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CONTENTS

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ANNOUNCEMENT

The *Journal of Space Law* is pleased to announce that Professor Karl-Heinz Böckstiegel has become a member of its Editorial Advisory Board. In addition to his current post as Ordinary Professor for International Business Law and Director of the Institute of Air and Space Law at Cologne University, he is editor of the *Zeitschrift für Luft und Weltraumrecht*. He has lectured in many countries and also served as a chairman and member of a number of international arbitration panels. Professor Böckstiegel has published numerous books and articles in both German and English relating to space and international law. The *Journal* cordially welcomes this fine lawyer, author, and professor to membership on the Board.

ARBITRATION AND ADJUDICATION REGARDING ACTIVITIES IN OUTER SPACE

*Karl-Heinz Böckstiegel**

In a recent paper,[1] Eilene Galloway, drawing from her experience with the United Nations Committee on the Peaceful Uses of Outer Space, reported how the use of consensus as a method for decision-making has proved remarkably successful in bringing about legal agreement for international space cooperation. She correctly points out the high degree of achievement demonstrated in the drafting of four space treaties which have been ratified by many nations. The consensus method described in the paper may indeed be a useful procedure for U.N. committees in other fields as well. One may, however, have to pour some water into the wine.

When comparing the consensus method to other methods of settling disputes regarding activities in outer space, these factors should be considered. First, there are good reasons for the view that some important parts of the most important space treaties, *e.g.*, the Outer Space Treaty[2] and the Liability Convention[3], found the consensus of the States concerned only because at that time many States did not realize the full extent of their own interests in that field. Perhaps today agreement even on the Outer Space Treaty might not be possible. Secondly, the situation has changed due to the progress of space activities from the exploratory stage to the stage of practical use of space. During the exploratory stage differing opinions in space law meant only a dispute on principles, and meant relatively little as far as collision of practical interests and of concrete application of such rules were concerned. Disputes, even between States, were of a more academic character during this exploratory stage. In fact, the first treaties on space law, especially the Outer Space Treaty, could be agreed upon and obtain relatively wide ratification because the States concerned were not under the pressure of the many obvious interests involved. The development and the practice of States in recent years

*Professor and Director of the Institute of Air and Space Law, Cologne University, Germany, Editor of *Zeitschrift für Luft und Weltraumrecht.* This article is based on a paper presented to the International Space Law Colloquium of the International Institute of Space Law, Prague, September 1977, but has been changed and amended in order to evaluate additional new material. The views expressed herein are those of the author and are not necessarily connected with any organization of which he is a member.

[1]E. Galloway, Consensus as a Basis for International Space Cooperation (Sept. 1977) (unpublished paper presented at the International Space Law Colloquium of the International Institute of Space Law, Prague; to be published with the proceedings).

[2]Treaty on Principles Governing the Activities of States in The Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, January 27, 1967, [1967] 18 U.S.T. 2410, T.I.A.S. No. 6347, 610 U.N.T.S. 205 (effective Oct. 10, 1967) [hereinafter cited as Outer Space Treaty].

[3]The Convention on International Liability for Damage Caused by Space Objects, March 29, 1972, [1973] 24 U.S.T. 2389, T.I.A.S. No. 7762 (effective Oct. 9, 1973) [hereinafter cited as Liability Convention].

indicates that States are now much more concerned about the important political and economical interests involved in many aspects of space law. Since these interests differ and often are in conflict between the various States and groups of States involved, it has become more difficult to find wide agreement on many aspects of space law. Thirdly, one can normally approach a difference of opinions between States with much more ease and patience in the international legislative process where the goal is to formulate future international law by way of convention, rather than in a situation where an actual conflict between States has to be solved *de lege lata.* Such conflicts must realistically be expected with the growing use of space and with the increasing number of States active, or at least interested, in such uses. The discussions on geostationary orbit, remote sensing, and direct broadcasting illustrate possible areas of such conflicts. The space shuttle illustrates how new States, in addition to the States presently active in space, may participate in space activities even without their own means of transportation. Due to this development the situation will evolve more and more into one where disputes on various aspects of space law can no longer be left open allowing each State to persist in its own view and act accordingly. These conflicting views and uses of outer space are incompatible, not only in theory but also in practice. Space law, therefore, is and will continue to be facing a demand to offer techniques for the settlement of disputes. Realizing that this demand exists certainly does not mean that it will be easy to satisfy. Space lawyers would not be fulfilling their responsibility, however, if they did not, with knowledge of all foreseeable difficulties, undertake efforts to assist in tackling this problem.

Unlike national law, space law shares with other fields of international law the weakness that it cannot automatically be enforced by going to court and receiving a judgment against the party violating its rules. It can, however, share the procedural know-how developed in other fields of international law to deal with this weakness. In international law a number of methods have been developed for the settlement of international disputes[4] including principles of international law concerning friendly relations and cooperation, inquiry, mediation, good offices, conciliation, arbitration, resort to regional agencies or arrangements, and adjudication by permanent international courts. This article will concentrate on the most difficult ones, the only ones assuring a decision: namely, those methods which allow a decision even if one of the parties in dispute does not agree with that decision. The resort to regional agencies or arrangements may fulfill this requirement and is relevant, for instance, within the scope of the European Space Agency. However, because itself, as well as its concept on the basis of the Outer Space Treaty, is of a universal character, a closer examination of regional solutions shall not be included here, although some of them present advanced models for settlement of international disputes[5]. For a universal application, this

[4]For most of these methods, *see* Charter of the United Nations, June 26, 1945, art. 33, 59 Stat. 1031, T.S. No. 993, 1 U.N.T.S. xvi. *See also* G. A. Res. 2625, U.N. Doc. A/8082 (1970).

