon and other celestial bodies.

# U.S. SPACE TECHNOLOGY EXPORTS: THE CURRENT POLITICAL CLIMATE\*

Pamela L. Meredith\*\* and Sean P. Fleming\*\*\*

## 1. Introduction

The U.S. climate for space technology exports has cooled considerably over the past year, and in some respects it has reached a near-freeze. All segments of the commercial space industry are feeling the impact. Two recent cases involving U.S. satellite manufacturers have received particular attention: In February 1999, the U.S. government refused to approve export licenses Hughes Electronics Corporation needed to send a communications satellite to its customer, Asia Pacific Mobile Telecommunications.<sup>1</sup> Loral Space and Communications Ltd. disclosed in early April 1999 that the launch of a satellite built for China would be delayed due to export controls.<sup>2</sup>

In addition to these high profile cases, there are numerous other incidents evidencing the chill in the space technology export climate. For example, technical discussions between U.S. and foreign companies are increasingly being hampered by export licensing delays and burdensome licensing conditions. As a result, U.S. companies are in some cases precluded from 1) sending requests for proposals ("RFP") to foreign suppliers; 2) submitting proposals to, or executing contracts with, foreign customers; or 3) sharing relevant technical information with foreign partners or even subsidiaries. In addition, some U.S. satellite companies are experiencing problems attracting foreign investors and obtaining insurance because they cannot provide pertinent technical details on the satellite system to foreign firms without a license.

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<sup>1</sup> Warren Ferster and Sam Silverstein, *Hughes Picks Up Pieces*, SPACE NEWS Mar. 8, 1999, at 1.

<sup>2</sup> Jeff Cole and Andy Pasztor, *Loral Says Review of Sales to China Delays New Satellite*, WALL ST. J. Apr. 2, 1999, at A3. Moreover, the preparations for the launch of six Globalstar satellites on an Ariane rocket were delayed pending approval of export licenses. Peter B. deSelding, *Export Issue Touches Europe*, SPACE NEWS Mar. 8, 1999, at 1.

The current export climate is likely to persist for some time, and as a result, U.S. companies will, in some cases, be precluded from taking advantage of business opportunities in foreign markets and foreign companies may be precluded from supplying to the U.S. market. Indeed, several companies are already placing business plans on hold and declining to pursue foreign business opportunities;<sup>3</sup> some U.S. companies are shying away from foreign suppliers. Companies should consider available mitigation measures, however, before taking such drastic steps. Among such measures are, for example, timely planning and preparation of technical assistance agreements ("TAA") and license applications; pre-application consultations with pertinent government agencies; careful drafting of TAAs/license requests; precise delineation of the scope of technology exchange; and appropriate follow-up. General consultations with appropriate U.S. government officials may also be helpful. Clearly, there will be situations where mitigation measures are not readily apparent or, indeed, available. In such cases, as always, a clear understanding the political dynamic driving the current export climate is critical.

## 2. Why the U.S. Export Climate Changed

### 2.1. Congressional Hearings and the Strom Thurmond Defense Authorization Act

The current chill in the export climate for space technology is a response to U.S. Congressional concerns about alleged improper technology transfers to the People's Republic of China in conjunction with launches of U.S.-made commercial communications satellites on the Chinese Long March vehicle.<sup>4</sup> The concerns were that U.S. companies might have transferred

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<sup>3</sup> For example, there have been trade press reports that U.S. satellite manufacturers declined to submit bids on a Chinese satellite project. Warren Ferster and Barbara Opall, *U.S. Firms Pass on Chinese Satellite Deal*, SPACE NEWS Nov. 23-29, 1998, at 1. U.S. companies also apparently declined to bid on a Taiwanese satellite project. Peter B. deSelding and Warren Ferster, *Dasa Wins Taiwanese Deal*, SPACE NEWS Mar. 29, 1999, at 1.

<sup>4</sup> Traditionally U.S. policy prohibited launches of U.S.-made satellites on Chinese launch vehicles. This policy changed in the late 1980s. In December 1988 and January 1989, the U.S. and China concluded three bilateral agreements that paved the way for launching of U.S.-made satellites on Chinese Long March vehicles. These agreements 1) established security procedures to safeguard U.S. satellite technology; 2) prohibited under-pricing of Chinese launch services and required China to price these services "on a par" with Western competitors; and 3) settled third party liability issues. Memorandum of Agreement Regarding International Trade in Commercial Launch Services, Jan. 26, 1989, U.S.-China, 28 I.L.M. 599; Memorandum of Agreement on Satellite Technology Safeguards, Dec. 17, 1988, U.S.-China, 28 I.L.M. 604; Memorandum of Agreement on Liability for Satellite Launches, Dec. 17, 1988, U.S.-China, 28 I.L.M. 609. Shortly after these agreements

improperly technical data to China during launch preparations, launch campaigns, and launch failure investigations and that such transfers, if they occurred, might have improved Chinese missile capabilities. As a result, a series of Congressional hearings and investigations followed during 1998.<sup>5</sup> While these hearings initially focused on the issue of improper space technology transfers to China, their scope quickly expanded to include 1) technology transfers generally to China;<sup>6</sup> and 2)

were concluded, China brutally repressed pro-democracy activists in the now infamous Tiananmen Square incident, causing the U.S. Congress to pass legislation prohibiting launches of U.S. satellites on the Long March rocket, absent a Presidential waiver and Congressional notification. The *Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act of 1990* required a Presidential waiver and Congressional notification before a satellite can be exported to China for launch. Pub. L. No. 101-162, § 610 (1989). The *Foreign Relations Authorization Act, Fiscal Years 1990 and 1991* continued the requirement for a Presidential waiver and Congressional notification. Pub. L. No. 101-246, § 902 (1990). Waivers were granted to allow for the export of a satellite for launch on the Chinese Long March vehicle. See SHIRLEY A. KAN, CHINA: POSSIBLE MISSILE TECHNOLOGY TRANSFERS FROM U.S. SATELLITE EXPORT POLICY - BACKGROUND AND CHRONOLOGY, CRS REP. 98-485, at CR-12 (Aug. 13, 1998) (listing waivers). In February 1993, the U.S. and China concluded a new bilateral agreement on procedures to safeguard U.S. satellite technology. Memorandum of Agreement on Satellite Technology Safeguards, Feb. 11, 1993, U.S.-China, T.I.A.S. No. 12,486. In March 1995, the two countries renewed their Agreement on Commercial Space Launch Services. Memorandum of Agreement Regarding International Trade in Commercial Launch Services, Mar. 13, 1995, U.S.-China, 1998 BDIEL AD LEXIS 12. The new agreement allows China to launch up to eleven new satellites to geostationary orbit at prices not less than 15 percent below those charged by Western competitors for seven years. *Id.* at §§ II.B(ii), (iv). The agreement was amended in October 1997 to include terms for Chinese pricing of launch services to low Earth orbit. Agreement to Amend the Memorandum of Agreement Regarding International Trade in Commercial Launch Services, Oct. 27, 1997, U.S.-China, 1998 BDIEL AD LEXIS 10. The *Strom Thurmond National Defense Authorization Act of 1998* ("Thurmond Act") added the requirement of a Presidential certification to Congress 15 days prior to any export to China of space equipment or technology. Pub. L. No. 105-261, § 1512.

<sup>5</sup> Several Congressional committees asserted jurisdiction over the issues raised by the technology transfers to China. The following committees held hearings during 1998: Joint Economic Committee, Apr. 28, 1998; Senate Armed Services Committee, Jul. 9, 1998; Senate Committee on Commerce, Science, and Transportation, Sep. 17, 1998; Senate Governmental Affairs Committee, Jun. 25, 1998; Senate Governmental Affairs Subcommittee on International Security, Proliferation and Federal Services, May 21; Jun. 8; Jul. 8; Jul. 29, 1998; Senate Intelligence Committee, Jun. 4; Jun. 5; Jun. 10; Jun. 24; Jul. 8; Jul. 15, 1998; Senate Foreign Relations Committee, Jun. 11; Jun. 25, 1998; Senate Foreign Relations Subcommittee on East Asian/Pacific Affairs, Jun. 18, 1998; Joint House National Security/International Relations Committees, Jun. 17; Jun. 18; Jun. 23, 1998; House Science Committee, Jun. 25, 1998.

<sup>6</sup> On June 18, 1998, the House of Representatives voted 409-10 to create the Select Committee on U.S. National Security and Military/Commercial Concerns



technology transfers associated with the export of U.S.-built satellites generally and the entire licensing and enforcement process for space technology exports under the Clinton Administration.

A central issue addressed during the Congressional hearings was whether the shift in export licensing jurisdiction over commercial communications satellites from the Department of State to the Department to the Commerce ("DOC"), which was largely implemented during the Clinton Administration,<sup>7</sup> had unduly relaxed export controls over U.S. space technology. While the State Department applies a strict "national security" standard when evaluating export license applications, the DOC's concern for national security is tempered by a mandate to promote international trade. Critics claimed that U.S. national security had been compromised as a result of the jurisdictional shift to DOC and that stricter controls were needed for commercial communications satellites. They claimed that reduced export controls applied by DOC had provided China and other foreign countries improper access to U.S. space technology in conjunction with the foreign launches of commercial communications satellites.

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with China, chaired by Rep. Christopher Cox (R-CA) ("Cox Committee"). 144 CONG. REC. H4772 (daily ed. Jun. 18, 1998). The Cox Committee was tasked with determining whether the transfer of technology, information, advice, goods, or services to China enhanced, among other things, China's missile programs and whether China received sensitive U.S. technology. H.R. Res. 463, § 2, 105th Cong. (1998). On December 30, 1998, the Cox Committee approved a 700-page classified report on the findings of its investigation. Statement of Rep. Christopher Cox, *U.S. Representatives Discuss Technology Transfer to China*, FDCH POL. TRANSCRIPTS Dec. 30, 1998, available in LEXIS, News Library, Poltrn File. According to press reports, the Cox Committee found that the transfer of sensitive U.S. technology to China was "not limited to missile-satellite technology, but cover[ed] militarily significant technologies [and] that national security harm did occur." *Id.* An unclassified version of the report is expected to be released.

<sup>7</sup> Jurisdiction over the export of commercial communications satellites traditionally rested with the Department of State. In a series of regulatory changes throughout the 1990s, export licensing jurisdiction over these satellites was transferred to DOC. First, on October 23, 1992, export licensing jurisdiction over commercial communications satellites not containing certain specified sensitive characteristics, components, or parts were transferred to the DOC. 57 Fed. Reg. 48315 (1992). Then, on November 5, 1996, export licensing jurisdiction over commercial communications satellites incorporating these sensitive characteristics, components, or parts was transferred to the DOC, although, the sensitive characteristics, components, or parts, themselves, remained subject to State Department export jurisdiction. 61 Fed. Reg. 56894 (1996) and 61 Fed. Reg. 54540 (1996). Finally, on April 9, 1998, certain components and parts previously subject to State Department export jurisdiction (including satellite fuel, ground support equipment, test equipment, payload adapter/interface hardware, and more) were transferred to DOC jurisdiction so long as they were "to be utilized for the specific launch." 63 Fed. Reg. 17329 (1998).

The Congressional hearings culminated in the satellite export control provisions of the *Strom Thurmond National Defense Authorization Act for F.Y. '99* ("Thurmond Act"),<sup>8</sup> which transferred export licensing jurisdiction over commercial communications satellites back to the State Department,<sup>9</sup> imposed special export controls for satellites launched in certain foreign countries,<sup>10</sup> and introduced a requirement of certification to Congress of certain technology exports to China.<sup>11</sup> (See Section 4).

## 2.2. Implementation of the Thurmond Act and Additional ITAR Amendments

The Thurmond Act has been implemented through amendments to the International Traffic in Arms Regulations ("ITAR").<sup>12</sup> The ITAR amendments provide for the transfer of jurisdiction over commercial communications satellites to the Department of State and impose new requirements for technology transfer control plans and Department of Defense ("DOD") monitoring during certain technical discussions, satellite processing, launch activities, and launch failure investigations. (See Sections 4.1-4.3). Other recent ITAR amendments also impose export controls in addition to what is called for in the Thurmond Act, which have chilled further the export climate. These amendments, among other requirements, impose mandatory licensing for exports to foreign satellite insurance providers<sup>13</sup> and eliminate important exemptions for technical discussions with Canadian companies.<sup>14</sup> (See Sections 4.4-4.5).

## 2.3. Enforcement of the ITAR

In addition to the concrete changes in statutory law and regulations described in Sections 2.1-2.2, above, there has been a heightened sensitivity in the application and enforcement of ITAR with respect to space technology exports. The sensitivity addresses the concerns expressed by Congress with space technology exports to China and other foreign countries. Moreover, recent export licensing delays also suggest reluctance on the part of the Clinton Administration to promote space technology exports at this time, absent overriding foreign policy reasons.

<sup>8</sup> Pub. L. No. 105-261, §§ 1511-1516, 112 Stat. 1920, 2173-2178 (Oct. 17, 1998).

<sup>9</sup> *Id.* § 1513.

<sup>10</sup> *Id.* § 1514.

<sup>11</sup> *Id.* § 1512.

<sup>12</sup> ITAR Amendments: Control of Communications Satellites on the U.S. Munitions List, 64 Fed. Reg. 13679 (Mar. 22, 1999). *See also* Removal of Commercial Communications Satellites and Related Items from the Commerce Control List for Retransfer to the United States Munitions List, 64 Fed. Reg. 12744 (Mar. 15, 1999) (providing for the transfer from DOC).

<sup>13</sup> 64 Fed. Reg. at 13681 (codified at 22 C.F.R. § 124.15(d)).

<sup>14</sup> ITAR Amendments, 64 Fed. Reg. 17531, 17534-35 (Apr. 12, 1999) (codified at 22 C.F.R. § 126.5).

### 3. The Legal Regime for Space Technology Exports

#### 3.1. The Arms Export Control Act and ITAR

Section 38<sup>15</sup> of the Arms Export Control Act<sup>16</sup> ("AECA") provides the statutory authority for the licensing and regulation of exports of commercial space hardware and technology. The act empowers the President "to control the . . . export of defense articles and defense services and to provide foreign policy guidance to persons of the United States involved in the export . . . of such articles and services."<sup>17</sup> The act also provides the President authority to "designate those items which shall be considered as defense articles and defense services . . . and to promulgate regulations for the . . . export of such articles and services."<sup>18</sup> These designated items shall "constitute the United States Munitions List."<sup>19</sup>

By Executive Order, the President has delegated to the Secretary of State the authority over exports provided in the Arms Export Control Act.<sup>20</sup> Accordingly, the Secretary has promulgated ITAR,<sup>21</sup> which is the principal U.S. regulatory instrument for controlling the export of space hardware and technology.<sup>22</sup> The ITAR establishes the U.S. Munitions List, *i.e.*, a list of

<sup>15</sup> 22 U.S.C. § 2778 (LEXIS 1999 through 105th Cong., 2d Sess.).

<sup>16</sup> 22 U.S.C. § 2751 *et seq.* (LEXIS 1999 through 105th Cong., 2d Sess.). One purpose of the Arms Export Control Act was to bring about a centralized and more effective control over exports within the Executive Branch and to provide a stronger voice for Congress. *International Security Assistance and Arms Export Control Act*, S. REP. NO. 94-876 (May 14, 1976), at 8. U.S. export controls are designed to "further[ ] world peace and security and foreign policy of the United States." 22 U.S.C. 2778(a)(1). As for the overall purpose of the Arms Export Control Act, the act provides that "an ultimate goal of the United States continues to be a world which is free from the scourge of war and the dangers and burdens of armaments; in which the use of force has been subordinated to the rule of law; and in which international adjustments to a changing world are achieved peacefully." *Id.* § 2751.

<sup>17</sup> *Id.* § 2778(a)(1).

<sup>18</sup> *Id.*

<sup>19</sup> *Id.*

<sup>20</sup> The statutory authority to regulate exports, designate defense articles, and enforce the ITAR was delegated to the Secretary of State by Exec. Order No. 11,958, 42 Fed. Reg. 4311 (Jan. 18, 1977). *See also* 22 C.F.R. § 120.1(a) (providing that authority under Section 38 of the Arms Export Control Act was delegated to the Secretary of State).