[5] *See* European Convention on Pacific Settlement of Disputes, April 29, 1957, 320 U.N.T.S. 243 (arbitration is only compulsory for some of the States that ratified the convention, other States made reservations; *see* Bürgerliches Gesetzblatt [hereinafter cited as BGBL] 1961 II 1027; 1967 II 2371; 1970 II 666);

method would have to be viewed in conjunction with the question of whether there should be an international world space agency[6]. Of global importance, however, are the two other methods that assure a binding decision on the dispute even against the disagreement of one of the parties—arbitration and adjudication by permanent international courts. This paper will therefore concentrate on these two methods and their perspectives for the settlement of disputes regarding activities in outer space.

I. DIFFERENCES BETWEEN INTERNATIONAL ARBITRATIONS AND INTERNATIONAL ADJUDICATIONS

There has always been, and still is, a wide divergence in opinion as to the differences between international arbitration and international adjudication[7]. Of the suggested criteria for differentiation between the two, the most important are the choice of the individual arbitrator by the parties[8], the existence in adjudication of permanent bodies not having to be reconstituted for every dispute submitted[9], and the assumption that arbitrators decide on the basis of equity rather than on the basis of law[10]. This is not an academic discussion only. States having had positive experiences with individual arbitral tribunals established for special cases seem to be ready to accept the establishment of institutions under the term *arbitration* which do not fit into the traditional concept of arbitration. The States concerned do not wish to associate with the term *court,* since that term has heavy political connotations, especially with regard to sovereignty. Neither legal writing nor State practice permit a safe differentiation

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Bogota Pact, April 30, 1948, North and South America, American Treaty of Pacific Settlement, 30 U.N.T.S. 55; Pact of the League of Arab States, March 22, 1945, art. V, 70 U.N.T.S. 237; Protocol of the Commission of Mediation, Conciliation and Arbitration, July 21, 1964, (in implementation of art. XIV, Charter of the OAU for Africa, May 25, 1963). *See also* Boutros-Ghali, L'organisation de l'unité africaine 120 (1969); Miehsler, The European Convention for the Peaceful Settlement of Disputes, Um Recht and Freiheit, Festschrift für von der Heydte 335 (1977).

[6] *See* Diederiks-Verschoor, Some Observations on the International Civil Aviation Organization and an International Space Agency; Herczeg, Legal Problems of International Agencies; Kamenetskaya, Cooperation among States in the Exploration and Use of Outer Space and International Organizations; Marcoff, The Space Agency Project and the Bogota Declaration (Sept. 1977) (all unpublished papers presented to the Space Law Colloquium of the International Institute of Space Law, Prague; to be published with the proceedings).

[7] For the range of opinions, *see* Loder, *La différence entre l'arbitrage international et la justice internationale* (1923); Sohn, ILA, Report, 52nd Conference 326.

[8] Hedges; 7 BYIL 119 (1926); Ray, *Commentaire du Pacte de la Société des Nations* 396 (1930).

[9] Schlochauer, in Strupp-Schlochauer, Wörterbuch des Völkerrechts, Schiedsgerichtsbarkeit, internationale, A1, B1; Stone, *Legal Controls of International Conflict* 107 (2nd ed. 1959).

[10] This has been suggested in different ways. *See* U.N. Doc. A/2899; Report of the International Law Commission, U.N. Doc. A/2163, *reprinted in* [1952] 4 Y.B. Int'l L. Comm'n 57; Draft Commentary on Arbitral Procedure, U.N. Secretariat, U.N. Doc. A/CN.4/L.40, at 8.

between international adjudication and arbitration. The most convincing opinion appears to be that of those[11] who consider such a differentiation neither necessary nor practical. No international *court* is fully comparable to the normal concept of national courts, if one looks at the composition of the deciding body. Therefore, much can be said for considering them all as institutionalized tribunals of international arbitration. If one is hesitant to go that far, then all techniques of deciding international disputes by non-partisan third parties, other than the International Court of Justice, the European Court of Justice and the European Court of Human Rights, should be termed arbitration.[12]

II. LACK OF SUFFICIENT PROCEDURES IN POSITIVE SPACE LAW

The existing treaty law on activities in space contains regulations on arbitration and adjudication only in limited areas; otherwise, no rules on the compulsory settlement of disputes are mentioned. One must face the fact that the fundamental charter of space law, the Outer Space Treaty, does not contain any provision, compulsory or elective, on the settlement of disputes. It only provides, with regard to substantive law, for the relatively vague principles of "co-operation" and "due regard to the corresponding interest of all other States"; and, with regard to procedural law, for consultation in cases where harmful interference might be expected.[13]

The Liability Convention at least contains a solution similar to that offered by the Convention on the Law of Treaties; namely, conciliation, which is seen as the only sure technique. If no settlement of a claim is achieved through diplomatic negotiations, the parties concerned shall establish a Claims Commission at the request of either party.[14] The information of the Claims Commission and the respective procedure is provided for in a way very similar to the methods used for the establishment of arbitral tribunals.[15] There is specific provision for the competence of a third party, *viz.*, the Secretary-General of the United Nations, to appoint its chairman when the parties cannot agree within a given period; and the chairman is to act as a single member Claims Commission if one party does not appoint its member of the Commission.[16] Substance and form of the decision are also comparable to those of an arbitral award. The Commission shall

[11]Hudson, *International Tribunals* 100 (1944); Sohn, ILA, Report, 52nd Conference 326; Wengler, *Völkerrecht* 714, 715 n. 1 (1964).

[12]Oppenheim/Lauterpacht, *International Law* 22, (7th ed. 1952).

[13]Art. IX, Outer Space Treaty, *supra* note 2.

[14]Art XIV, Liability Convention, *supra* note 3.

[15] *Id.* art. XV to XVII.

[16] *Id.*

decide the merits of the claim for compensation and determine the amount of compensation payable, if any.[17] This decision is to be made on the basis of "international law and the principles of justice and equity."[18] With regard to the form of the decision, the Commission shall state its reasons.[19] The crucial weakness of this settlement technique is the provision which states: "The decision of the Commission shall be final and binding if the parties have so agreed; otherwise the Commission shall render a final and recommendatory award which the parties shall consider in good faith."[20] The binding force of the decision is therefore dependent on the agreement of both parties. If both parties come to such an agreement before the proceedings start, one might consider the Commission to act as an ad hoc arbitration tribunal. But if such agreement is reached only after the Commission has expressed its opinion, or if no agreement is reached at all, then the second alternative of the above quoted provision is applicable and the procedure will have to be considered one of conciliation. The settlement technique ensured in the Liability Convention is, consequently, only that of conciliation.

A compulsory procedure leading to an actual decision of the dispute by arbitration (with one specific limitation which will be discussed later) is contained in the Convention for the establishment of a European Space Agency.[21] The ESA Convention expressly says that every dispute among member States or between a member State and ESA can be submitted by one of the parties to an arbitral tribunal.[22] The difference between the ESA Convention and the Liability Convention becomes evident in the provision of the former which states that the decision is final and binding for the parties, is not subject to appeal, and has to be executed by the parties without delay.[23] This duty to execute the arbitral award is in addition to the pressure of the provision which authorizes the Council to exclude a member State from the organization if that member State has not fulfilled its obligations under the treaty.[24] The one limitation to the arbitration procedure in the ESA Convention is in cases in which one party does not nominate its arbitrator or the two arbitrators cannot agree on the third arbitrator.[25] The

[17] *Id.* art. XVIII.

[18] *Id.* art. XII; art. XIX, para. 1.

[19] *Id.* art. XIX, para. 2.

[20] *Id.*

[21] Convention for the Establishment of a European Space Agency, May 30, 1975. For text of the Convention, *see* 14 Int'l Leg. Mat. 864 (1975).

[22] *Id.* art. XVII.

[23] *Id.* art. XVII, para. 6.

[24] *Id.* art. XVIII.

[25] *Id.* art. XVII, paras. 2, 3.

convention says that additional rules of procedure will be adopted by the Council when passed by a two-thirds majority.[26] So far, such additional rules have not been formulated by the ESA Council.[27] Theoretically it would therefore be possible, on the basis of the ESA Convention, for a member State which is not receiving the support of a two-thirds majority in the Council to be stopped in its application for arbitration by the Council not providing the necessary rules of nomination for the remaining arbitrators.

The second case of compulsory settlement, in at least a limited area of space law, is found in the Intelsat Agreement of August 20, 1971.[28] It also provides for arbitration for the settlement of disputes.[29] It is important to note, however, that the agreement of the parties concerned is required as a condition for such arbitration[30] and there is no provision for obligatory arbitration. Further, it should be noted that this agreement expressly calls, four times, for arbitration only with regard to *legal* disputes. Thereby it picks up the often discussed differentiation between legal and nonlegal, especially political, disputes.[31] The ESA clause does not contain any differentiation to that effect but applies to *all* disputes, while the Liability Convention only deals with *claims*.[32]

III. ARBITRATION AND ADJUDICATION PROVISIONS IN INTERNATIONAL AIR LAW

Since space law lacks appropriate compulsory procedures, and in view of the interrelations and similarities between space law and air law, those techniques for compulsory settlement of disputes found in international air law are of specific interest and relevance for possible further development of space law.

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[26] *Id.* art. XVII, para. 2.

[27] Information given by ESA Secretariat as of October 1977.

[28] Agreement Relating to the International Telecommunications Satellite Organization (INTELSAT), T.I.A.S. No. 7532 (1973). For text of the agreement, *see* 10 Int'l Leg. Mat. 909 (1971).

[29] *Id.* art. XVIII. Further details on the kind and procedure of arbitration are contained in Annex C to the Agreement.

[30] *Id.* art. XVIII, paras. a,b,c.

[31] *See* Berber, *Lehrbuch des Völkerrechts* 30 (2nd ed. 1977); *See also* Italian-Norwegian Arbitration Treaty, June 17, 1929, art. XVIII, for a formula which might be flexible enough not to leave any gaps: "If, in the opinion of the Court, the dispute is not of legal character, the parties agree that it shall be settled *ex aequo et bono.*"
The problem that States may not be ready to submit vital political issues in advance to adjudication or arbitration was clearly presented by Canadian representatives, *see* 8 External Affairs 22 at 252 (1970); 9 Int'l Leg. Mat. 600 (1970); Canadian Y.B. Int'l Law 285 (1971).

[32] Art. VIII, Liability Convention, *supra* note 3.

In multilateral air treaty law the most important procedure is the relatively complicated system for the settlement of disputes in the framework of the International Civil Aviation Organization.[33] Although the details of this system[34] cannot be presented here, one should note that there are two possible stages dealing with the dispute. In the first stage any member State may apply to the ICAO Council, and the Council, in the procedure described in detail in the above mentioned Rules,[35] will render its decision. In the case of a mere complaint, appropriate findings and recommendations will be made. A party may then open a second stage of settlement by appealing the decision of the Council. Such appeal may be brought before either an ad hoc arbitral tribunal or the International Court of Justice. If any one of the parties has not accepted the Statute of the International Court of Justice, the appeal will automatically be decided by arbitration. For the arbitration there are again two alternatives. Either the parties concerned agree on the arbitral tribunal, or, if they cannot agree, the appeal will automatically be decided by a three member arbitral tribunal to which the president of the Council shall name an arbitrator, if a party fails to do so, or the umpire, if the arbitrators cannot agree on an umpire. The decisions rendered on the appeal either by the Permanent Court of International Justice or by the arbitral tribunal are final and binding for the parties. The ICAO system thus insures the final settlement of disputes by arbitration, unless the parties prefer to seek final settlement by the International Court of Justice. There are further details of this system which could be useful in comparable situations of space law as well. One such detail is that Council decisions on the operation of an international airline shall remain in effect unless reversed on appeal.[36] This important rule clarifies the situation during the perhaps long period until the appeal is decided. Another such detail is the additional force given to decisions by a rule[37] under which each contracting State undertakes to bar the operation of an airline of a contracting State through the airspace above its territory if the Council has decided that the airline concerned is not conforming to a final decision rendered either by the International Court of Justice or an arbitral tribunal. Generally speaking, the ICAO system presents a well developed model for the settlement of disputes to which one can look for possible solutions in the further development of space law.[38] Thus one has to