<sup>21</sup> 22 C.F.R. Parts 120-130.

<sup>22</sup> ITAR was first published in its present form albeit in a rudimentary version on August 26, 1955. 20 Fed. Reg. 6250 (1955). ITAR was published under the authority of the Mutual Security Act of 1954, 68 Stat. 848, which replaced the Neutrality Act of 1939, 54 Stat. 11. The provisions of the Mutual Security Act were in large measure superseded by the current Arms Export Control Act of 1976, 22

hardware and technologies deemed to require export controls in order to preserve U.S. national security.<sup>23</sup> The list includes *inter alia* launch vehicles, parts, and related technical data, see Category IV;<sup>24</sup> and satellites, parts, and related technical data, see Category XV.<sup>25</sup> The ITAR imposes a licensing requirement on any person who intends to export an item on the Munitions List.<sup>26</sup>

The ITAR is primarily administered by the State Department's Office of Defense Trade Controls ("ODTC").<sup>27</sup> License applications are filed with and processed by ODTC. The ODTC consults with DOD and related U.S. government defense agencies through the Defense Threat Reduction Agency ("DTRA"). The ITAR leaves broad discretion to its enforcers which infuses considerable uncertainty and variability in the application and enforcement of the regulations. United States courts have criticized ITAR for its wide latitude for discretion. For example, the district court in *Bernstein v. U.S.*<sup>28</sup> characterized ITAR as a "paradigm of standardless discretion."<sup>29</sup>

### 3.2. What Kind of Technical Information Requires a License to Export?

In addition to satellite and launch vehicle hardware, related technical information which amounts to "technical data" requires an export license before it can be exported. Technical data is defined to include "[i]nformation . . . which is required for the design, development, production, manufacture, assembly, operation, repair, testing, maintenance or modification of defense articles."<sup>30</sup> Technical data also includes classified information relating to defense articles and defense services;<sup>31</sup>

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U.S.C. § 2751, *et seq.*

<sup>23</sup> 22 C.F.R. § 121.1. Certain items on the Munitions List are preceded by an asterisk, which means that the item is deemed to be "significant military equipment." *Id.* § 121.1(b). Significant Military Equipment ("SME") is defined as "articles for which special export controls are warranted because of their capacity for substantial military utility or capability." *Id.* § 120.7

<sup>24</sup> *Id.* § 121.1, Category IV—Launch Vehicles, Guided Missiles, Ballistic Missiles, Rockets, Torpedoes, Bombs and Mines.

<sup>25</sup> *Id.* § 121.1, Category XV—Spacecraft Systems and Associated Equipment.

<sup>26</sup> The licensing requirement for the export of a defense article is provided in 22 C.F.R. Part 123. The licensing requirement for the export of certain defense services is provided in 22 C.F.R. Part 124. The licensing requirement for the export of unclassified technical data is provided in 22 C.F.R. Part 125.

<sup>27</sup> 22 C.F.R. § 120.1.

<sup>28</sup> 945 F. Supp. 1279 (1996), *superseded by* 974 F. Supp. 1288 (N.D. Cal. 1997), *affirmed* 1999 U.S. App. LEXIS 8595 (9th Cir. 1999).

<sup>29</sup> 945 F. Supp. at 1289.

<sup>30</sup> 22 C.F.R. § 120.10(a)(1) (emphasis added).

<sup>31</sup> *Id.* § 120.10(a)(2). *See infra* note 45 (defining defense services).

information covered by an invention secrecy order,<sup>32</sup> [and] software<sup>33</sup> directly related to defense articles.<sup>34</sup>

Defense articles are, by definition, all of the items on the U.S. Munitions List.<sup>35</sup> Category XV on the Munitions List, entitled Spacecraft Systems and Associated Equipment, includes the following items:

(a) Spacecraft, including [commercial<sup>36</sup> and military] communications satellites, remote sensing satellites, scientific satellites, research satellites, navigation satellites, experimental and multi-mission satellites;<sup>37</sup>

(b) Ground control stations for telemetry, tracking and control of spacecraft or satellites, or employing any of the cryptographic items controlled under [the Munitions List, Category XIII].<sup>38</sup>

(c) Global Positioning System (GPS) receiving equipment specifically designed, modified or configured for military use; or GPS receiving equipment with certain enumerated characteristics.<sup>39</sup>

<sup>32</sup> *Id.* § 120.10(a)(3).

<sup>33</sup> Software includes but is not limited to "the system functional design, logic flow, algorithms, application programs, operating systems and support software for design, implementation, test, operation, diagnosis and repair." *Id.* § 121.8(f).

<sup>34</sup> *Id.* § 120.10(a)(4).

<sup>35</sup> *Id.* § 120.6.

<sup>36</sup> See *supra* note 7 (explaining how commercial communications satellites were subject to DOC export jurisdiction from 1992 to 1998).

<sup>37</sup> C.F.R. § 121.1, Category XV(a). Spacecraft are designated Significant Military Equipment ("SME"), which subjects them to additional restrictions under ITAR; however, commercial communications satellites, scientific satellites, research and experimental satellites are designated as SME only when the equipment is intended for use by the armed forces of any foreign country. *Id.* § 121.1, Category XV(a). The SME designation imposes requirements, e.g., with respect to submitting proposals to foreign persons, *Id.* § 126.8(a); nontransfer and use assurances, *Id.* § 124.10(a); and certifications to Congress, *Id.* § 124.11.

<sup>38</sup> 22 C.F.R. § 121.1, Category XV(b).

<sup>39</sup> 22 C.F.R. § 121.1, Category XV(c). The characteristics are as follows: 1) Designed for encryption or decryption (e.g., Y-Code) of GPS precise positioning service (PPS) signals; 2) Designed for producing navigation results above 60,000 feet altitude and at 1,000 knots velocity or greater; 3) Specifically designed or modified for use with a null steering antenna or including a null steering antenna designed to reduce or avoid jamming signals; 4) Designed or modified for use with unmanned air vehicle systems capable of delivering at least a 500 kg payload to a range of at least 300 km. *Id.* § 121.1, Category XV(c)(1)-(4). Note that "GPS receivers designed or modified for use with military unmanned air vehicle systems with less capability are considered to be specifically designed, modified or configured for military use and therefore covered under this paragraph [(c)(4)]." *Id.* § 121.1, Category XV(c).

Any GPS equipment not meeting this definition is subject to the jurisdiction of the Department of Commerce (DOC).<sup>40</sup>

(d) Radiation-hardened microelectronic circuits that meet certain enumerated characteristics.<sup>41</sup>

(e) All specifically designed or modified systems, components, parts, accessories, attachments, and associated equipment for the articles in this category.<sup>42</sup> [This also includes] satellite fuel, ground support equipment, test equipment, payload adapter or interface hardware, replacement parts, and non-embedded solid propellant orbit transfer engines . . . .<sup>43</sup>

(f) Technical data<sup>44</sup> [as defined above] and defense services<sup>45</sup> [which includes furnishing assistance, training, or technical to foreign persons] directly related to the articles enumerated in paragraphs (a) through (e).<sup>46</sup> This paragraph includes all technical data,

<sup>40</sup> Manufacturers or exporters of equipment under DOC jurisdiction are advised that the U.S. Government does not assure the availability of the GPS P-Code for civil navigation. *Id.* It is the policy of [DOD] that GPS receivers using P-Code without clarification as to whether or not those receivers were designed or modified to use Y-Code will be presumed to be Y-Code capable and covered under this paragraph. *Id.* The DOD policy further requires that a notice be attached to all P-Code receivers presented for export. *Id.* The notice must state the following: "ADVISORY NOTICE: This receiver uses the GPS P-Code signal, which by U.S. policy, may be switched off without notice." *Id.*

<sup>41</sup> 22 C.F.R. § 121.1, Category XV(d). The characteristics are as follows: 1) A total dose of 5x10<sup>5</sup> Rads (SI); 2) A dose rate upset of 5x10<sup>8</sup> Rads (SI)/Sec; 3) A neutron dose of 1x10<sup>14</sup> N/cm<sup>2</sup>; 4) A single event upset of 1x10<sup>-7</sup> or less error/bit/day; [and] 5) Single event latch-up free and having a dose rate latch-up of 5x10<sup>8</sup> Rads(SI)/sec or greater. *Id.* § 121.1, Category XV(d)(1)-(5).

<sup>42</sup> *Id.* § 121.1, Category XV(e).

<sup>43</sup> *Id.*

<sup>44</sup> See *supra* note 30 and accompanying text (defining "technical data").

<sup>45</sup> Defense service is defined as (1) [t]he furnishing of assistance (including training) to foreign persons . . . in the design, development, engineering, manufacture, production, assembly, testing, repair, maintenance, modification, operation . . . or use of defense articles; [or] (2) [t]he furnishing to foreign persons of any technical data . . . whether in the United States or abroad." 22 C.F.R. § 120.9(a).

<sup>46</sup> The definition was amended in 1999, and much of the text of subparagraph (f) was changed. However, the clause "as well as detailed design, development, manufacturing or production data for all spacecraft and specifically designed or modified components for all spacecraft systems" was retained. That phrase seems superfluous at best, and misleading at worst in light of the fact that all spacecraft are now under State Department export jurisdiction. By virtue of the definition of "technical data" this information would automatically be considered technical data. The phrase was appropriate when commercial communications satellites were under DOC export jurisdiction because even at

without exception, for all launch support activities (e.g., technical data provided to the launch provider on form, fit, function, mass, electrical, mechanical, dynamic, environmental, telemetry, safety, facility, launch pad access, and launch parameters, as well as interfaces for mating and parameters for launch).<sup>47</sup>

Category IV of the Munitions List concerns launch vehicles and includes *inter alia* the following items:

(a) Rockets (including but not limited to meteorological and other sounding rockets) . . . .<sup>48</sup>

(b) Launch vehicles and missile and anti-missile systems including but not limited to guided, tactical and strategic missiles, launchers, and systems.<sup>49</sup>

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(d) Missile and space launch vehicle powerplants.<sup>50</sup>

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that time the ITAR restricted the export of the following technical information related to commercial communications satellites: detailed design, development, production or manufacturing data for commercial communications satellites and for specifically designed or modified components for commercial communications satellites. 22 C.F.R. § 121.1 Cat. XV(g) (1998). This information was considered technical data. Note, however, the inclusion in the definition of technical data of detailed design, development, manufacturing or production information directly related to commercial communications satellites subject to DOC export jurisdiction did not include that "level of technical data . . . necessary and reasonable for a purchaser to have assurance that a U.S.-built item intended to operate in space has been designed, manufactured, and tested in conformance with specified contract requirements . . . as well as data necessary to evaluate in-orbit anomalies and to operate and maintain associated ground station equipment." *Id.*

<sup>47</sup> 64 Fed. Reg. 13679, 13680-13681. Technical data directly related to the manufacture or production of any article enumerated elsewhere in this category that is designated as Significant Military Equipment (SME) shall itself be designated SME. *Id.* at 13681. See *supra* note 37 (describing the significance of SME designation). Further, technical data directly related to the manufacture or production of all spacecraft, notwithstanding the nature of the intended end use (e.g., even where the hardware is not SME), is designated SME. 64 Fed. Reg. at 13681.

<sup>48</sup> *Id.* § 121.1, Category IV(a). These items are designated SME. *Id.* See *supra* note 37 (describing the significance of SME designation). In addition, this subparagraph lists "bombs, grenades, torpedoes, depth charges, land and naval mines, as well as launchers for such defense articles, and demolition blocks and blasting caps . . . ." 22 C.F.R. § 121.1, Category IV(a).

<sup>49</sup> *Id.* § 121.1, Category IV(b). These items are designated SME. *Id.* See *supra* note 37 (describing the significance of SME designation).

<sup>50</sup> 22 C.F.R. § 121.1, Category IV(d). These items are designated SME. *Id.* See *supra* note 37 (describing the significance of SME designation).

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(h) All specifically designed or modified components, parts, accessories, attachments, and associated equipment for the articles in this category.

(i) Technical data<sup>51</sup> [as defined above] and defense services<sup>52</sup> directly related to the defense articles enumerated in paragraphs (a) through (h) of this category.<sup>53</sup>

Technical data does *not* include "information concerning general scientific, mathematical or engineering principles commonly taught in schools, colleges and universities or information in the public domain . . ."<sup>54</sup> It also does not include "basic marketing information on function or purpose or general system descriptions of defense articles."<sup>55</sup>

Public domain means

information which is published and which is generally accessible or available to the public: (1) Through sales at newsstands and bookstores; (2) Through subscriptions which are available without restriction . . .; (3) Through second class mailing privileges granted by the U.S. Government; (4) At libraries open to the public or from which the public can obtain documents; (5) Through patents available at any patent office; (6) Through unlimited distribution at a conference [or] meeting [which is] generally accessible to the public, in the United States; (7) Through public release . . . after approval by the cognizant U.S. government department or agency . . .; [or] (8) Through fundamental research in science and engineering at accredited institutions of higher learning in the U.S. where the resulting information is ordinarily published and shared broadly in the scientific community . . .<sup>56</sup>

<sup>51</sup> See *supra* note 30 and accompanying text (defining "technical data").

<sup>52</sup> See *supra* note 45 (defining "defense service").

<sup>53</sup> 22 C.F.R. § 121.1, Category IV(i). Technical data directly related to the manufacture or production of any defense articles enumerated elsewhere in this category that are designated as SME shall itself be designated SME. *Id.*

<sup>54</sup> *Id.* § 120.10(a)(5). But see *id.* § 124.1(a) (providing the requirement to obtain a technical assistance agreement before a defense service may be furnished even when all the information relied upon by the U.S. person in performing the defense service is in the public domain or is otherwise exempt from the licensing requirements of ITAR).

<sup>55</sup> *Id.*

<sup>56</sup> *Id.* § 120.11(a).



### 3.3. What Constitutes an Export?

The ITAR defines "export" to include 1) "[s]ending or taking a defense article out of the United States in any manner, except by mere travel by a person whose personal knowledge includes technical data . . .," 2) "[t]ransferring registration, control or ownership to a foreign person of any . . . satellite covered by the U.S. Munitions List," or 3) "[d]isclosing (including oral or visual disclosure) or transferring technical data to a foreign person, whether in the United States or abroad . . ."<sup>57</sup> The first category would include, for example, sending technical data to a foreign country, e.g., by mail, express mail, facsimile, or e-mail. The third category typically would include discussion of technical data in meetings with foreign persons in the U.S. or abroad. Note that the terms "disclosure" and "transfer" could be interpreted broadly to include instances where adequate measures have not been taken to prevent access to technical data by a foreign person, e.g., where a foreign person has access to computer files or web sites containing technical data.

A "foreign person" is defined in ITAR as a foreign national,<sup>58</sup> except a foreign national with *permanent* resident status ("green card") in the U.S.<sup>59</sup> In other words, permanent U.S. residents are not considered foreign

<sup>57</sup> *Id.* § 120.17(a)(4). The ITAR defines export as follows:

(1) Sending or taking a defense article out of the United States in any manner, except by mere travel outside of the United States by a person whose personal knowledge includes technical data; or (2) Transferring registration, control or ownership to a foreign person of any aircraft, vessel, or satellite covered by the U.S. Munitions List, whether in the United States or abroad; or (3) Disclosing (including oral or visual disclosure) or transferring in the United States any defense article to an embassy, any agency or subdivision of a foreign government (e.g., diplomatic missions); or (4) *Disclosing (including oral or visual disclosure) or transferring technical data to a foreign person, whether in the United States or abroad;* or (5) Performing a defense service on behalf of, or for the benefit of, a foreign person, whether in the United States or abroad. (6) A launch vehicle or payload shall not, by reason of the launching of such vehicle, be considered an export for purposes of this subchapter. However, for certain limited purposes (see § 126.1 of this subchapter), the controls of this subchapter may apply to any sale, transfer or proposal to sell or transfer defense articles or defense services.