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[33] *See* Convention on International Civil Aviation, *opened for signature* Dec. 7, 1944, art. 84-88, 61 Stat. 1180, T.I.A.S. No. 1591, 15 U.N.T.S. 295; Interim Agreement on International Civil Aviation, *opened for signature* Dec. 7, 1944, art. II, sec. 2, 59 Stat. 1516, E.A.S. No. 469, 171 U.N.T.S. 345; International Air Transport Agreement, *opened for signature* Dec. 7, 1944, art. IV, sec. 3, 59 Stat. 1701, E.A.S. No. 488, 171 U.N.T.S. 387.

[34] See T. Buergenthal, *Law Making in the ICAO* 123, 166 (1969).

[35] Rules for the Settlement of Differences, *supra* note 33.

[36] Art. 86, Chicago Convention, *supra* note 33.

[37] *Id.* art. 87.

[38] This is true not only in the positive, but also in the negative sense. For example, points needing further clarification led to the dispute between India and Pakistan in which an appeal was made to the ICJ for the first

realize that much of this model could only be realized due to the existence and advanced development of ICAO as an international organization, and that similar solutions in space law might well depend on whether or not there will be and should be a world international space agency.[39]

Even more instructive material on arbitration or adjudication procedures can be found in the bilateral air transport agreements. Although it is not possible here to present a detailed survey of respective provisions in the great number of those agreements,[40] it seems important to note in this context that the accepted practice of States in the majority of these bilateral air transport agreements is to include arbitration clauses. The great majority of these agreements provide for compulsory arbitration.[41] Most of them, especially those concluded by the United States, Western European and North African states, phrase the arbitration clauses in such a way as to guarantee the conduct of proceedings.[42] Eastern European socialist states appear to be the only states that have concluded a greater number of air transport agreements which do not provide for arbitration, but only for negotiations or mixed commissions as the technique to settle disputes.[43] For the evaluation of arbitration clauses in bilateral air transport agreements, it is of relevance to note that most of these agreements contain termination clauses giving each party the right to denounce the agreement. The denunciation normally takes effect after a certain period; for example, twelve months after such denunciation.[44]

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time in this context. *See also* ICJ, Reports of Judgments, Advisory Opinions and Orders 45 (1972); Bockstiegel, Streitentscheidungszustandigkeiten in der Internationalen Zivilluftfahrtorganisation (ICAO), Festschrift Jahrreiss 5 (1974).

[39]In that context see Diederiks-Verschoor, Some Observations on the International Civil Aviation Organization and an International Space Agency (Sept. 1977) (unpublished paper presented at the International Space Law Colloquium of the International Institute of Space Law, Prague; to be published with the proceedings).

[40] *See* A Survey of Treaty Provisions for the Pacific Settlement of International Disputes U.N. Doc. 66 V.5 at 333, 361; Buergenthal, Law Making in the ICAO 174 (1969); Handbook of Administrative Clauses in Bilateral Air Transport Agreements, ICAO Circular 63-AT/6, at 72.

[41]For agreements not making arbitration compulsory see those between Federal Republic of Germany-Mexico, BGBL. 1969 II, 194; Czechoslovakia-Morocco, 497 U.N.T.S. 275; Ghana-Rumania, 467 U.N.T.S. 443; Guinea-Sweden 465 U.N.T.S. 235.

[42] *See, e.g.,* U.S.A.-Egypt, 531 U.N.T.S. 229; Federal Republic of Germany with Japan, 465 U.N.T.S. 173, with Greece, 544 U.N.T.S. 193, with Ecuador, 498 U.N.T.S. 199, with Denmark and Ivory Coast, 595 U.N.T.S. 313, with Pakistan, 465 U.N.T.S. 41; United Kingdom-Czechoslovakia, 374 U.N.T.S. 207; Switzerland-Ghana, 559 U.N.T.S. 193; Denmark-Yugoslavia 511 U.N.T.S. 241; Japan- Kuwait, 498 U.N.T.S. 235; Algeria-France, 563 U.N.T.S. 263; Morocco-Egypt, 563 U.N.T.S. 121.

[43] *See, e.g.,* U.S.S.R.-Ghana, 498 U.N.T.S. 41; U.S.S.R.-Italy, Gaz. Uff. 1967, No. 231, 5135; Czechoslovakia-Afghanistan, 497 U.N.T.S. 129; Poland-Greece, 538 U.N.T.S. 155; Poland-Netherlands, 497 U.N.T.S. 189; Rumania-Greece, 485 U.N.T.S. 17.

[44] *See* ICAO Circular 63-AT/6, at 93.

Although such a termination would normally not change the binding effect of arbitration proceedings started during the validity of the agreement (details would depend on the interpretation of the individual agreement), a State party disliking the introduction of the arbitration proceedings as such, or disliking the arbitral award rendered, could at least exclude any arbitration proceedings in the future by terminating and perhaps renegotiating the agreement. The bilateral air transport agreements provide evidence that even if States are not ready to submit their international disputes to arbitration or adjudication, they may nevertheless be ready to do so with regard to specific areas.[45]

IV. THE MOST RECENT EXPERIENCES OF THE LAW OF THE SEA CONFERENCES

Experiences regarding compulsory procedures for the settlement of disputes in the law of the sea can be considered as being of specific relevance in our context. First, the law of the sea generally presents many similarities, in fact and in law, to space law. Second, the law of the sea is the one field in which we have the most recent experience in what States may or may not accept as procedures for the settlement of disputes.