*Id.* § 120.17(a) (emphasis added).

<sup>58</sup> The term "national" is defined as "a person owing permanent allegiance to a state. 8 U.S.C. § 1101(a)(22) (LEXIS 1998). The term "national of the United States" means (A) a citizen of the United States, or (B) a person who, though not a citizen of the United States, owes permanent allegiance to the United States. *Id.* § 1101(a)(22).

<sup>59</sup> The Arms Export Control Act defines "foreign person" as "any person who is not a citizen or national of the United States or lawfully admitted to the United

persons for purposes of ITAR and may have access to technical data without a license. On the other hand, foreign nationals who reside in the U.S. on a *temporary* basis are considered foreign persons, and they may not have access to technical data without an export license. These persons include, for example, foreign students who are in the United States on an F-1 visa, exchange visitors who are in the U.S. on a J-1 visa, and foreign professionals working in the U.S. on an H-1 visa. The term "foreign person" also covers foreign corporations and other entities that are not incorporated or organized to do business in the United States, as well as international organizations, foreign governments and any agency or subdivision of foreign governments.<sup>60</sup>

### 3.4. DSP-5s and TAAs

A person who intends to export technical data needs to obtain 1) a DSP-5 license for the export of unclassified technical data;<sup>61</sup> or 2) a TAA for the export of defense services.<sup>62</sup> The ITAR defines "defense service" as "(1) [t]he furnishing of assistance (including training) to foreign persons . . . in the design, development, engineering, manufacture, production, assembly, testing, repair, maintenance, modification, operation . . . processing or use of defense articles; [or] (2) [t]he furnishing to foreign persons of . . . technical data . . . whether in the United States or abroad."<sup>63</sup> The DSP-5 and TAA are regulated under ITAR Parts 125 and 124, respectively, and are subject to different license application requirements, including certifications. The two licenses serve different purposes. The DSP-5 applies to the export of technical data only, and may be suitable, e.g., if a company wishes to send a foreign company an RFP. The TAA contemplates a broader data exchange involving, e.g., an explanation of the data or other cooperation, technology transfer, assistance or training in addition to the transfer of technical data.

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States for permanent residence under the Immigration and Nationality Act, and includes foreign corporations, international organizations, and foreign governments." 22 U.S.C. § 2778(g)(9)(c) (LEXIS through 105th Cong., 2d Sess.). The ITAR definition of "foreign person" is as follows:

any natural person who is not a lawful permanent resident as defined by 8 U.S.C. § 1101(a)(20) or who is not a protected individual as defined by 8 U.S.C. § 1324b(a)(3). It also means any foreign corporation, business association, partnership, trust, society or any other entity or group that is not incorporated or organized to do business in the United States, as well as international organizations, foreign governments and any agency or subdivision of foreign governments (e.g. diplomatic missions).

22 C.F.R. § 120.16.

<sup>60</sup> *Id.*

<sup>61</sup> *Id.* § 125.2(a).

<sup>62</sup> *Id.* § 124.1.

<sup>63</sup> *Id.* § 120.9(a)(1)-(2).

#### 4. Recent Changes to the Legal Regime for Space Technology Exports

##### 4.1. Transfer of Jurisdiction from Department of Commerce to State Department

Perhaps the most drastic change in the legal regime for exports of space technology is the transfer of export licensing jurisdiction over commercial communications satellites from DOC to the State Department.<sup>64</sup> As noted in Section 2.1, above, the jurisdictional transfer provision was a key feature of the Thurmond Act. Specifically, the act provides that "all satellites and related items . . . on the Commerce Control List of dual-use items [administered by DOC]<sup>65</sup> shall be transferred to the United States Munitions List and controlled under [ITAR]."<sup>66</sup> The jurisdictional shift, which took effect on March 15, 1999,<sup>67</sup> was orchestrated to mitigate Congressional concern expressed in the Thurmond Act that U.S. business interests "not be placed above [U.S.] national security interests."<sup>68</sup>

The State Department implemented the transfer of export licensing jurisdiction in March 1999 through amendments to ITAR, and the Munitions List in particular.<sup>69</sup> Category XV of the Munitions List now includes all "[s]pacecraft, including [commercial and military] communications satellites, remote sensing satellites, scientific satellites, research satellites, navigation satellites, experimental and multi-mission satellites."<sup>70</sup> In addition, the definition of "technical data" was revised to accommodate this jurisdictional transfer. It was also broadened apparently to include certain technical information relating to launch support for foreign launches of commercial communications satellites that was not earlier considered technical data.<sup>71</sup> Moreover, a TAA is required before

<sup>64</sup> Pub. L. No 105-261, § 1513, 112 Stat. 1920, 1974 (Oct. 17, 1998). See *supra* notes 7-9 and accompanying text (discussing transfer of jurisdiction).

<sup>65</sup> 15 C.F.R. Part 774 (1998).

<sup>66</sup> Thurmond Act, § 1513(a). See *supra* note 7 (explaining transfer to DOC).

<sup>67</sup> *Id.* § 1513(c).

<sup>68</sup> *Id.* § 1511(1).

<sup>69</sup> ITAR Amendments: Control of Communications Satellites on the U.S. Munitions List, 64 Fed. Reg. 13679 (Mar. 22, 1999).

<sup>70</sup> *Id.* at 13680 (codified at 22 C.F.R. § 121.1, Category XV(a)).

<sup>71</sup> Included in the definition of "technical data" is all technical data

without exception, for all launch support activities (e.g., technical data provided to the launch provider on form, fit, function, mass, electrical, mechanical, dynamic, environmental, telemetry, safety, facility, launch pad access, and launch parameters, as well as interfaces for mating and parameters for launch.)

*Id.* at 13680-81 (codified at 22 C.F.R. § 121.1, Category XV(f)).

defense services, presumably relating to launch support services, "may be furnished even when all the information relied upon by the U.S. person in performing the defense service is in the public domain or is otherwise exempt from the licensing requirements of [ITAR]."<sup>72</sup> Accordingly, these provisions elevate to the level of technical data certain form, fit and function and public domain information pertaining to launch support services not previously considered technical data.

#### 4.2. Special Export Controls

##### 4.2.1. The Nature of the Controls

The Thurmond Act imposes new special export controls to be applied in addition to the existing ITAR requirements for the export of a "satellite or related item."<sup>73</sup> These special export controls are in the form of technology transfer control plans ("TTCPs") and monitoring. The TTCPs provide in detail for the transfer of technology pursuant to a TAA or other export license and must be approved by DOD.<sup>74</sup> Monitoring is required for certain technical discussions, satellite processing and launch activities, and during launch failure investigations.<sup>75</sup>

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<sup>72</sup> *Id.*

<sup>73</sup> Thurmond Act, § 1514. Related items are defined as "satellite fuel, ground support equipment, test equipment, payload adapter or interface hardware, replacement parts, and non-embedded solid propellant orbit transfer engines . . ." *Id.* § 1516.

<sup>74</sup> *Id.* § 1514(a)(1). The Thurmond Act provides that licenses for the export of these items "require a technology transfer control plan ["TTCP"] approved by the Secretary of Defense and an encryption technology transfer control plan approved by the Director of the National Security Agency. *Id.* The ITAR amendments implement this mandate, providing that "[a]ll licenses and other requests for approval require a technology transfer control plan (TTCP) approved by [DOD] and an encryption technology control plan approved by the National Security Agency." 64 Fed. Reg. 13679, 13681 (codified at 22 C.F.R. § 124.15(a)(1)). The ITAR amendments further require that applications for licenses reflect "advance discussion with [DOD]" concerning such plans. *Id.* In implementing the TTCP, there is a requirement for notification to DOD prior to any interaction with foreign persons. Thurmond Act, § 1514(a)(4); 64 Fed. Reg. 13679, 13681 (codified at 22 C.F.R. § 124.15(a)(1)).

<sup>75</sup> Thurmond Act, § 1514(a)(2)(A). The Thurmond Act provides for monitoring of launch activities when a license has been approved for the export of a satellite or related items for launch in certain foreign countries. The Secretary of Defense "shall monitor all aspects of the launch in order to ensure that no unauthorized transfer of technology occurs, including technical assistance and technical data." *Id.* The Thurmond Act and the ITAR require that the monitoring cover, but not be limited to—

- (i) technical discussions and activities, including the design,

#### 4.2.2. The Scope of the Special Export Controls

The ITAR imposes these controls with respect to the export "of any satellite or related item (see § 121.1. Category XV(a) and (e)) or any defense service controlled by [ITAR] associated with the launch in, or by nationals of, a country that is not a member of the North Atlantic Treaty Organization or a major non-NATO ally of the United States . . . ."<sup>76</sup> Moreover, ITAR provides that the special export controls "also may be imposed with respect to *any destination* as deemed appropriate in furtherance of the national security and foreign policy of the U.S."<sup>77</sup> This provision appears to go further than the Thurmond Act which provides that the special export controls "shall not apply to the export of a satellite or related items for launch in, or by nationals of, a country that is a member of the North Atlantic Treaty Organization or that is a major non-NATO ally of the United States."<sup>78</sup>

While the scope of the special export controls may seem limited to 1) the export of satellites and 2) defense services provided in connection with foreign launches primarily in non-NATO countries, the imposition of special export controls potentially reaches much farther. The ITAR provides that "the export of any article or defense service controlled under

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development, operation, maintenance, modification, and repair of satellites, satellite components, missiles, other equipment, launch facilities, and launch vehicles;

(ii) satellite processing and launch activities, including launch preparation, satellite transportation, integration of the satellite with the launch vehicle, testing and checkout prior to launch, satellite launch, and return of equipment to the United States;

(iii) activities relating to launch failure, delay, or cancellation, including post-launch failure investigations; and

(iv) all other aspects of the launch.

*Id.* § 1514(a)(2)(B)(i)-(iv); 64 Fed. Reg. 13679, 13681 (codified at 22 C.F.R. § 124.15(a)(2)(i)-(iv)). In addition, the costs of "such monitoring services shall be fully reimbursed to [DOD] by the person or entity receiving such services." Thurmond Act, § 1514(a)(2)(A). The ITAR amendments require that the U.S. licensee "make arrangements with [DOD] for monitoring," and, further, that the licensee reimburse the government for the cost of monitoring. 64 Fed. Reg. 13679, 13681 (codified at 22 C.F.R. § 124.15(a)(2)).

<sup>76</sup> 64 Fed. Reg. 13679, 13681 (codified at 22 C.F.R. § 124.15(a)).

<sup>77</sup> 64 Fed. Reg. at 13680-81 (emphasis added) (codified at 22 C.F.R. § 121.1 Category XV(f)); see also *id.* at 13681 (codified at 22 C.F.R. § 124.15(c) (providing that special export controls may be applied to the export of satellites and components for launch by members of NATO or major non-NATO allies as appropriate in furtherance of the security and foreign policy of the U.S.)).

<sup>78</sup> Thurmond Act, § 1514(b).

[ITAR] to any destination may also require that the special export controls . . . be applied.”<sup>79</sup>

#### 4.3. Launch Failure Investigations

The Thurmond Act provides that, in the event of a launch failure resulting from a launch of a U.S.-built satellite from a foreign country, activities in connection with a subsequent launch failure investigation are subject to ITAR regulations and licensing requirements.<sup>80</sup> The Thurmond Act also requires DOD monitoring of “all activities associated with the investigation [and that DOD] establish and implement a [TTCP] for the conduct of the investigation . . . .”<sup>81</sup> The ITAR implements these requirements,<sup>82</sup> while noting that such a “requirement has long existed.”<sup>83</sup> The point made is that while there were requirements for State Department licenses in connection with the Long March launch failure investigations conducted while commercial communications satellites were subject to DOC export jurisdiction, the requirements allegedly were not followed. Such alleged failure to obtain a license under ITAR was an issue in several of the Congressional hearings that led up to the Thurmond Act.<sup>84</sup>

#### 4.4. Mandatory Licenses for Insurers

Although the Thurmond Act did not address licensing requirements for the insurance community, the ITAR amendments call for mandatory licensing of exports of technical data to foreign satellite insurance providers and underwriters.<sup>85</sup> The regulations provide that “[n]one of the exemptions or sub-licensing provisions available in [ITAR] may be used for the export of technical data in order to obtain or satisfy insurance

<sup>79</sup> 64 Fed. Reg. 13679, 13681 (codified at 22 C.F.R. § 124.15(c)).

<sup>80</sup> Thurmond Act, § 1514(a)(3)(A).

<sup>81</sup> *Id.*, § 1514(a)(3)(B)-(C).

<sup>82</sup> The ITAR provides that the “activities of U.S. persons or entities in connection with any subsequent investigation or analysis of the failure continue to be subject to the controls established under [22 U.S.C. § 2778], including the requirements . . . for express approval prior to participation in such investigations or analyses, regardless of whether a license was issued . . . for the initial export of the satellite or satellite component.” 64 Fed. Reg. at 13681 (codified at 22 C.F.R. § 124.15(b)(1)). In addition, the ITAR provides for DOD monitoring of “all activities associated with the investigation or analyses [and that] U.S. persons must follow the procedures” regarding a TTCP and DOD monitoring. *Id.* (codified at 22 C.F.R. § 124.15(b)(2)).

<sup>83</sup> 64 Fed. Reg. 13679, 13680.

<sup>84</sup> See *supra* note 5 (listing Congressional hearings).

<sup>85</sup> 64 Fed. Reg. 13679, 13681 (codified at 22 C.F.R. § 124.15(d)). In addition, the regulations state that “[s]uch exports are always subject to the prior approval and re-transfer requirements of [AECA and ITAR].” *Id.*

requirements."<sup>86</sup> Interestingly, this licensing requirement is not new. It has always been a requirement that exports of technical data to foreign satellite insurers be licensed, just like the export to any other foreign person. Apparently, revelations that technical data pertaining to commercial satellites was sometimes being provided to foreign insurers for insurance purposes under simple non-disclosure agreements contributed to the explicit requirement for licensing.

#### 4.5. The Canadian Exemption

Recently, the so-called Canadian exemption was revised. Previously, U.S. companies could engage in the export without a license of unclassified equipment and unclassified technical data to Canada for end use in Canada by Canadian citizens. However, on April 12, the State Department revoked that exemption with respect to, among other items, 1) launch vehicles and rockets, 2) "Spacecraft, Remote Sensing Satellites, and Military Communications Satellites . . ." and 3) technical data related to those items.<sup>87</sup> Note that commercial satellites are not explicitly included in the list of items for which the exemption is revoked. On the other hand, they are "spacecraft," which are explicitly covered. Is the intention that they continue to be subject to the Canadian exemption? What about launch vehicle and satellite parts? Are they still covered under the Canadian exemption? Parts are not included among the items for which the Canadian exemption was revoked.<sup>88</sup> However, if the parts are on the Missile Technology Control Annex,<sup>89</sup> they are subject to the exemption.<sup>90</sup> Note also that the Canadian exemption does not apply to "[a]ny defense service covered by part 124 . . . ."<sup>91</sup> The revocation of the Canadian exemption occurred after bilateral negotiations between the U.S. and Canada over the past year. The negotiations were prompted by a concern on the part of U.S. authorities about possible unauthorized end-use of items exported to Canada pursuant to the exemption.

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<sup>86</sup> *Id.*

<sup>87</sup> ITAR Amendments, 64 Fed. Reg. 17531, 17534 (Apr. 12, 1999) (codified at 22 C.F.R. § 126.5(b)). The ITAR provides that the "exemption . . . does not apply to the following [defense articles, defense services and related technical data]: Category IV (a), (b), (c), (d), (f), and (g)—Launch Vehicles, Guided Missiles, Ballistic Missiles and Rockets [and] Spacecraft, Remote Sensing Satellites, and Military Communications Satellites listed in Category XV(a), (b), and (c) . . . ." *Id.*

<sup>88</sup> See *id.* (codified at 22 C.F.R. §§ 126.5(b)(3) and (9)) (omitting Category IV(h) and Category XV(e) which include parts and components).

<sup>89</sup> Missile Technology Control Regime, 32 I.L.M. 1298 (Sep. 1993). The MTCR is an arrangement between 29 countries to adhere to a common set guidelines for restricting the export of missile equipment and technology.

<sup>90</sup> 64 Fed. Reg. 17531, 17534 (codified at 22 C.F.R. § 126.5(b)(13)).

<sup>91</sup> *Id.* (codified at 22 C.F.R. § 126.5(d)).

Conclusion

There is no doubt that the U.S. export climate for space technology has cooled significantly and all segments of the space industry are feeling the impact. It is likely that the current U.S. export climate will persist for some time – at least until the 2000 U.S. Presidential elections. The Thurmond Act, the ITAR amendments, and heightened political sensitivity to space technology exports will continue to influence the application and enforcement of U.S. export controls. Now, more than ever, carefully designed and implemented mitigation measures are critical to overcome real and perceived obstacles, as is a clear understanding of the underlying political dynamic driving the export licensing environment.



# EVENTS OF INTEREST

## A. PAST EVENTS

### *U.N. REPORTS*

#### **Programs to be Held in Conjunction with UNISPACE III\***

A proposed program to be held in conjunction with the UNISPACE III Conference in Vienna, Austria, the theme of which is "Space Law in the 21st Century" has been structured for four days of working sessions (July 20-23) and two days of digesting and integrating (July 24-25). A written summary report is expected to be submitted to the Conference early during its second week (July 26-30).

The Workshop will be under overall management of the Workshop Executive Committee, comprising the chair persons for all eight sessions, assisted by Dr. Stephen E. Doyle, as workshop coordinator. The Executive Committee shall be under the chairmanship of the President of the IISL. The Executive Committee shall prepare the Workshop Final Report.

Commencing Tuesday morning of the first week (July 20), the Workshop would have eight 3-hour sessions. For each session there will be an invited discussion paper prepared in advance and submitted to participants by June 15, 1999. Author invitations shall be extended by the President of the IISL. There shall be a coordinator/rapporteur for each session responsible for contacting three primary discussants of the discussion paper for each session. After discussants have commented, the sessions shall be open for participation, questions and comments by the attendees at the workshop.

Each session shall be under the control of the Session Chair, assisted by the coordinator/rapporteur, a discussion paper presenter, and the appointed discussants. The discussion paper will be presented initially (30 minutes), then the discussants will have 20 minutes each to comment on the paper, with the coordinator/rapporteur presenting summary visual notes on all significant issues raised on an overhead transparency, or a large pad. Following general discussion (1 hour), the final 30 minutes of each session should be devoted to consolidating the findings, conclusions and recommendations of the session. The session Chairman and coordinator/rapporteur shall have the role of reducing each session report to final form and delivering it to the Workshop Executive Committee, Saturday morning, for final integration into the Workshop Final Report.

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\* Information received through the courtesies of IISL and ESA.

The Workshop Executive Committee will convene on Saturday morning to receive and discuss the reports of the sessions. A small working group will work Saturday/Sunday to integrate the workshop session reports into a Workshop Final Report to the Conference.

PROPOSED SESSION TOPICS:

Session 1: Tuesday, July 20, 1999, 09:00-12:00

Existing UN Space Treaties: Strengths and Needs

This session will consider a discussion paper on the 5 major UN space treaties, examining the inherent strengths and the needs for further development. This session should be conducted with a view toward producing findings and recommendations to the Conference concerning the status of the treaties and their possible additional development.

*Discussion Paper Author: Prof. Dr. Vladimir Kopal (Czech Republic)*

Session 2: Tuesday, July 20, 1999, 14:00-17:00

Expanding Global Launch Services

This session will examine the expanding base of launch system providers worldwide and consider the legal and policy implications of the phenomenal growth in this market sector. Matters to be considered could include economic competition, standardized contracting, related insurance issues, proliferation of launch sites, and the implications for international establishment of flight registration/coordination procedures. The issue of dual use of launch vehicles and possible related confidence building measures could be considered in terms of their implications for international peace and security.

*Discussion Paper Author: Mr. Peter van Fenema (The Netherlands)*

Session 3: Wednesday, July 21, 1999, 09:00-12:00

Expanding Global Communications Services

This section will examine the explosive growth in world-wide communication services in the past quarter century, considering the implications for use of the radio frequency spectrum, the implications for international co-operation and organization, relationship to economic growth and expansion, the impact of global personal communication services and other relevant current issues.

*Discussion Paper Author: Mr. Francis Lyall (UK)*

Session 4: Wednesday, July 21, 1999, 14:00-17:00

Expanding Global Remote Sensing Services

This session will review the expanding growth in commercial remote sensing services, the increasing quality of remote imagery, the commercial implications, impacts on international co-operation and scientific, as well as industrial applications of current and planned future services,

including issues of international standardization, system ownership and participation, and management.

*Discussion Paper Author: Prof. J. L. Gabrynowicz (USA)*

Session 5: Thursday, July 22, 1999, 09:00-12:00

Expanding Global Navigation Services

This session will examine the present and planned systems for provision of navigation services by satellite and consider matters involving universal access, continuity of services, implications for international ownership, international co-operation and issues of system standardization, among others.

*Discussion Paper Author: Prof. Paul B. Larsen (USA)*

Session 6: Thursday, July 22, 1999, 14:00-17:00

The Roles of International Organisations in Privatization and Commercial Use of Outer Space

International organisations and institutions which have existed and have operated space services for decades are in the process of studying and implementing plans for privatization of all or part of their historical services. Major examples are INMARSAT, INTELSAT and EUTELSAT. This session should consider information on the methods and models used in this context and their impact on the roles of international organisations as well as for space law in general. On that basis, feasible options for future development of existing or new operational international organisations should be examined

*Discussion Paper Author: Mr. Christian Roisse (EUTELSAT)*

Session 7: Friday, July 23, 1999, 09:00-12:00

Possible International Regulatory Frameworks, Including Legal Conflict Resolution in Expanding Space Commercialization

Expanding commercialization of outer space leads to new users (private enterprises, privatized state entities, privatized international organisations) and a quantity and quality of users of outer space not foreseen by the traditional instruments of space law. This session should examine whether and to what extent this new market and commercial community should be supported and regulated by a new legal framework including an efficient machinery to settle disputes which are bound to arise more often in this competitive environment.

*Discussion Paper Author: Prof. Dr. Peter Malanczuk (The Netherlands)*

Session 8: Friday, July 23, 1999, 14:00-17:00

Maintaining the Space Environment

*Discussion Paper Author: Dr. Lubos Perek (Czech Republic)*

Executive Committee Session, 24 July, 1999, 09:00-12:00

Workshop summary and recommendations, under supervision of the IISL President.

Apart from the IISL, ESA is also organizing three dedicated workshops in connection with UNISPACE III in Vienna. One of these, on July 27, 1999, is to explore issues relating to Intellectual Property (IP) and Space Activities on the basis of the experience of main national and international Space Agencies. Among the issues to be discussed are questions whether we need international IP standards for space cooperation; whether there is a need for harmonization of national legislation on IP and space, and in which Forum; and issues of the transfer of technology to non-space faring nations, in light of the views of developing countries especially with respect to Ground Infrastructure Problems.

### COMMENTS

#### **Satellite Reciprocity Agreement between the United States and Argentina**

The United States and the Argentine Republic signed on June 5, 1998 a satellite reciprocity agreement for the transmission and reception of signals from satellites and for the provision of satellite services to the two countries. This agreement is the first and so far the only satellite reciprocity agreement signed by Argentina and the second one signed by the United States<sup>1</sup>. It entered into force on its signature and is entitled "Agreement Between the Government of the Argentine Republic and the Government of the United States of America Concerning the Provision of Satellite Facilities and the Transmission and Reception of Signals To and From Satellites for the Provision of Satellite Services to Users in the Argentine Republic and the United States of America" (the "Agreement").

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<sup>1</sup> The United States recently completed a bilateral agreement with Mexico for DTH FSS and DBS service entitled "Agreement between the Government of the United States of America and the Government of the United Mexican States Concerning the Transmission and Reception of Signals from Satellites for the Provision of Satellite Services to Users in the United States of America and the United Mexican States", April 26, 1996 and "Protocol Concerning the Transmission and Reception of Signals from Satellites for the Provision of Direct-to-Home Satellite Services in the United States of America and the United Mexican States", November 8, 1996.

Additionally, on the same day these two countries executed a protocol to the Agreement in order to address certain kinds of satellite services.

This article aims at analyzing the agreement and protocol both from the US and Argentine perspectives.

### I. The Agreement

The agreement has been negotiated with the view towards alleviating the tight rules for new entrants to the Argentine satellite market. In effect, according to Resolution No. 14/97, as amended, Argentina has adopted competition and exclusive regimes, which reflects the protectionist policy of the Secretariat of Communications. This policy has restricted the possibilities of foreign satellite service providers to offer services in Argentina. The agreement is expected to benefit both U.S. and Argentine operators by providing them with market access to Argentina and the United States respectively on a national treatment basis.

The purpose of the Agreement is to facilitate the provision of services via commercial satellites licensed by Argentina and the United States and to establish the conditions relating to use of these satellites in these two countries. Thus, according to article IV, Argentine-licensed satellites will be permitted to provide service to, from and within the United States in conformity with applicable U.S. laws and licensing procedures. Similarly, US-licensed satellites are allowed to provide service to, from and within Argentina pursuant to applicable Argentine laws. Additionally, both states agreed that a satellite licensed in one state need not be relicensed for the operation of the satellite in order to provide satellite services in the other state. However, the authorization of satellite facility providers as required under Argentine regulations is not to be considered an additional license. The term satellite facility provider is a concept used in Argentine law that means an individual or legal entity licensed to provide satellite facilities, *i.e.*, commercial communications services.

Each state also undertakes to apply its laws and licensing procedures in a transparent and non-discriminatory manner to the satellites licensed by the other party and among all entities that apply for a license to transmit and/or receive signals via satellites. Additionally, Argentine or US-licensed entities that operate commercial satellites and earth stations may be established with either public or private participation in conformity with the legal and regulatory provisions of each country.

The agreement also contains provisions regarding foreign ownership. Indeed, it prescribes that any foreign ownership restrictions on earth stations and satellite service providers operating within the territory of a party are the ones defined in the municipal legislation of that party. For Argentina, foreign ownership rules are at present regulated by Act 21,382 and decree No. 1853/93. Pursuant to these norms, foreign investors enjoy the same treatment as local investors. Thus, for example, foreign individuals and legal entities are entitled to make investments in any

economic activity in Argentina without any previous authorization. Furthermore, investments may be repatriated and profits may be remitted abroad at any time without any kind of restrictions. Additionally, technology transfer agreements executed between related companies, such as, for example, agreements between the satellite operator and a marketing affiliate or even its home office, do not require authorization from Argentine administrative authorities. Therefore, as long as the technology rendered is paid under arm's length conditions, these agreements may be executed without any type of prior approval. In the past, technology transfer agreements needed prior authorization by the National Institute of Industrial Technology. Also, these agreements had to be registered before said Institute. Non-compliance with these requisites meant a higher withholding rate and the non-deductibility of payments made by transferee to transferor. Now, foreign control restrictions are abolished, thus allowing the free flow of international capitals.

In the United States there are several restrictions to the ownership and control by foreigners of telecommunications services classified as common carriers. The Telecommunications Act of 1996 continues to limit ownership by foreigners of both stock and voting rights to 20 and 25 percent respectively as did the Federal Communications Act of 1934, but now permits foreigners to lawfully exercise control in their capacities of directors and officers. However, it bears adding that ownership restrictions do not refrain licensing aliens from operating satellites on a private, non common carrier basis<sup>2</sup>

The agreement further stipulates that each party will cooperate in seeking to ensure respect for the laws and regulations of the other party relating to the services that are encompassed by the Agreement and the protocol. Moreover, both states undertook to effect the coordination of satellites of the other country after that country initiates the required coordination procedures before the International Telecommunication Union. In this respect, the parties agreed that technical coordination procedures will be carried out for the purposes of making the most efficient use of satellite orbits and the associated frequencies for satellite use. Cooperation will include the technical coordination of new satellites to accommodate the growing national and international communications needs of the satellite industry of each country. This provision will be certainly invoked by Argentina in the near future for the second satellite of the domestic system, which is expected to provide Direct to Home ("DTH") services in the United States.

The Agreement will remain in force indefinitely until it is replaced by a new one or until it is terminated either by mutual consent or by any party. In the latter case, the terminating party is to give a written notice of termination, which will enter into force six months after receipt of the notice by the other party.

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<sup>2</sup> SIDAK, J. GREGORY, *FOREIGN INVESTMENT IN AMERICAN TELECOMMUNICATIONS* 135 (The University of Chicago Press, Chicago, 1997).

## II. The Protocol

The main purpose of the protocol, entitled Protocol Concerning the Transmission and Reception of Signals from Satellites for the Provision of Direct-To-Home Satellite Services and Fixed-Satellite Services in the Argentine Republic and the United States of America, is to establish the conditions and technical criteria for the use of Argentine- or U.S.-licensed satellites and earth stations for the delivery of DTH, broadcasting satellite services ("BSS") and other fixed satellite services ("FSS") to, from and within the territories of Argentina and the United States. It also aims at facilitating the provision of these services via commercial satellites licensed by the parties. The implementing entities of the protocol are the Argentine Secretariat of Communications (SC), the Argentine Federal Broadcasting Committee (COMFER), and the US Federal Communications Commission (FCC).

According to article V, licenses for DTH, BSS and FSS signals will have to be issued as efficiently and expeditiously as possible by the respective local administrations. If possible, the administrations will have to implement blanket licenses for earth stations. Like in the Agreement, the Protocol prescribes that each party has to apply its laws, and licensing procedures in a transparent and non-discriminatory manner to the satellites licensed by the other party. In the United States the principal regulations for the grant of licenses to transmit or receive DTH, BSS or FSS are the Communications Act of 1934 as amended, 47 US Code of Federal Regulations, Parts 2, 25, 76 and 100 and the Manual of Regulations and Procedures for Federal Radio Frequency Management. In Argentina the main regulations arise from the Telecommunications Act No. 19,798, the Broadcasting Act No. 22,285, resolutions 1913/97 of the former National Telecommunications Commission, SC Resolutions 477/93, 14/97, 242/97, and 1118/98, as well as decrees No. 62/90 and 264/98.

Basically, under the existing Argentine legal framework, the Argentine satellite market is divided into a mixed system of exclusivity (monopoly) and competition according to different radio frequency bands. Argentine satellite operators enjoy exclusivity in the Ku band. Furthermore, there is a legal monopoly for seven years for the current operator of the only Argentine satellite domestic system during which period no authorizations may be granted even for other Argentine satellite operators. However, there are a few specific circumstances under which foreign operators may obtain permission to operate in the Ku Band. These are: (i) when there is no available Argentine satellite capacity, (ii) when Argentine satellite capacity is offered at abusive prices, or (iii) when there are technical restrictions which impede the satisfaction of the users' demand by Argentine satellites. At the end of the seven-year period, save for these

exceptions, only Argentine satellites may be authorized to provide services in the Ku Band<sup>3</sup>.

In the C Band, under the so called competition regime, authorizations for foreign operators may only be issued when the provision of satellite services by said operators is offered solely in this band. In all other bands, authorizations for foreign operators may be issued only on a temporary and conditional basis when services may not be rendered by Argentine satellite systems. DTH services may also be provided only through Argentine satellites.