Past instruments did not attain much acceptance in State practice. The Optional Protocol Concerning the Compulsory Settlement of Disputes, April 29, 1958, has been open for signature by all States becoming parties to any convention on the law of the sea adopted by the United Nations Conference on the Law of the Sea. It provides for the compulsory jurisdiction of the International Court of Justice, unless the parties concerned agree to submit their dispute to an arbitral tribunal.[46]

During the latest conferences on the law of the sea, which took place in New York in the summer of 1977, compulsory procedures for the settlement of disputes became a highly controversial and very complicated issue. Although the experience of the preceding conferences and their respective results present quite instructive material,[47] results of the last conference are of the greatest interest in this context and therefore will be briefly considered. For a general indication of State practice, as it can be considered in the context of future developments of space law, one seems justified in disregarding the informal and nonbinding character of the Informal Composite Negotiating Text

[45]For example, the United Arab Republic refused the Swiss proposal to conclude a general arbitration and conciliation treaty, but accepted arbitration in the air transport agreement between both States.

[46]BGBL. 1972 II 1102 f.

[47] *See Informal Single Negotiating Text on Settlement of Disputes,* 15 Int'l Leg. Mat. 61 (1976); Adede, *Law of the Sea: The Scope of the Third Party Compulsory Procedures for Settlement of Disputes,* 71 Am. J. Int'l L. 305 (1977); Gamble, *The Law of the Sea Conference* (New York, March-May 1976); *Dispute Settlement in Perspective,* 9 Vand. J. Transn'l L. 323 (1976); Hull, *Much Ado About Something - Dispute Settlement and the Law of the Sea Convention,* 11 Int'l Law. 365 (1977).

(ICNT)[48] which the president of the conference, under his own responsibility, issued after the end of the last conference in August 1977. Although the final convention may differ from the ICNT, the latter's factual importance for the final and binding drafting of the convention should not be underestimated.

The general provisions on the settlement of disputes[49] give a priority to any settlement procedure chosen by agreement of the parties to a dispute[50] or any "final and binding procedure" under general, regional or special agreements.[51] Otherwise, signing State parties may, by written declaration, choose any one of the following means for the settlement of disputes:

a) the Law of Sea Tribunal constituted in accordance with annex V;
b) the International Court of Justice;
c) an arbitral tribunal constituted in accordance with annex VI;
d) a special arbitral tribunal constituted in accordance with annex VII.[52]

A State which is a party to a dispute not covered by a declaration shall be deemed to have accepted arbitration.[53] If the parties to the dispute have not accepted the same procedure for the settlement of such dispute, it may be submitted only to arbitration, in accordance with annex VI, unless the parties otherwise agree.[54] Consequently, arbitration is the compulsory subsidiary settlement procedure of the ICNT. It is clear that any decision rendered shall be final and shall be complied with by all the parties to the dispute.[55] There are limitations on the applicability of the described rules in certain cases.[56] Disputes relating to the exercise, by a coastal State, of sovereign rights or

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[48]The text was unpublished at the time of preparation of this manuscript. The author's comments are made on the basis of the text as it was sent to the national delegations to the conference in August 1977. It was made available to the author by Prof. Jaenicke, who was a member of the German delegation.

[49]Informal Composite Negotiating Text, arts. 279-97.

[50] *Id.* art. 280.

[51] *Id.* art. 282.

[52] *Id.* art. 287.

[53] *Id.* art. 287, para. 3, annex VI.

[54] *Id.* art. 287, para. 5.

[55] *Id.* art. 295.

[56] *Id.* art. 296.

jurisdiction shall only be subject to these procedures under certain conditions[57] and the scope of jurisdiction of the court or tribunal in such cases, described in more detail,[58] includes the freedom of overflight.[59] Furthermore, optional exceptions may be declared by signing States with respect to disputes concerning military and similar activities[60] and concerning sea boundary delimitations. The latter exception, however, is only possible provided the State "accepts a regional or other third party procedure entailing a binding decision."[61] Finally, the ICNT contains special rules for the settlement of disputes regarding the international sea bed,[62] providing for the jurisdiction of the Sea-bed Disputes Chamber of the Law of the Sea Tribunal[63] or for arbitration.[64] Claims of nationals of a State party are admissible against the International Sea-bed Authority[65] but not against other State parties; however, State parties may present claims against the nationals of other State parties.[66] State parties have the right to intervene in the proceedings to which their nationals are a party.[67] The Sea-bed Disputes Chamber of the Law of the Sea Tribunal shall not pronounce itself on the question of whether any rules, regulations or procedures adopted by the Assembly or the Council are in conformity with the provisions of the Convention on the Law of the Sea.[68] This outline of the major respective provisions in the ICNT, which is not exhaustive, may be sufficient to indicate that States are on the way toward reaching a highly flexible system of adjudication and arbitration. In this system States have a relatively wide choice regarding the procedure of settlement but are bound to accept at least one binding procedure. The ICNT therefore provides for compulsory adjudication or arbitration. This text must be considered as an important indication for the possible future development of space law, since exploration and use of outer space presents many similarities to such activities in the open sea.

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[57] *Id.* art. 296, para. 1.

[58] *Id.* art. 296, para. 2.

[59] *Id.* art. 296, para. 2 (a).

[60] *Id.* art. 297, para. 1 (b) and (c).

[61] *Id.* art. 297, para. 1 (a).

[62] *Id.* arts. 187-92.

[63] *Id.* art. 187.

[64] *Id.* art. 188.

[65] *Id.* art. 187, para. 2 (b).

[66] *Id.* art. 189, para. 1 (ii).

[67] *Id.* art. 192.

[68] *Id.* art. 191.