The existence of reciprocity agreements may be considered as an exception to the exclusivity regime. In this regard, even for the bands reserved for Argentine satellite systems, a foreign operator whose administration executed a reciprocity agreement with Argentina may provide services in Argentina as if it were a national operator. In effect, according to section 24 of SC Resolution No. 14/97, as amended, a reciprocity agreement may be invoked as an exception to the exclusivity regime and consequently as grounds for obtainment of the pertaining license, if in the case of states which are members of the WTO, the agreement affords Argentine operators the same treatment in the other country as the other state's operators, and provided the reciprocity agreement encompasses DTH services. These requisites are present in the Argentine US reciprocity agreement, and so now US satellite operators are not subject to the limitations imposed by the Argentine exclusivity regime. It is still debatable, however, whether the seven-year exclusivity provision for rendering services in the Ku Band applies to US-licensed satellites, for SC Resolution 14/97, as amended, precluded the grant of new authorizations until the expiration of that period. In our opinion, during the seven-year period US-licensed satellites may only provide services in the Ku Band if they qualify within one of the exceptions stated above. After the seven-year period they may also be authorized as if they were Argentine satellites by virtue of the reciprocity agreement.

The provision of satellite facilities in Argentina, whether rendered by national or foreign operators, is subject to prior authorization given by the Communications Secretary. Additionally, Argentine satellite facility providers are required to obtain a license to operate the space segment, and both national and foreign operators must seek authorization for transmitting earth stations. No license is required for receiving earth stations, although they must be registered before the Secretariat.

In the United States the operation of a satellite is subject to an operating license, which allows the holder to use a specific orbital location and associated frequencies for a limited period of time<sup>4</sup>. The FCC is

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<sup>3</sup> HERMIDA, JULIAN, *COMMERCIAL SPACE LAW, INTERNATIONAL, NATIONAL AND CONTRACTUAL ASPECTS* 182. (Depalma, Buenos Aires 1997).

<sup>4</sup> Meredith, Pamela L., *"Implementing a Telecommunications Satellite Business Concept: Overview and Relative Timing of Legal Actions"*, 33 *PROC. COLLOQ. L. OUTER SPACE* 43 (1991).



charged with distributing and regulating frequency bands and orbital locations for communications satellites. The frequency bands for fixed satellite services are listed in the Code of Federal Regulations and include separate bands for uplink and downlink. The regulations also spell out specific information that must be provided with each application so that the FCC might efficiently and effectively grant or deny the requests for licenses<sup>5</sup>. Any decision made by the FCC regarding a petition for a license involves the FCC's analysis of whether the proposed service complies with the public interest requirement. Indeed, the Commission has to evaluate whether the public interest, convenience, and necessity will be served by the award of the license. If the FCC arrives at a positive conclusion the license is to be granted<sup>6</sup>.

In order to apply for a license regarding the provision of satellite services, an applicant must be legally, technically and financially qualified and it must file sufficient information with the FCC to prove that it complies with the requirements to obtain a license. On November 25, 1996, the FCC approved the Report and Order regarding the Commission's Regulatory Policies to Allow Non-U.S. Licensed Space Stations to Provide Domestic and International Satellite Service in the United States ("Report and Order")<sup>7</sup>. Its purpose is to establish a new framework to facilitate competitive entry in the U.S. satellite services market by foreign-licensed satellites. The Report and Order implements the obligations assumed by the United States under the WTO Basic Telecommunications Agreement.

Under this framework the FCC considers requests for access by non-U.S. licensed satellites into the United States. As mentioned above, in making the determination whether to grant or deny authorization, the FCC considers public interest factors, such as the effect on competition in the United States, spectrum availability, eligibility and operating

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<sup>5</sup> Goldman, Nathan, *AMERICAN SPACE LAW - INTERNATIONAL AND DOMESTIC* 177 (2d ed., Iowa State University Press, 1996).

<sup>6</sup> The processing of an application differs according to the category and type of service. However, in general it begins with the submission of the petition and the payment of fees. If the application is for domestic services it is processed in the Satellite Radio Branch of the Common Carrier Bureau's Domestic Facilities Division. Petitions of applicants seeking a license to provide international services are referred to the Office of Assistant Bureau Chief, International. When the proposed service is both international and domestic, the processing would normally begin in the domestic branch and then move to the international division. In addition to the formalities of the application, and the verification of the legal, financial and technical requirements, the FCC also examines the following criteria: (i) whether the satellite service would cause interference to other users of the spectrum, (ii) whether it would create air hazard, and (iii) whether it would impose a radiation threat or violate environmental laws. D'ANGELO, GEORGE V., *AEROSPACE BUSINESS LAW* 87 (Quorum Books, 1994).

<sup>7</sup> FCC 97-399.

requirements, as well as national security, law enforcement, and trade and foreign policy concerns. In the Report and Order, the FCC adopted a presumption that entry by WTO Member satellite systems will promote competition in the U.S. satellite services market<sup>8</sup>. Thus, for public interest considerations, the FCC will treat non-U.S. satellites of WTO members and U.S. satellites alike. Therefore, non-U.S. systems will be required to comply with the same financial, technical and legal qualifications, observe the prohibition against exclusive service arrangements, and comply with other general service rules applicable to U.S. systems. Although license conditions will almost always provide sufficient protection against anti-competitive conduct, the FCC recognizes the possibility that circumstances might arise in which conditions might not adequately constrain the potential for anti-competitive harm in the U.S. market. Thus, in such an exceptional case, where grant would pose a very high risk to competition that cannot be cured by license conditions, the Commission reserves the right to deny an application. Additionally, opposing parties will also have the opportunity to demonstrate that grant of the application would cause competitive harm to the U.S. satellite market.

In implementing this framework, the FCC will not require space stations licensed by another country or administration to obtain separate and duplicative U.S. space station licenses. Rather, the FCC will license earth stations located in the United States to operate with these satellites. Further, the FCC will permit operators of existing or planned non-U.S. space stations to participate in U.S. space station processing rounds, where the FCC considers competing applications to operate space stations that will offer a specific satellite service in particular frequency bands. In addition, earth station entities may file an earth station application either in a processing round or separately where the non-U.S. satellite is already in orbit.

For all satellites providing DTH, DBS, and Digital Audio Radio Services (DARS), which are services not covered by U.S. commitments under the WTO Basic Telecommunications Agreement, as well as for satellites licensed by non-WTO Members, the FCC will apply the ECO-Sat test, i.e., analyzing whether U.S. satellites have effective competitive opportunities in the relevant foreign markets, to determine whether allowing the foreign-licensed satellite to serve the United States would satisfy the competition component of the public interest analysis.

It bears noting that with respect to DBS, if the FCC finds that the public interest will be served by the refusal or revocation of a license it may refrain from authorizing the operation of a station held by: (i) an alien or his or her representative; (ii) a foreign government; (iii) a corporation

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<sup>8</sup> The FCC decided not to apply the ECO-Sat test to all WTO Members, including those that did not make specific commitments for satellite services, because it is believed that these WTO Members are bound to extend the Most Favored Nation treatment to services or service suppliers of other WTO Members, and are subject to the dispute resolution process contained in the GATs.

organized under the laws of a foreign government; (iv) a corporation of which more than one-fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government, or by a corporation organized under the laws of a foreign country; or (v) a corporation directly or indirectly controlled by another corporation of which more than one-fourth of the capital stock is owned of record or voted by aliens, a foreign government or by a corporation organized under the laws of a foreign country<sup>9</sup>.

However, under the Argentine-US satellite reciprocity agreement, the FCC is obliged to evaluate applications regarding DTH, DBS and DARS services in the same manner as applications to access satellites licensed by the United States. Specifically, the Commission may not apply the ECO-Sat test to Argentine applications, but must evaluate them under the presumption that entry will promote competition unless an opposing party demonstrates a very high risk to competition in the United States satellite market that could not be addressed by conditions on the license. Applying the ECO-Sat test to Argentine applications would be redundant and contradict the spirit of the Agreement because its purpose is precisely to enhance competition by permitting Argentine-licensed satellites to offer new services to U.S. consumers, and opening the Argentine market to U.S.-licensed satellites. Indeed, the Agreement itself grants U.S. companies the right to enter the Argentine market for these particular satellite services and affords various other rights and protections concerning the delivery of services in that market. In essence, the Agreement acts as a gateway to, and a guarantee of, increased competition in the two countries. Thus, there is no need for the FCC to conduct an inquiry into the effective competitive opportunities in the Argentine market.

The Protocol additionally prescribes that DTH, BSS and FSS signals may be provided for transmission and/or reception within and/or between the territories of the parties. It bears noting that signals need not be transmitted from an earth station located within the territory of the parties. Moreover, DTH, BSS and FSS signals may be provided for transmission and/or reception between either party and third parties. In such case, licenses will be subject to each party's applicable laws applied in a non-discriminatory and transparent manner.

Article 7 of the Protocol prescribes that nothing may be construed to permit limits on the number of either DTH, BSS or FSS satellites licensed by the parties or entities granted a license in the United States or Argentina to transmit and/or receive DTH, BSS or FSS signals via satellites licensed by the parties. Additionally, each administration has to permit DTH, BSS and FSS signals delivered directly without requiring retransmission over an intermediary satellite system, or through an intermediary earth station. However, the Protocol does not affect the rights of the parties to apply their respective laws governing the provision of television service and multi-point distribution services to end users of the

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<sup>9</sup> 47 CFR § 100.11.

two states concerned. With respect to programming and advertising, both the US and Argentina undertook to refrain from imposing significant restrictions on the amount or origin of advertising and program content for DTH and BSS. In this regard, the following key principles will apply: (i) any requirements for domestic program content and/or education and public interest programming should be limited to a modicum of the total program channels of the multi-channel DTH and BSS systems. These requirements may be met on a system-wide basis and not necessarily on a per channel basis; (ii) a party may impose non-discriminatory restrictions on program content and advertising, such as material involving obscenity, indecency, national security, and public health and safety concerns. However, under no circumstances may restrictions on the amount or origin of programming and advertising materially hinder the distribution of programming and advertising to the national market of either party.

Additionally, each administration agreed to exert its best efforts to assist the other one with the technical coordination of new satellite network frequency assignments and associated orbital positions before the International Telecommunication Union ("ITU"), as well as with the modification of current ones. Furthermore, each administration undertook to concur with the requests of the other one made through the ITU for coordination of satellite networks, provided that they are consistent with ITU rules and regulations and national technical laws. However, the protocol does not obligate either administration to require that any operator of a satellite licensed by one of the parties substantially alter its ongoing operations and technical characteristics in order to accommodate new satellites for the provision of DTH, BSS or FSS. In the event that there is harmful interference to a satellite licensed by one of the parties to the protocol the affected administration will notify the one responsible for licensing the interfering satellite. Then both will analyze the information concerning the interfering signal, consult on solutions and seek to agree on the appropriate actions to resolve the interference.

### III. Conclusions

The agreement and its protocol are expected to foster competition both in the United States and Argentina. For US companies they will provide a unique opportunity to enter the otherwise highly restricted Argentine satellite market. Argentine companies will also benefit from the provisions of the agreement to offer services in the United States, especially DTH.

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## SHORT ACCOUNTS

## ITU's Minneapolis Plenipotentiary Conference

In inaugurating ITU's Minneapolis Plenipotentiary Conference in early November 1998, Vice President Al Gore called for fulfillment of five great challenges which, in his view, make up a Digital Declaration of Interdependence.

The first challenge was to improve access to technology so everyone on the planet is within walking distance of voice and data telecommunication services within the next decade. The second task was to overcome the language barriers and develop technology with real-time digital translation so anyone on the planet can talk to anyone else. The third one was to create a Global Knowledge Network of people who are working to ensure public safety, to improve the delivery of education, health care, agricultural resources and sustainable development. The fourth challenge was to use communications technology to ensure the free flow of ideas, support democracy and free speech. The last task was to use communications technology to expand economic opportunities to all families and communities around the globe.

During the ensuing proceedings, the Conference decided *inter alia* to establish fees to be charged to satellite system owners for ITU frequency coordination applications received after November 6, 1998. However, fees will not be payable until after the next World Radio Communication Conference in 2000.\*

## ECSL International Colloquium, Perugia, May 6-7, 1999

The 3rd International ECSL Colloquium, co-organised with the University of Perugia and the Italian National Research Council (Istituto di Studi Giuridici sulla Comunità Internazionale) and held on 6 and 7 May 1999 in Perugia, Italy, dealt with "International Organisations and Space Law: Their Role and Contributions."

Perugia, with its roots going back three thousand years, developed a tremendously rich heritage, both artistic and cultural. This beautiful city, with its university, is also a renowned centre for the development of knowledge in various fields among which international law and space law have a very special place. Perugia, with such incentives, offered the perfect setting for a challenging Colloquium.

The main goal of the Colloquium was to address current space law related issues in light of the UNISPACE III Conference taking place in July 1999.

Major space programmes are conducted by or with the participation of international organisations. Such organisations are playing an increasing role in the drafting and implementation of space law. Many have accepted some of the space treaties. Several are drawing up and agreeing to texts of importance regarding the progress of space law. These include agreements and MOUs containing provisions related to space law *lato sensu*,

such as: liability, intellectual property rights, life and work on board manned space stations, earth observation, telecommunication and navigation.

International law, space law and national laws all have a bearing in various ways on activities conducted in outer space by international organisations. The organisers had therefore prepared a programme likely to provide the broadest and most comprehensive analysis of the subject. Space law experts and practitioners addressed the latest developments in the field, bringing participants up-to-date.

The programme was structured as follows:

On 6 May, a first session was dedicated to international organisations participating in space activities with speakers from the European Space Agency, Eutelsat, Eumetsat and Intersputnik. During a second session, experts from the United Nations, ICAO, WIPO and ITU expressed their views on the topic of 'International Organisations engaged in space regulatory, policy-making and related activities'. The last session of the day brought together representatives of Inmarsat, Intelsat and Eutelsat, to discuss problems arising from the privatisation of international space organisations.

On 7 May, the various eminent speakers reflected their thoughts on the topic of "New role for International Organisations in the development of Space Law within contemporary International Law." The first session provided input on academic thinking concerning international organisations (Contributions through international treaties and agreements). The last two sessions of the day were devoted to panel discussions involving the contributions of international organisations to the main sectors of space activity which included commercialisation, living and working in space, space transportation systems, earth observation, telecommunications and navigation.

The proceedings of the Colloquium will be published by mid-July in order to be available for the UNISPACE III Conference.

*Thierry Herman*  
ECSL Secretary

### **CASE DEVELOPMENTS**

In February 1999, CD Radio filed suit against XM Satellite Radio Inc., formerly known as the American Mobile Radio Corp., in the Southern District of New York for patent infringement. Both companies have licenses from the U.S. Government to build digital radio broadcasting services from satellites. The suit alleges that XM's proposed transmission system would infringe on each of three CD Radio patents and seeks an injunction to prevent XM from constructing the system.\*

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\* CD Radio News, Feb. 29, 1999.

Executive and Legislative Notes

A bill introduced in the U.S. House of Representatives would bar **exports of US satellites** and related hardware to China. A similar bill proposed in 1998 was passed by the House as part of the Defense Authorization Bill but the provision was stricken from the final legislation due to disagreement between House and Senate negotiators.

A bill approved by the US Senate Commerce Committee in May would eliminate the privileges and immunities Comsat enjoys as U.S. signatory to Intelsat. It would bar **Intelsat and Comsat** from providing domestic satellite services in the United States until privatization is affected in accordance with U.S. preferences. Comsat owns 20 percent of Intelsat and currently controls access to Intelsat from the United States. The bill would also remove the ban imposed the U.S. Satellite Communications Act of 1962 under which no single entity could own more than 49 percent of Comsat's shares.

Under a set of new regulations (C.F.R. Parts 121 and 124) the U.S. Department of State removed **commercial satellites** from the Commerce Control list and transferred them to the **U.S. Munitions List**.<sup>+</sup>

The Clinton administration has been seeking changes in the 1972 Anti-Ballistic Missile (ABM) Treaty with Russia which sharply curtails the development of missile defenses. However, the lower house of the Russian parliament, the state Duma, is likely to oppose such move and may refuse to ratify the START II strategic arms treaty. In that case, the United States might give notice of its intent to withdraw from the ABM treaty.

International Developments

The first two building blocks of the **International Space Station**, the Russian-built Zarya control module and the U.S.-built Unity chamber were fitted perfectly together during Endeavor's **December 1998** mission. More recently, on May 27, 1999, the space shuttle **Discovery** docked flawlessly with the International Space Station 235 miles above the border of Russia and Kazakhstan after lifting off with a crew of seven (5 men and 2 women from the U.S., Canada and Russia) on the first shuttle flight in six months. The crew replaced flawed battery packs and unloaded 1.5 tons of tools, spare parts, computers, water and clothes into the stations' two modules. As their final orbital job, the astronauts released Starshine, an educational satellite, composed of tiny aluminum mirrors to study the impact of solar rays. The 77 foot orbiting station will accommodate its first crew of two Russians and one American who are scheduled to arrive there in March 2000. It is estimated that 43 launches and 159 more spacewalks will be needed to assemble the 16-nation, 1 million pound orbiting complex.

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<sup>+</sup> For a thoroughgoing discussion and analysis of U.S. Space Technology Exports, see pp. 35-53, *supra*.

In early December, it was announced that 13 African nations were being licensed to use the mapping software known as **Earth Mapper** under an agreement reached among Earth Resources Mapping of San Diego, the Eastern and Southern African Mineral Resources Development Centre of Dar es Salaam, Tanzania, and the European Union.

In a not entirely uncommon scenario, both the Paris based **EUTELSAT** and the **Société Européenne des Satellites (SES)**, Luxembourg, wanted orbital positions so close together that their satellites using the same frequencies would have interfered with each other. ITU regulatory authorities ruled in 1998 that EUTELSAT had waited too long to use its assigned position and thus forfeited any claim to it. In view of this, SES did not appear interested in seeking a compromise with EUTELSAT.

The purchase of a large stake of shares in **AsiaSat** of Hongkong by **SES** will give both companies opportunities for orbital positions and access to more developed satellite services.

In February 1999, **ITU released its Y2K** for telecommunications operators stressing the urgent need for efforts to address the Year 2000 problem. (ITU Web site at: <http://www.itu.int/y2k>).

**Assicurazioni Generali's** 10th International Conference in Florence, Italy, **March 25-26, 1999**, dealt with the Insurance Implications of Commercial and Industrial Activities in Space.

On September 29, 1998, Boeing reached a settlement with the U.S. Department of State with the payment of a \$10 million fine for engaging in unauthorized technology transfers to the Russian Federation. This settlement permitted Boeing to go forward with its development of the international **Sea Launch** program and plan to conduct its first launch in 1999. As an important part of the Sea Launch venture, a partnership of Boeing, Russian, Norwegian and Ukrainian companies, one of two Zenit rockets shipped to the United States from Russia successfully launched a dummy satellite on **March 27, 1999**.

**INMARSAT**, the London based former intergovernmental organization serving the maritime community, which has evolved to a global mobile satellite communications provider, became a private company on **April 15, 1999**, but is not expected to issue stock until 2001. Its privatization plan is being reviewed in June 1999 by its Board of Governors.

The **International Astronautical Federation** now has 153 members from 45 different countries.

#### ***Manfred Lachs Space Law Moot Court Competition***

The winners of the U.S. and European preliminary competitions, Vanderbilt University and the University of Paris XI, are in the finals of the 8th Manfred Lachs Space Law Moot Court Competition dealing with the Mor-Toaler Sea-Launch Project. The contest will be held October 7, 1999, during the IISL Colloquium in the Great Hall of Justice at the Peace Palace in The Hague and will be adjudged by ICJ Judges Weeramantry, Guillaume and Vereshchetin.



*Other Events*

**Human Space Flight** was the theme of a workshop on Feb. 17-19, 1999, in Houston, Texas.

**Earth Satellite Corp.** is using satellites in the Green Canyon area of the Gulf of Mexico to locate oil reserves beneath the ocean floor.

The **15th National Space Symposium** held April 5-8, 1999, in Colorado Springs scheduled discussions on commercialization, trade and national security issues, as well as on the international space station.

The use of commercial satellites capable of discerning images with a 1-meter resolution will require much more storage space than today's commercial images, which have a 5-meter resolution and calls for the building of an **image archiving system** advocated by Lockheed Martin for customers who want to build their own archives for urban planning, environmental monitoring or defense purposes.

The quantity of **remote sensing satellite data** received daily by ground stations all over the world is voluminous making data management and storage an ever-increasing problem for station operators. Alaska's Synthetic Aperture Radar (SAR) facility in Fairbanks is to record SAR data by using Vexcel's state-of-the-art technology. This would replace costly high density tape recorders with inexpensive technology to record data directly on computer disks thus allowing for its cataloging and automated operation of the archive system.

The **Boeing/AIAA** co-sponsored '99 International Business Forum and Exhibition took place May 3-5, 1999, in Arlington, Virginia. It focused on space commercial, scientific and security needs for the new millennium.

The **14th High Frontier Conference** was held May 6-9, 1999, in Princeton, New Jersey.

The American Astronautical Society's **3rd National Space Forum** meeting on June 2-3, 1999, at the National Academy of Sciences in D.C. dealt with Space Based Remote Sensing - Seeing and Shaping the Planet.

*Brief News in Retrospect*

Based on the number of objects detected by the **Hubble Space Telescope**, it is estimated that the **Universe** contains about 125 billion galaxies quite a bit more than the 80 billion estimated earlier. The farthest galaxy discovered so far is 13 billion light years away. New data from the Hubble space telescope prompted astronomers to claim that the "Big Bang" explosion of the universe occurred at between 12 billion and 13.5 billion years ago, more recently than once believed.

A mysterious **gamma ray explosion**, the most powerful ever observed, was detected in January nine billion light years from Earth.

For the first time, astronomers detected **three planets** which were **circling a star**. Two of them appeared heavier than Jupiter.

A spacecraft launched in December for an encounter with an **asteroid** is to gather critical information on its density and composition

so as to determine how to shatter or divert it with explosives should it be necessary to avoid a life threatening collision with Earth.

Astronomers recently concluded that **Pluto** should remain to be classified as the ninth planet of our solar system and not be reclassified as an asteroid.

The **Galileo** spacecraft went into safe mode stopping all of its essential functions around Jupiter.

Recent data from **Mars Global Surveyor** indicates that the south pole of Mars has a large amount of ice both from water and carbon dioxide.

NASA's **Landsat 7**, an essential sensor for major ground receiving facilities, was successfully placed in orbit April 15, 1999.

A NASA spacecraft, named **Stardust**, began its journey on Feb. 7, 1999, to meet up with comet Wild-2 in 2004 and to return samples of microscopic particles (comet and interstellar dust) to Earth in 2006.

A **Delta III** rocket launched May 4, 1999, was reportedly the sixth failure of U.S. rocket launches in less than 9 months.

**Canada's** International Space Station Remote Manipulator System **Robotic arm** is being shipped to the Kennedy Space Center for verification testing. It is expected to be launched around July 2000 on a U.S. space shuttle.

**Aerospaziale** is developing Europe's first guided Atmospheric Reentry Demonstrator (**ARD**), which was launched by Ariane 5 on its successful third flight. The data from the mission will help in understanding the complexities involved in spacecraft reentry.

**Russia** abandoned a **space mirror** experiment on Feb. 6, 1999, which would have carried giant reflectors to capture sunlight and aim it to Arctic cities during dark winters. The structure to open the solar panels malfunctioned and scientists could not find a way to fix the problem.

Russian space officials indicated that the **Mir** space station, launched in February 1986 and expected to last only 5 years, may stay in Orbit to 2003 if a private investor could pay all the associated expenses estimated at \$250 million a year. **Mir** performed well throughout most of its extended lifetime, apart from several serious breakdowns in 1997.

The **European Space Agency** plans to send an unmanned mission to **Mars** to study the red planet, officials said Tuesday. The Mars Express satellite - expected to land on Mars in 2003 - will try to determine why the once wet and warm planet became cold and dry some 3.5 billion years ago. It is one of several planned Mars missions over the next few years.

Basic training for the Japanese International Space Station crew members is underway. The first flight of **Japan's** H-IIA launch vehicle in February 2000 is designed to improve manufacturing processes, reduce costs, and also meet launch demand for 2 or 3-ton GEO satellites.

**India's** space budget increased significantly and on May 31, 1999, a rocket carrying Indian, German and South Korean satellites took off from the Indian space center in a government sponsored commercial endeavor.

A **Hungarian** furnace to research crystal growth, originally designed for a Soviet Union satellite, is to arrive at the Marshall Space Flight Center in August for possible use on the international space station.

Space insurance underwriters are likely to raise premiums because of many new claims arising from satellite and rocket failures.

## B. FORTHCOMING EVENTS

A discussion of Legal Issues of Privatising Space Activities with emphasis on National and Regional Policies and Frameworks is being planned for July 19, 1999, in cooperation with the IISL Workshop at the UNISPACE III Conference, Vienna International Center, Vienna, Austria.

The next IISL Colloquium will be held during the IAF Congress in Amsterdam, The Netherlands, Oct. 4-8, 1999. In addition to the already reported IISL topics (Vol. 26, No. 2), the International Academy of Astronautics will have several meetings of possible legal interest which include sessions on the commercialization of space activities (new business opportunities and financing methods), space tourism, protection of the space environment, search for extraterrestrial intelligence, interdisciplinary connections and international Moon/Mars exploration and development. The Congress will also have sessions devoted to earth observation systems and student activities.

Asian Aerospace 2000 will be hosted Feb. 22-27, 2000, in Singapore.

The Fourth IAA International Conference on Low-Cost Planetary Missions will be held May 2-5, 2000, at the Johns Hopkins University Applied Physics Lab in Laurel, Maryland.

ITU's World Radiocommunication Conference slated for May 2000 in Istanbul, Turkey, is to address spectrum and frequency allocations for space and terrestrial communications worldwide.

The 43d IISL Colloquium will be held in Rio de Janeiro, Brazil, Oct. 2-6, 2000. The following topics are scheduled for discussion:

SESSION 1: Law and Ethics of Space Activities in the New Millennium (What is the role of law in bringing the benefits of space to humanity, including consideration of the needs and interests of developing countries?);

SESSION 2: State Responsibility and Liability for Non-State Space Activities (What is the responsibility and liability of states with regard to activities in space by non-state entities, such as private corporations, consortia, international non-governmental organizations or other non-state entities?);

SESSION 3: The Interrelation between Public International Law and Private International Law in the Regulation of Space Activities (Papers should focus on the interaction between private law aspects of space activities with regard to insurance, financing and related issues, and international space law);

SESSION 4: Other Legal Matters, including Recent Developments in the Regulation of Space Debris, the Exploitation of Non-Terrestrial Resources, and the Implications of Proposed Missile Defense Systems.

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FRONTIERS OF SPACE EXPLORATION, by Roger D. Launius (Guides to Historic Events of the 20th Century, Greenwood Press 1998), pp. 204.

This book, by the Chief Historian of the National Aeronautics and Space Administration in Washington, D.C., summarizes the early history of spaceflight and provides a wealth of information for student researchers, including primary documents which provide insight into how major policy decisions were reached.

Four essays provide a historical overview and ready reference features include a timeline of key events and biographical profiles of 24 American and Soviet space pioneers.

SPACE: THE DORMANT FRONTIER -- CHANGING THE PARADIGM FOR THE 21ST CENTURY, by Joan Johnson-Freese and Roger Handberg (Praeger 1997), pp. 277.

This hardcover treatise deals with U.S. space efforts and starts with a chapter the authors call the "big picture" which includes an overview of U.S. space policy.

The ensuing chapters touch upon three major areas: The "Situation" section which describes the current situation involving the U.S. space program and explains the historical background; (b) The "Opportunity" part which describes the differences in the current space policy environment and the reasons why it "affords a chance for meaningful transformation" and (c) The "Method" section which, while recognizing the difficulties associated with the current situation involving such transformation, suggests essential requisites for a "meaningful metamorphosis to occur" (p.7).

The book makes policy recommendations for ways in which the civil and military sides of the U.S. space program can work together. It includes information and analysis on both programs as it seeks to look at the space program as a whole.

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# CURRENT DOCUMENTS

## COMMERCIAL SPACE ACT OF 1998

Public Law 105-303  
105th Congress

### An Act

To encourage the development of a commercial space industry in the United States,  
and for other purposes.

Oct. 28, 1998  
[H.R. 1702]

*Be it enacted by the Senate and House of Representatives of  
the United States of America in Congress assembled,*

#### SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) **SHORT TITLE.**—This Act may be cited as the “Commercial  
Space Act of 1998”.

(b) **TABLE OF CONTENTS.**—

Sec. 1. Short title; table of contents.  
Sec. 2. Definitions.

Commercial  
Space Act of  
1998.

42 USC 14701  
note.

#### TITLE I—PROMOTION OF COMMERCIAL SPACE OPPORTUNITIES

Sec. 101. Commercialization of Space Station.  
Sec. 102. Commercial space launch amendments.  
Sec. 103. Launch voucher demonstration program.  
Sec. 104. Promotion of United States Global Positioning System standards.  
Sec. 105. Acquisition of space science data.  
Sec. 106. Administration of Commercial Space Centers.  
Sec. 107. Sources of Earth science data.

#### TITLE II—FEDERAL ACQUISITION OF SPACE TRANSPORTATION SERVICES

Sec. 201. Requirement to procure commercial space transportation services.  
Sec. 202. Acquisition of commercial space transportation services.  
Sec. 203. Launch Services Purchase Act of 1990 amendments.  
Sec. 204. Shuttle privatization.  
Sec. 205. Use of excess intercontinental ballistic missiles.  
Sec. 206. National launch capability study.

#### SEC. 2. DEFINITIONS.

42 USC 14701.

For purposes of this Act—

(1) the term “Administrator” means the Administrator of  
the National Aeronautics and Space Administration;

(2) the term “commercial provider” means any person  
providing space transportation services or other space-related  
activities, primary control of which is held by persons other  
than Federal, State, local, and foreign governments;

(3) the term “payload” means anything that a person under-  
takes to transport to, from, or within outer space, or in sub-  
orbital trajectory, by means of a space transportation vehicle,  
but does not include the space transportation vehicle itself  
except for its components which are specifically designed or  
adapted for that payload;

(4) the term “space-related activities” includes research  
and development, manufacturing, processing, service, and other  
associated and support activities;

(5) the term “space transportation services” means the  
preparation of a space transportation vehicle and its payloads

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for transportation to, from, or within outer space, or in sub-orbital trajectory, and the conduct of transporting a payload to, from, or within outer space, or in suborbital trajectory;

(6) the term "space transportation vehicle" means any vehicle constructed for the purpose of operating in, or transporting a payload to, from, or within, outer space, or in suborbital trajectory, and includes any component of such vehicle not specifically designed or adapted for a payload;

(7) the term "State" means each of the several States of the Union, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, and any other commonwealth, territory, or possession of the United States; and

(8) the term "United States commercial provider" means a commercial provider, organized under the laws of the United States or of a State, which is—

(A) more than 50 percent owned by United States nationals; or

(B) a subsidiary of a foreign company and the Secretary of Transportation finds that—

(i) such subsidiary has in the past evidenced a substantial commitment to the United States market through—

(I) investments in the United States in long-term research, development, and manufacturing (including the manufacture of major components and subassemblies); and

(II) significant contributions to employment in the United States; and

(ii) the country or countries in which such foreign company is incorporated or organized, and, if appropriate, in which it principally conducts its business, affords reciprocal treatment to companies described in subparagraph (A) comparable to that afforded to such foreign company's subsidiary in the United States, as evidenced by—

(I) providing comparable opportunities for companies described in subparagraph (A) to participate in Government sponsored research and development similar to that authorized under this Act;

(II) providing no barriers, to companies described in subparagraph (A) with respect to local investment opportunities, that are not provided to foreign companies in the United States; and

(III) providing adequate and effective protection for the intellectual property rights of companies described in subparagraph (A).