V. TREATIES ON INTERNATIONAL COMMUNICATION

Another field that presents certain similarities to space activities as they exist today, and even more as they will exist in the future, is the field of international communication. Communication can only function on the basis of cooperation; therefore, there is a specific factual pressure from the subject matter involved in that field to solve disputes quickly and finally. A very short glance at some treaties in this field may thus be useful.

Of special interest in this context is the International Telecommunications Convention[69] which provides for compulsory arbitration, the awards of which are final and binding for the parties concerned. Special characteristics of this arbitration are that not only persons but also administrations and governments can act as arbitrators; and if two arbitrators cannot agree on a third arbitrator, each one may nominate a third arbitrator and the Secretary General of the ITU will then choose one of the nominees by drawing a lot. This convention is but one of the several multilateral conventions in the field of international communications that provides for arbitration in case of disputes. Others, besides those mentioned in the fields of space law and air law, are the conventions concerning the Universal Postal Union,[70] the International Railway Convention,[71] the Convention concerning the border traffic of motor vehicles[72] and the Danube Convention of 1948.[73]

VI. COMPULSORY PROCEDURES OF GENERAL APPLICATION

There have been many attempts to come to generally applicable procedures of adjudication or arbitration for the compulsory settlement of international disputes.[74] If one wants to judge the prospects of eventual methods for the settlement of space law disputes, one should also give due regard to this respective experience and State practice. The more the use of space, in general, and space law, in particular, loses its character of being something special in comparison to other fields of international relations and international law, the more the interests and problems involved will

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[69]BGBL. 1968 II 931.

[70]BGBL. 1971 II 245.

[71]CIM and CIV of February 25th, 1961; BGBL. 1964 II 1520 and 1898.

[72]A Survey of Treaty Provisions for the Pacific Settlement of International Disputes, U.N. Doc. 66. V. 5 at 333.

[73]Convention on the Regime of Navigation on the Danube, Aug. 18, 1948, 33 U.N.T.S. 181.

[74]For a general picture of arbitration and conciliation in present international law, *see* Hans von Mangoldt, Arbitration and Conciliation in Judicial Settlement of International Disputes: An International Symposium, (Max Planck Institute for Comparative Public Law and International Law, 1974).

become comparable to those of other fields. Thus the experience and State practice with regard to the settlement of disputes in such other fields will also present relevant evidence for the possible further development of that aspect of space law.

Attempts to come to general solutions for settlement of international disputes go back as far as the Hague Convention for the Pacific Settlement of International Disputes, October 18, 1907,[75] and the establishment of the Hague Permanent Court of Arbitration (which is neither permanent nor a court but merely a list of arbitrators).[76] These attempts continued with the Permanent Court of International Justice.[77] After the Second World War came the provisions on the settlement of disputes in the Charter of the United Nations,[78] and the International Court of Justice.[79] The former did not provide, and the latter was never widely accepted as a means for the judicial settlement of disputes. The difficulties are illustrated by the inability of the U.N. Special Committee for friendly relations to agree on procedures, especially judicial procedures, suitable for the settlement of disputes, in spite of the drafts submitted by a number of member States.[80] The General Assembly Resolution 2625 (XXV)[81] on principles of international law concerning friendly relations and cooperation among States in accordance with the Charter of the United Nations did not really present much progress.

The International Law Commission,[82] in its efforts to draft a more acceptable machinery for the settlement of disputes, in view of the highly political aspects of the general topic of the peaceful settlement of disputes,[83] restricted itself to the technique which it thought to be more acceptable to a larger number of States; that is, to

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[75]RGBL. 1910, 5. Convention for the Pacific Settlement of International Disputes, Oct. 18, 1907, 36 Stat. 2199, T.S. 76 No. 536, 54 L.N.T.S. 435 (proclaimed Feb. 28, 1910).

[76]For further details *see* Scott, *The Hague Conventions and the Declarations of 1899 and 1907* (1915).

[77]Statute of the Permanent Court of International Justice, Dec. 16, 1920, (1923) Gr. Brit. T.S. No. 23 (Cmd. 1981), 6 L.N.T.S. 390.

[78]Charter of the United Nations, June 26, 1945, chap. VI, arts. 33-38, 59 Stat. 1031, T.S. No. 993, 1 U.N.T.S. XVI. *See also* art. 1, para. I; art. 2, para. III; and, of course, art. 92.

[79]Statute of the International Court of Justice, 59 Stat. 1055, T.S. No. 993.

[80]20 U.N. GAOR, Anexxes (Agenda Items 90, 94, paras. 128-137) 201, U.N. Doc. A/5746; 21 U.N. GAOR, Anexxes (Agenda Item 87, paras. 157-161) 249, U.N. Doc. A/6230 (1966); 25 U.N. GAOR, U.N. Doc. A/AC. 125/12 (1970).

[81]G.A. Res. 2625, U.N. Doc. A/8082 (1970).

[82]For establishment of the International Law Commission, *see* G.A. Res. 174, U.N. Doc. A/519, at 105 (1947).

[83]For discussion of members of the ILC at the meetings in 1949 and 1950, *see* Summary Records of the First Session, [1949] Y.B. Int'l L. Comm'n 9, 50, 53, 58, 237 (1949); Arbitral Procedures, [1950] 2 Y.B. Int'l L. Comm'n 157 (1950).

international arbitration. Since the major advantage of arbitration is its adaptability and flexibility in comparison with the more rigid institutions and procedures of an international court, the International Law Commission did not present the results of its work in the normal form of a draft for a mulitlateral convention, but "as a set of model draft articles which States could draw upon, to such extent as they might see fit, in concluding bilateral or plurilateral arbitral agreements *inter se,* or in submitting particular disputes to arbitration *ad hoc.* "[84] Although this was certainly a wise approach to take, one cannot neglect the fact that, so far as could be ascertained, these Model Rules on Arbitral Procedures have not yet been applied in a single case.