## TITLE I—PROMOTION OF COMMERCIAL SPACE OPPORTUNITIES

### SEC. 101. COMMERCIALIZATION OF SPACE STATION.

42 USC 14711.

(a) **POLICY.**—The Congress declares that a priority goal of constructing the International Space Station is the economic development of Earth orbital space. The Congress further declares that free and competitive markets create the most efficient conditions for promoting economic development, and should therefore govern the economic development of Earth orbital space. The Congress further declares that the use of free market principles in operating, servicing, allocating the use of, and adding capabilities to the Space Station, and the resulting fullest possible engagement of commercial providers and participation of commercial users, will reduce Space Station operational costs for all partners and the Federal Government's share of the United States burden to fund operations.

(b) **REPORTS.**—(1) The Administrator shall deliver to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate, within 90 days after the date of the enactment of this Act, a study that identifies and examines—

(A) the opportunities for commercial providers to play a role in International Space Station activities, including operation, use, servicing, and augmentation;

(B) the potential cost savings to be derived from commercial providers playing a role in each of these activities;

(C) which of the opportunities described in subparagraph (A) the Administrator plans to make available to commercial providers in fiscal years 1999 and 2000;

(D) the specific policies and initiatives the Administrator is advancing to encourage and facilitate these commercial opportunities; and

(E) the revenues and cost reimbursements to the Federal Government from commercial users of the Space Station.

(2) The Administrator shall deliver to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate, within 180 days after the date of the enactment of this Act, an independently conducted market study that examines and evaluates potential industry interest in providing commercial goods and services for the operation, servicing, and augmentation of the International Space Station, and in the commercial use of the International Space Station. This study shall also include updates to the cost savings and revenue estimates made in the study described in paragraph (1) based on the external market assessment.

(3) The Administrator shall deliver to the Congress, no later than the submission of the President's annual budget request for fiscal year 2000, a report detailing how many proposals (whether solicited or not) the National Aeronautics and Space Administration received during calendar years 1997 and 1998 regarding commercial operation, servicing, utilization, or augmentation of the International Space Station, broken down by each of these four categories, and specifying how many agreements the National Aeronautics and Space Administration has entered into in response to these proposals, also broken down by these four categories.

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(4) Each of the studies and reports required by paragraphs (1), (2), and (3) shall include consideration of the potential role of State governments as brokers in promoting commercial participation in the International Space Station program.

**SEC. 102. COMMERCIAL SPACE LAUNCH AMENDMENTS.**

(a) AMENDMENTS.—Chapter 701 of title 49, United States Code, is amended—

(1) in the table of sections—

(A) by amending the item relating to section 70104 to read as follows:

“70104. Restrictions on launches, operations, and reentries.”;

(B) by amending the item relating to section 70108 to read as follows:

“70108. Prohibition, suspension, and end of launches, operation of launch sites and reentry sites, and reentries.”;

(C) by amending the item relating to section 70109 to read as follows:

“70109. Preemption of scheduled launches or reentries.”;

and

(D) by adding at the end the following new items:

“70120. Regulations.

“70121. Report to Congress.”.

(2) in section 70101—

(A) by inserting “microgravity research,” after “information services,” in subsection (a)(3);

(B) by inserting “, reentry,” after “launching” both places it appears in subsection (a)(4);

(C) by inserting “, reentry vehicles,” after “launch vehicles” in subsection (a)(5);

(D) by inserting “and reentry services” after “launch services” in subsection (a)(6);

(E) by inserting “, reentries,” after “launches” both places it appears in subsection (a)(7);

(F) by inserting “, reentry sites,” after “launch sites” in subsection (a)(8);

(G) by inserting “and reentry services” after “launch services” in subsection (a)(8);

(H) by inserting “reentry sites,” after “launch sites,” in subsection (a)(9);

(I) by inserting “and reentry site” after “launch site” in subsection (a)(9);

(J) by inserting “, reentry vehicles,” after “launch vehicles” in subsection (b)(2);

(K) by striking “launch” in subsection (b)(2)(A);

(L) by inserting “and reentry” after “conduct of commercial launch” in subsection (b)(3);

(M) by striking “launch” after “and transfer commercial” in subsection (b)(3); and

(N) by inserting “and development of reentry sites,” after “launch-site support facilities,” in subsection (b)(4);

(3) in section 70102—

(A) in paragraph (3)—

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(i) by striking "and any payload" and inserting in lieu thereof "or reentry vehicle and any payload from Earth";

(ii) by striking the period at the end of subparagraph (C) and inserting in lieu thereof a comma; and

(iii) by adding after subparagraph (C) the following:

"including activities involved in the preparation of a launch vehicle or payload for launch, when those activities take place at a launch site in the United States.";

(B) by inserting "or reentry vehicle" after "means of a launch vehicle" in paragraph (8);

(C) by redesignating paragraphs (10), (11), and (12) as paragraphs (14), (15), and (16), respectively;

(D) by inserting after paragraph (9) the following new paragraphs:

"(10) 'reenter' and 'reentry' mean to return or attempt to return, purposefully, a reentry vehicle and its payload, if any, from Earth orbit or from outer space to Earth.

"(11) 'reentry services' means—

"(A) activities involved in the preparation of a reentry vehicle and its payload, if any, for reentry; and

"(B) the conduct of a reentry.

"(12) 'reentry site' means the location on Earth to which a reentry vehicle is intended to return (as defined in a license the Secretary issues or transfers under this chapter).

"(13) 'reentry vehicle' means a vehicle designed to return from Earth orbit or outer space to Earth, or a reusable launch vehicle designed to return from Earth orbit or outer space to Earth, substantially intact."; and

(E) by inserting "or reentry services" after "launch services" each place it appears in paragraph (15), as so redesignated by subparagraph (C) of this paragraph;

(4) in section 70103(b)—

(A) by inserting "AND REENTRIES" after "LAUNCHES" in the subsection heading;

(B) by inserting "and reentries" after "commercial space launches" in paragraph (1); and

(C) by inserting "and reentry" after "space launch" in paragraph (2);

(5) in section 70104—

(A) by amending the section designation and heading to read as follows:

**"§ 70104. Restrictions on launches, operations, and reentries";**

(B) by inserting "or reentry site, or to reenter a reentry vehicle," after "operate a launch site" each place it appears in subsection (a);

(C) by inserting "or reentry" after "launch or operation" in subsection (a)(3) and (4);

(D) in subsection (b)—

(i) by striking "launch license" and inserting in lieu thereof "license";

(ii) by inserting "or reenter" after "may launch"; and



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(iii) by inserting "or reentering" after "related to launching"; and  
 (E) in subsection (c)—

(i)

by amending the subsection heading to read as follows:  
 "PREVENTING LAUNCHES AND REENTRIES.—";

(ii) by inserting "or reentry" after "prevent the launch"; and

(iii) by inserting "or reentry" after "decides the launch";

(6) in section 70105—

(A) by inserting "(1)" before "A person may apply" in subsection (a);

(B) by striking "receiving an application" both places it appears in subsection (a) and inserting in lieu thereof "accepting an application in accordance with criteria established pursuant to subsection (b)(2)(D)";

(C) by adding at the end of subsection (a) the following:  
 "The Secretary shall transmit to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a written notice not later than 30 days after any occurrence when a license is not issued within the deadline established by this subsection.

"(2) In carrying out paragraph (1), the Secretary may establish procedures for safety approvals of launch vehicles, reentry vehicles, safety systems, processes, services, or personnel that may be used in conducting licensed commercial space launch or reentry activities.";

(D) by inserting "or a reentry site, or the reentry of a reentry vehicle," after "operation of a launch site" in subsection (b)(1);

(E) by striking "or operation" and inserting in lieu thereof "operation, or reentry" in subsection (b)(2)(A);

(F) by striking "and" at the end of subsection (b)(2)(B);

(G) by striking the period at the end of subsection (b)(2)(C) and inserting in lieu thereof "and";

(H) by adding at the end of subsection (b)(2) the following new subparagraph:

"(D) regulations establishing criteria for accepting or rejecting an application for a license under this chapter within 60 days after receipt of such application."; and

(I) by inserting "including the requirement to obtain a license," after "waive a requirement" in subsection (b)(3);

(7) in section 70106(a)—

(A) by inserting "or reentry site" after "observer at a launch site";

(B) by inserting "or reentry vehicle" after "assemble a launch vehicle"; and

(C) by inserting "or reentry vehicle" after "with a launch vehicle";

(8) in section 70108—

(A) by amending the section designation and heading to read as follows:

Notice.  
 Deadline.

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**"§ 70108. Prohibition, suspension, and end of launches, operation of launch sites and reentry sites, and reentries";**

and

(B) in subsection (a)—

(i) by inserting "or reentry site, or reentry of a reentry vehicle," after "operation of a launch site"; and

(ii) by inserting "or reentry" after "launch or operation";

(9) in section 70109—

(A) by amending the section designation and heading to read as follows:

**"§ 70109. Preemption of scheduled launches or reentries";**

(B) in subsection (a)—

(i) by inserting "or reentry" after "ensure that a launch";

(ii) by inserting ", reentry site," after "United States Government launch site";

(iii) by inserting "or reentry date commitment" after "launch date commitment";

(iv) by inserting "or reentry" after "obtained for a launch";

(v) by inserting ", reentry site," after "access to a launch site";

(vi) by inserting ", or services related to a reentry," after "amount for launch services"; and

(vii) by inserting "or reentry" after "the scheduled launch"; and

(C) in subsection (c), by inserting "or reentry" after "prompt launching";

(10) in section 70110—

(A) by inserting "or reentry" after "prevent the launch" in subsection (a)(2); and

(B) by inserting "or reentry site, or reentry of a reentry vehicle," after "operation of a launch site" in subsection (a)(3)(B);

(11) in section 70111—

(A) by inserting "or reentry" after "launch" in subsection (a)(1)(A);

(B) by inserting "and reentry services" after "launch services" in subsection (a)(1)(B);

(C) by inserting "or reentry services" after "or launch services" in subsection (a)(2);

(D) by striking "source." in subsection (a)(2) and inserting "source, whether such source is located on or off a Federal range.";

(E) by inserting "or reentry" after "commercial launch" both places it appears in subsection (b)(1);

(F) by inserting "or reentry services" after "launch services" in subsection (b)(2)(C);

(G) by inserting after subsection (b)(2) the following new paragraph:

"(3) The Secretary shall ensure the establishment of uniform guidelines for, and consistent implementation of, this section by all Federal agencies.";

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(H) by striking "or its payload for launch" in subsection (d) and inserting in lieu thereof "or reentry vehicle, or the payload of either, for launch or reentry"; and

(I) by inserting "reentry vehicle," after "manufacturer of the launch vehicle" in subsection (d);

(12) in section 70112—

(A) in subsection (a)(1), by inserting "launch or reentry" after "(1) When a";

(B) by inserting "or reentry" after "one launch" in subsection (a)(3);

(C) by inserting "or reentry services" after "launch services" in subsection (a)(4);

(D) in subsection (b)(1), by inserting "launch or reentry" after "(1) A";

(E) by inserting "or reentry services" after "launch services" each place it appears in subsection (b);

(F) by inserting "applicable" after "carried out under the" in paragraphs (1) and (2) of subsection (b);

(G) by inserting "OR REENTRIES" after "LAUNCHES" in the heading for subsection (e);

(H) by inserting "or reentry site or a reentry" after "launch site" in subsection (e); and

(I) in subsection (f), by inserting "launch or reentry" after "carried out under a";

(13) in section 70113(a)(1) and (d)(1) and (2), by inserting "or reentry" after "one launch" each place it appears;

(14) in section 70115(b)(1)(D)(i)—

(A) by inserting "reentry site," after "launch site,"; and

(B) by inserting "or reentry vehicle" after "launch vehicle" both places it appears;

(15) in section 70117—

(A) by inserting "or reentry site, or to reenter a reentry vehicle" after "operate a launch site" in subsection (a);

(B) by inserting "or reentry" after "approval of a space launch" in subsection (d);

(C) by amending subsection (f) to read as follows:

"(f) LAUNCH NOT AN EXPORT; REENTRY NOT AN IMPORT.—A launch vehicle, reentry vehicle, or payload that is launched or reentered is not, because of the launch or reentry, an export or import, respectively, for purposes of a law controlling exports or imports, except that payloads launched pursuant to foreign trade zone procedures as provided for under the Foreign Trade Zones Act (19 U.S.C. 81a-81u) shall be considered exports with regard to customs entry."; and

(D) in subsection (g)—

(i) by striking "operation of a launch vehicle or launch site," in paragraph (1) and inserting in lieu thereof "reentry, operation of a launch vehicle or reentry vehicle, operation of a launch site or reentry site,"; and

(ii) by inserting "reentry," after "launch," in paragraph (2); and

(16) by adding at the end the following new sections:

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**“§ 70120. Regulations**

“(a) **IN GENERAL.**—The Secretary of Transportation, within 9 months after the date of the enactment of this section, shall issue regulations to carry out this chapter that include— Deadline.

“(1) guidelines for industry and State governments to obtain sufficient insurance coverage for potential damages to third parties;

“(2) procedures for requesting and obtaining licenses to launch a commercial launch vehicle;

“(3) procedures for requesting and obtaining operator licenses for launch;

“(4) procedures for requesting and obtaining launch site operator licenses; and

“(5) procedures for the application of government indemnification.

“(b) **REENTRY.**—The Secretary of Transportation, within 6 months after the date of the enactment of this section, shall issue a notice of proposed rulemaking to carry out this chapter that includes—

“(1) procedures for requesting and obtaining licenses to reenter a reentry vehicle;

“(2) procedures for requesting and obtaining operator licenses for reentry; and

“(3) procedures for requesting and obtaining reentry site operator licenses.

**“§ 70121. Report to Congress**

“The Secretary of Transportation shall submit to Congress an annual report to accompany the President’s budget request that—

“(1) describes all activities undertaken under this chapter, including a description of the process for the application for and approval of licenses under this chapter and recommendations for legislation that may further commercial launches and reentries; and

“(2) reviews the performance of the regulatory activities and the effectiveness of the Office of Commercial Space Transportation.”

(b) **AUTHORIZATION OF APPROPRIATIONS.**—Section 70119 of title 49, United States Code, is amended to read as follows:

**“§ 70119. Authorization of appropriations**

“There are authorized to be appropriated to the Secretary of Transportation for the activities of the Office of the Associate Administrator for Commercial Space Transportation—

“(1) \$6,275,000 for the fiscal year ending September 30, 1999; and

“(2) \$6,600,000 for the fiscal year ending September 30, 2000.”

(c) **EFFECTIVE DATE.**—The amendments made by subsection (a)(6)(B) shall take effect upon the effective date of final regulations issued pursuant to section 70105(b)(2)(D) of title 49, United States Code, as added by subsection (a)(6)(H). 49 USC 70105 note.

**SEC. 103. LAUNCH VOUCHER DEMONSTRATION PROGRAM**

Section 504 of the National Aeronautics and Space Administration Authorization Act, Fiscal Year 1993 (15 U.S.C. 5803) is amended—

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(1) in subsection (a)—

(A) by striking “the Office of Commercial Programs within”; and

(B) by striking “Such program shall not be effective after September 30, 1995.”;

(2) by striking subsection (c); and

(3) by redesignating subsections (d) and (e) as subsections (c) and (d), respectively.

42 USC 14712.

**SEC. 104. PROMOTION OF UNITED STATES GLOBAL POSITIONING SYSTEM STANDARDS.**

(a) **FINDING.**—The Congress finds that the Global Positioning System, including satellites, signal equipment, ground stations, data links, and associated command and control facilities, has become an essential element in civil, scientific, and military space development because of the emergence of a United States commercial industry which provides Global Positioning System equipment and related services.

(b) **INTERNATIONAL COOPERATION.**—In order to support and sustain the Global Positioning System in a manner that will most effectively contribute to the national security, public safety, scientific, and economic interests of the United States, the Congress encourages the President to—

(1) ensure the operation of the Global Positioning System on a continuous worldwide basis free of direct user fees;

(2) enter into international agreements that promote cooperation with foreign governments and international organizations to—

(A) establish the Global Positioning System and its augmentations as an acceptable international standard; and

(B) eliminate any foreign barriers to applications of the Global Positioning System worldwide; and

(3) provide clear direction and adequate resources to the Assistant Secretary of Commerce for Communications and Information so that on an international basis the Assistant Secretary can—

(A) achieve and sustain efficient management of the electromagnetic spectrum used by the Global Positioning System; and

(B) protect that spectrum from disruption and interference.