Although negotiations on many multilateral conventions have led repeatedly to the consideration of questions dealing with the settlement of disputes, particular attention should be drawn to the detailed rules on the settlement of disputes that have been included in the Convention on the Law of Treaties,[85] since they are of relevance also for treaties concluded in the field of space law. These rules, as they came into the Convention, on one hand went beyond the draft treaty presented by the International Law Commission, but on the other hand did not follow the proposals for compulsory arbitration or adjudication.[86] The fact that many States were not ready to submit generally to adjudication or arbitration with regard to all treaties on any subject whatsoever, for which the Convention on the Law of Treaties would become applicable, need not necessarily be taken as a discouraging experience for the development of more compulsory solutions in space law, since space law presents a much more restricted and foreseeable area of application for the settlement of disputes.

VII. BILATERAL TREATIES

Finally, it may be mentioned that, in addition to the air transport agreements previously discussed, there are numerous other bilateral agreements concluded after the Second World War which contain compromise or arbitration clauses. These clauses often appear in agreements between the United Nations or its subsidiaries and developing

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[84]International Law Commission, Report, 53 Am. J. Int'l L. 230, 232 (1959); *see also* International Law Commission, Report to the General Assembly, [1958] 2 Y.B. Int'l L. Comm'n, 78, 80, 83 (1958); Dhokalia, The Codification of Public International Law 292 (1970).

[85]U.N. GAOR, Conference on the Law of Treaties, U.N. Doc. A/CONF. 39/1-2 (1970).

[86]For details regarding the draft of the ILC, *see* the comments to Art. 62 of the draft, UNCLTOR 1st and 2nd Sessions, Documents of the Conference, U.N./Doc. A/CONF.39/11/Add. 2 and U.N. Doc. E/70.V.50 at 82 (1970). For details regarding proposals for compulsory arbitration or adjudication, *see* U.N. Doc. A/CONF.39/C.1/L. 250; UNCLTOR, *id.* at 206; and U.N. Doc. E/70.V.6 at 341 (both concerning the rejected Swiss proposal); UNCLTOR, *id.* at 186.

countries,[87] in trade and navigation treaties,[88] in treaties on the protection of foreign investments which are mostly concluded between Western industrialized and developing countries[89] and in agreements on trade and financial transactions and economic cooperation as they are concluded chiefly between socialist states.[90]

VIII. CONCLUSION

As this paper indicates, present space law is very insufficiently equipped for the peaceful settlement of disputes, although such disputes are bound to arise. State practice in other fields presents an ambiguous picture. What conclusions might one draw from this short examination of the present state of the law and of State practice for the further development of space law?

The first fact one has to realize is that States are reluctant to submit to the binding decision of any sort of tribunal. Also, with regard to space activities, this reluctance must be expected; thus, skepticism as to the possible development of acceptable techniques for the settlement of disputes in space law seems justified.

This survey has shown that more progress has been achieved in more restricted fields of international law. It might therefore be possible to enlarge the very few and limited rules of present space law dealing with the settlement of disputes by developing additional techniques, at least for certain aspects of space law. Compulsory procedures might be more easily accepted in the framework of specific outer space treaties than as a general means of settling any dispute on activities in outer space, although the latter solution may seem to be preferable. In view of similar experiences in other fields of international communications, this may be especially true for the different aspects of

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[87] *See, e.g.,* Agreement on Assistance from the Special Fund, May 22, 1963, United Nations, Special Fund - Jamaica, art. IV, 489 U.N.T.S. 191; Agreement for Provision of Personnel, May 22-Sept. 23, 1963, United Nations-Jamaica, art. V, 479 U.N.T.S. 19; Agreement Concerning Assistance from the Special Fund, March 10, 1961, United Nations Special Fund-Cuba, art. IX, 390 U.N.T.S. 35; and Agreement Concerning Assistance from the Special Fund, May 26, 1966, United Nations Special Fund-Bulgaria, art. IX, 563 U.N.T.S. 71.

[88] *See, e.g.,* A Survey of Treaty Provision for the Pacific Settlement of International Disputes, *supra* note 72, at 620.

[89] Almost all investment protection treaties include clauses providing for compulsory arbitration. *See, e.g.,* Treaty on Investments, Dec. 13, 1961, Thailand-Federal Republic of Germany, art. XI, 541 U.N.T.S. 181; Agreement on Economic and Technical Co-operation, March 29, 1963, Japan-Burma, art. X, 518 U.N.T.S. 3; Convention on the Encouragement of Capital Investment, May 23, 1963, Netherlands-Tunisia, art. IV, 523 U.N.T.S. 237; Agreement on Commercial and Economic Cooperation, July 29, 1963, United Kingdom-Cameroon, art. VI, 478 U.N.T.S. 149.

[90] Most of these agreements provide for mixed commissions trying to prevent disputes; some also provide for arbitration, such as agreements of 1947 between Czechoslovakia and Poland as well as Yugoslavia, and between Hungary and Czechoslovakia. *See also,* A Survey of Treaty Provisions, *supra* note 72, at 579.

communication through space, which in the long run cannot function with pending disputes on essential questions. Therefore, there will be a specific pressure from the matter involved to accept binding procedures for settling such disputes.[91]

From the survey of other fields of law one may conclude that the decision of States to accept such procedures may be facilitated by several measures. One such measure could be to provide States with a choice among several different procedures of adjudication and arbitration so long as the choice of at least one is compulsory and so long as one procedure is automatically the subsidiary procedure for all cases in which States do not express a choice or the parties to a dispute have chosen different procedures. Another such facilitating measure might be to provide for binding decisions on the basis of international law only on legal questions, while for political questions one might provide for a decision *ex aeque et bono* or only for conciliation. States might also be more willing to submit to binding decisions if they are given the right to withdraw such a submission at any time, such withdrawal taking effect after a certain period of time and with regard to future disputes only. Generally, a settlement by the more flexible methods of arbitration seems to have a greater chance of being accepted than procedures referring either to the International Court of Justice or some new permanent international court.