42 USC 14713.

**SEC. 105. ACQUISITION OF SPACE SCIENCE DATA.**

(a) **ACQUISITION FROM COMMERCIAL PROVIDERS.**—The Administrator shall, to the extent possible and while satisfying the scientific or educational requirements of the National Aeronautics and Space Administration, and where appropriate, of other Federal agencies and scientific researchers, acquire, where cost effective, space science data from a commercial provider.

(b) **TREATMENT OF SPACE SCIENCE DATA AS COMMERCIAL ITEM UNDER ACQUISITION LAWS.**—Acquisitions of space science data by the Administrator shall be carried out in accordance with applicable acquisition laws and regulations (including chapters 137 and 140 of title 10, United States Code). For purposes of such law and regulations, space science data shall be considered to be a commercial item. Nothing in this subsection shall be construed to preclude

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the United States from acquiring, through contracts with commercial providers, sufficient rights in data to meet the needs of the scientific and educational community or the needs of other government activities.

(c) **DEFINITION.**—For purposes of this section, the term “space science data” includes scientific data concerning—

- (1) the elemental and mineralogical resources of the moon, asteroids, planets and their moons, and comets;
- (2) microgravity acceleration; and
- (3) solar storm monitoring.

(d) **SAFETY STANDARDS.**—Nothing in this section shall be construed to prohibit the Federal Government from requiring compliance with applicable safety standards.

(e) **LIMITATION.**—This section does not authorize the National Aeronautics and Space Administration to provide financial assistance for the development of commercial systems for the collection of space science data.

**SEC. 106. ADMINISTRATION OF COMMERCIAL SPACE CENTERS.**

42 USC 14714.

The Administrator shall administer the Commercial Space Center program in a coordinated manner from National Aeronautics and Space Administration headquarters in Washington, D.C.

**SEC. 107. SOURCES OF EARTH SCIENCE DATA.**

42 USC 14715.

(a) **ACQUISITION.**—The Administrator shall, to the extent possible and while satisfying the scientific or educational requirements of the National Aeronautics and Space Administration, and where appropriate, of other Federal agencies and scientific researchers, acquire, where cost-effective, space-based and airborne Earth remote sensing data, services, distribution, and applications from a commercial provider.

(b) **TREATMENT AS COMMERCIAL ITEM UNDER ACQUISITION LAWS.**—Acquisitions by the Administrator of the data, services, distribution, and applications referred to in subsection (a) shall be carried out in accordance with applicable acquisition laws and regulations (including chapters 137 and 140 of title 10, United States Code). For purposes of such law and regulations, such data, services, distribution, and applications shall be considered to be a commercial item. Nothing in this subsection shall be construed to preclude the United States from acquiring, through contracts with commercial providers, sufficient rights in data to meet the needs of the scientific and educational community or the needs of other government activities.

(c) **STUDY.**—(1) The Administrator shall conduct a study to determine the extent to which the baseline scientific requirements of Earth Science can be met by commercial providers, and how the National Aeronautics and Space Administration will meet such requirements which cannot be met by commercial providers.

(2) The study conducted under this subsection shall—

(A) make recommendations to promote the availability of information from the National Aeronautics and Space Administration to commercial providers to enable commercial providers to better meet the baseline scientific requirements of Earth Science;

(B) make recommendations to promote the dissemination to commercial providers of information on advanced technology research and development performed by or for the National Aeronautics and Space Administration; and

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(C) identify policy, regulatory, and legislative barriers to the implementation of the recommendations made under this subsection.

(3) The results of the study conducted under this subsection shall be transmitted to the Congress within 6 months after the date of the enactment of this Act.

(d) SAFETY STANDARDS.—Nothing in this section shall be construed to prohibit the Federal Government from requiring compliance with applicable safety standards.

(e) ADMINISTRATION AND EXECUTION.—This section shall be carried out as part of the Commercial Remote Sensing Program at the Stennis Space Center.

(f) REMOTE SENSING.—

(1) APPLICATION CONTENTS.—Section 201(b) of the Land Remote Sensing Policy Act of 1992 (15 U.S.C. 5621(b)) is amended—

(A) by inserting “(1)” after “NATIONAL SECURITY.—”; and

(B) by adding at the end the following new paragraph:

Federal Register,  
publication.

“(2) The Secretary, within 6 months after the date of the enactment of the Commercial Space Act of 1998, shall publish in the Federal Register a complete and specific list of all information required to comprise a complete application for a license under this title. An application shall be considered complete when the applicant has provided all information required by the list most recently published in the Federal Register before the date the application was first submitted. Unless the Secretary has, within 30 days after receipt of an application, notified the applicant of information necessary to complete an application, the Secretary may not deny the application on the basis of the absence of any such information.”.

(2) NOTIFICATION OF AGREEMENTS.—Section 202(b)(6) of the Land Remote Sensing Policy Act of 1992 (15 U.S.C. 5622(b)(6)) is amended by inserting “significant or substantial” after “Secretary of any”.

## TITLE II—FEDERAL ACQUISITION OF SPACE TRANSPORTATION SERVICES

42 USC 14731.

### SEC. 201. REQUIREMENT TO PROCURE COMMERCIAL SPACE TRANSPORTATION SERVICES.

(a) IN GENERAL.—Except as otherwise provided in this section, the Federal Government shall acquire space transportation services from United States commercial providers whenever such services are required in the course of its activities. To the maximum extent practicable, the Federal Government shall plan missions to accommodate the space transportation services capabilities of United States commercial providers.

(b) EXCEPTIONS.—The Federal Government shall not be required to acquire space transportation services under subsection (a) if, on a case-by-case basis, the Administrator or, in the case of a national security issue, the Secretary of the Air Force, determines that—

(1) a payload requires the unique capabilities of the Space Shuttle;

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(2) cost effective space transportation services that meet specific mission requirements would not be reasonably available from United States commercial providers when required;

(3) the use of space transportation services from United States commercial providers poses an unacceptable risk of loss of a unique scientific opportunity;

(4) the use of space transportation services from United States commercial providers is inconsistent with national security objectives;

(5) the use of space transportation services from United States commercial providers is inconsistent with international agreements for international collaborative efforts relating to science and technology;

(6) it is more cost effective to transport a payload in conjunction with a test or demonstration of a space transportation vehicle owned by the Federal Government; or

(7) a payload can make use of the available cargo space on a Space Shuttle mission as a secondary payload, and such payload is consistent with the requirements of research, development, demonstration, scientific, commercial, and educational programs authorized by the Administrator.

Nothing in this section shall prevent the Administrator from planning or negotiating agreements with foreign entities for the launch of Federal Government payloads for international collaborative efforts relating to science and technology.

(c) **DELAYED EFFECT.**—Subsection (a) shall not apply to space transportation services and space transportation vehicles acquired or owned by the Federal Government before the date of the enactment of this Act, or with respect to which a contract for such acquisition or ownership has been entered into before such date.

(d) **HISTORICAL PURPOSES.**—This section shall not be construed to prohibit the Federal Government from acquiring, owning, or maintaining space transportation vehicles solely for historical display purposes.

**SEC. 202. ACQUISITION OF COMMERCIAL SPACE TRANSPORTATION SERVICES.** 42 USC 14732.

(a) **TREATMENT OF COMMERCIAL SPACE TRANSPORTATION SERVICES AS COMMERCIAL ITEM UNDER ACQUISITION LAWS.**—Acquisitions of space transportation services by the Federal Government shall be carried out in accordance with applicable acquisition laws and regulations (including chapters 137 and 140 of title 10, United States Code). For purposes of such law and regulations, space transportation services shall be considered to be a commercial item.

(b) **SAFETY STANDARDS.**—Nothing in this section shall be construed to prohibit the Federal Government from requiring compliance with applicable safety standards.

**SEC. 203. LAUNCH SERVICES PURCHASE ACT OF 1990 AMENDMENTS.**

The Launch Services Purchase Act of 1990 (42 U.S.C. 2465b et seq.) is amended—

(1) by striking section 202;

42 USC 2465b.

(2) in section 203—

42 USC 2465c.

(A) by striking paragraphs (1) and (2); and

(B) by redesignating paragraphs (3) and (4) as paragraphs (1) and (2), respectively;

(3) by striking sections 204 and 205; and

42 USC 2465d,

(4) in section 206—

2465e.

42 USC 2465f.



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(A) by striking “(a) COMMERCIAL PAYLOADS ON THE SPACE SHUTTLE.—”; and  
(B) by striking subsection (b).

42 USC 14733.

**SEC. 204. SHUTTLE PRIVATIZATION.**

(a) **POLICY AND PREPARATION.**—The Administrator shall prepare for an orderly transition from the Federal operation, or Federal management of contracted operation, of space transportation systems to the Federal purchase of commercial space transportation services for all nonemergency space transportation requirements for transportation to and from Earth orbit, including human, cargo, and mixed payloads. In those preparations, the Administrator shall take into account the need for short-term economies, as well as the goal of restoring the National Aeronautics and Space Administration's research focus and its mandate to promote the fullest possible commercial use of space. As part of those preparations, the Administrator shall plan for the potential privatization of the Space Shuttle program. Such plan shall keep safety and cost effectiveness as high priorities. Nothing in this section shall prohibit the National Aeronautics and Space Administration from studying, designing, developing, or funding upgrades or modifications essential to the safe and economical operation of the Space Shuttle fleet.

(b) **FEASIBILITY STUDY.**—The Administrator shall conduct a study of the feasibility of implementing the recommendation of the Independent Shuttle Management Review Team that the National Aeronautics and Space Administration transition toward the privatization of the Space Shuttle. The study shall identify, discuss, and, where possible, present options for resolving the major policy and legal issues that must be addressed before the Space Shuttle is privatized, including—

(1) whether the Federal Government or the Space Shuttle contractor should own the Space Shuttle orbiters and ground facilities;

(2) whether the Federal Government should indemnify the contractor for any third party liability arising from Space Shuttle operations, and, if so, under what terms and conditions;

(3) whether payloads other than National Aeronautics and Space Administration payloads should be allowed to be launched on the Space Shuttle, how missions will be prioritized, and who will decide which mission flies and when;

(4) whether commercial payloads should be allowed to be launched on the Space Shuttle and whether any classes of payloads should be made ineligible for launch consideration;

(5) whether National Aeronautics and Space Administration and other Federal Government payloads should have priority over non-Federal payloads in the Space Shuttle launch assignments, and what policies should be developed to prioritize among payloads generally;

(6) whether the public interest requires that certain Space Shuttle functions continue to be performed by the Federal Government; and

(7) how much cost savings, if any, will be generated by privatization of the Space Shuttle.

(c) **REPORT TO CONGRESS.**—Within 60 days after the date of the enactment of this Act, the National Aeronautics and Space Administration shall complete the study required under subsection

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(b) and shall submit a report on the study to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science of the House of Representatives.

**SEC. 205. USE OF EXCESS INTERCONTINENTAL BALLISTIC MISSILES.** 42 USC 14734.

(a) **IN GENERAL.**—The Federal Government shall not—

(1) convert any missile described in subsection (c) to a space transportation vehicle configuration; or

(2) transfer ownership of any such missile to another person, except as provided in subsection (b).

(b) **AUTHORIZED FEDERAL USES.**—(1) A missile described in subsection (c) may be converted for use as a space transportation vehicle by the Federal Government if, except as provided in paragraph (2) and at least 30 days before such conversion, the agency seeking to use the missile as a space transportation vehicle transmits to the Committee on National Security and the Committee on Science of the House of Representatives, and to the Committee on Armed Services and the Committee on Commerce, Science, and Transportation of the Senate, a certification that the use of such missile—

(A) would result in cost savings to the Federal Government when compared to the cost of acquiring space transportation services from United States commercial providers;

(B) meets all mission requirements of the agency, including performance, schedule, and risk requirements;

(C) is consistent with international obligations of the United States; and

(D) is approved by the Secretary of Defense or his designee.

(2) The requirement under paragraph (1) that the certification described in that paragraph must be transmitted at least 30 days before conversion of the missile shall not apply if the Secretary of Defense determines that compliance with that requirement would be inconsistent with meeting immediate national security requirements.

(c) **MISSILES REFERRED TO.**—The missiles referred to in this section are missiles owned by the United States that—

(1) were formerly used by the Department of Defense for national defense purposes as intercontinental ballistic missiles; and

(2) have been declared excess to United States national defense needs and are in compliance with international obligations of the United States.

**SEC. 206. NATIONAL LAUNCH CAPABILITY STUDY.**

42 USC 14735.

(a) **FINDINGS.**—Congress finds that a robust satellite and launch industry in the United States serves the interest of the United States by—

(1) contributing to the economy of the United States;

(2) strengthening employment, technological, and scientific interests of the United States; and

(3) serving the foreign policy and national security interests of the United States.

(b) **DEFINITIONS.**—In this section:

(1) **SECRETARY.**—The term “Secretary” means the Secretary of Defense.

(2) **TOTAL POTENTIAL NATIONAL MISSION MODEL.**—The term “total potential national mission model” means a model that—

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(A) is determined by the Secretary, in consultation with the Administrator, to assess the total potential space missions to be conducted in the United States during a specified period of time; and

(B) includes all launches in the United States (including launches conducted on or off a Federal range).

(c) REPORT.—

Deadline.

(1) IN GENERAL.—Not later than 180 days after the date of enactment of this Act, the Secretary shall, in consultation with the Administrator and appropriate representatives of the satellite and launch industry and the governments of States and political subdivisions thereof—

(A) prepare a report that meets the requirements of this subsection; and

(B) submit that report to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science of the House of Representatives.

(2) REQUIREMENTS FOR REPORT.—The report prepared under this subsection shall—

(A) identify the total potential national mission model for the period beginning on the date of the report and ending on December 31, 2007;

(B) identify the resources that are necessary or available to carry out the total potential national mission model described in subparagraph (A), including—

(i) launch property and services of the Department of Defense, the National Aeronautics and Space Administration, and non-Federal facilities; and

(ii) the ability to support commercial launch-on-demand on short notification, taking into account Federal requirements, at launch sites or test ranges in the United States;

(C) identify each deficiency in the resources referred to in subparagraph (B); and

(D) with respect to the deficiencies identified under subparagraph (C), include estimates of the level of funding necessary to address those deficiencies for the period described in subparagraph (A).

(d) RECOMMENDATIONS.—Based on the reports under subsection (c), the Secretary, after consultation with the Secretary of Transportation, the Secretary of Commerce, and representatives from interested private sector entities, States, and local governments, shall—

(1) identify opportunities for investment by non-Federal entities (including States and political subdivisions thereof and private sector entities) to assist the Federal Government in providing launch capabilities for the commercial space industry in the United States;

(2) identify one or more methods by which, if sufficient resources referred to in subsection (c)(2)(D) are not available to the Department of Defense and the National Aeronautics and Space Administration, the control of the launch property and launch services of the Department of Defense and the National Aeronautics and Space Administration may be transferred from the Department of Defense and the National Aeronautics and Space Administration to—

(A) one or more other Federal agencies;

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- (B) one or more States (or subdivisions thereof);
- (C) one or more private sector entities; or
- (D) any combination of the entities described in subparagraphs (A) through (C); and
- (3) identify the technical, structural, and legal impediments associated with making launch sites or test ranges in the United States viable and competitive.

Approved October 28, 1998.

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**LEGISLATIVE HISTORY—H.R. 1702:****HOUSE REPORTS:** No. 105-347 (Comm. on Science).**SENATE REPORTS:** No. 105-198 (Comm. on Commerce, Science, and Transportation).**CONGRESSIONAL RECORD:**

Vol. 143 (1997): Nov. 4, considered and passed House.

Vol. 144 (1998): July 30, considered and passed Senate, amended.

Oct. 5, House concurred in Senate amendment with an amendment.

Oct. 8, Senate concurred in House amendment.



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