Although there are a number of arguments for, and perhaps even more against, forming a new world-wide international space agency which cannot be commented on here, experience from other international and regional organizations shows that it might be easier to arrive at some compulsory settlement of disputes within the framework of such an institution.

Since compulsory procedures to peacefully settle disputes on activities in outer space will be increasingly needed with the growing transformation from the exploratory to the implementary phase of space activities, space lawyers are facing a specific responsibility in this respect. Optimistic missionary efforts should not be expected to be the response to this challenge. Actual progress in the sense of ratified treaty provisions for such procedures can be expected only after States realize the risk of their space activities being disturbed or their interests being insufficiently protected due to the lack of such procedures. Space lawyers will have to prepare the ground for that date by analyzing space law *de lege lata* and working on possible solutions *de lege ferenda.*

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[91]The proposals by Sloup, *Peaceful Resolution of Outer Space Conflicts Through the International Court of Justice: "The Line of Least Resistance"*, 20 DePaul L. Rev. 618, 688 (1971), for a very wide ranging competence of the International Court of Justice may be asking for too much and therefore may have little chance of realization in State practice.

THE 1974 BRUSSELS CONVENTION RELATING TO THE DISTRIBUTION OF PROGRAM-CARRYING SIGNALS TRANSMITTED BY SATELLITE: AN ASPECT OF HUMAN RIGHTS

*Carl Q. Christol**

One of the most impressive world developments of the past several decades has been the attention accorded to human rights. Human beings have reflected their commitment in countless ways. Some, if not all, governments have adopted and implemented programs. Many international institutions, both regional and universal, have formulated projects and have given attention to the perfection of techniques for the protection of human rights.

Among those human rights that have received considerable attention has been freedom of information, including the free dissemination of ideas by electronic means. Earth-orbiting satellites have become a basic delivery system for the transmission of an impressive variety of electronic signals. Such signals carry the work product of human ingenuity. This enormously varied product is generally regarded as having a monetary value and is referred to as intellectual property.

With the increasing perfection of broadcast and reception techniques it is possible to employ space objects to transmit program-carrying signals from an originating organization in one State to receivers in other States.[1] Such receivers can be a central organization that engages in the transmission or retransmission of signals to intended recipients; they can be community receivers or, they can be direct receivers, *e.g.*, home receivers. The present state of the art allows for the first two types of receptions. Direct

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[1]The term "originating organization" is used here in the same sense as it was defined in Article 1 of the Brussels Convention Relating to the Distribution of Program-Carrying Signals Transmitted by Satellite of May 21, 1974, namely, "the person or legal entity that decides what program the emitted signals will carry." Terms contained in the foregoing definition were also defined. Thus a "signal" is "an electronically generated carrier capable of transmitting programs." A "program" is "a body of live or recorded material consisting of images, sounds or both, embodied in signals emitted for the purpose of ultimate distribution." An "emitted signal" is "any program carrying signal that passes through a satellite." Other definitions employed in the Convention include "derive signal." This is a signal "obtained by modifying the technical characteristics of the emitted signal, whether or not there have been one or more intervening fixations." A "distributor" is the "person or legal entity that decides that the transmission of the derived signals to the general public or any section thereof should take place." Finally, a "distribution" is the "operation by which a distributor transmits derived signals to the general public or any section thereof." *13 Int'l. Leg. Mat.* 1447 (1974) U.S. House of Representatives, Committee on Science and Astronautics, 93d Congress, 2d Session, (1974).

broadcast satellites (DBS), although increasingly feasible from a technical point of view, will require a considerable amount of improvement before they reach the standards enjoyed at the present by recipients of domestic television broadcasts.[2]

I. THE ROLE OF UNESCO IN THE BRUSSELS CONVENTION

The 1974 Brussels Convention resulted from UNESCO's effort to facilitate and protect the dissemination of information on a worldwide basis. At a meeting in Geneva in 1968 UNESCO and the World Intellectual Property Organization (WIPO) combined to explore the legal issues that were expected to arise from the different ways in which television broadcasts could be received in countries other than those of the sender. Under the auspices of these international organizations a meeting was convened in Lausanne in April 1971 to study the means whereby copyright protection could be extended to intellectual property transmitted by satellite. Considered to be within the range of such protection were the rights of producers, performers, and broadcasting organizations. It was concluded that the rights needing protection could be assured only through the drafting of a new international agreement. Thereupon a draft convention was prepared and submitted for consideration to a meeting of legal experts in Paris in May 1972.

The general conference of UNESCO secured the adoption on November 15, 1972, of the controversial Declaration of Guiding Principles on the Use of Satellite Broadcasting for the Free Flow of Information, the Spread of Education and Greater Cultural Exchange.[3] The preamble of the Declaration identified facts or expectations that were agreeable to all, or almost all, of the participants. Included were satellite broadcasts which were a new dimension in international communication with programs in the future available for community and individual reception. There were needs for international agreements to promote the free flow of ideas by word and image. Basic provisions of the UN Charter were relevant. Articles 19, 26, and 27 of the Universal Declaration of Human Rights were particularly important, including the guarantees set out in Article 27 (2) which accorded everyone "the right to protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author." General Assembly Resolution 110 (II) of November 3, 1947, retained its original vigor. And there existed a need for regional and international organizations, including broadcasting associations, to promote and encourage regional cooperation in

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[2]For a more detailed appraisal of the technical problems affecting the time when such direct broadcasts may become a reality, *see* "The 1974 Brussels Convention Relating to the Distribution of Program-Carrying Signals Transmitted by Satellite: Its Strengths and Weaknesses" which will appear in Proc. 20th Colloquium on the Law of Outer Space, *Int'l Inst. Space L.*, 28th Int'l Astronautical Cong., Prague, Czechoslovakia, (September, 1977).

[3]UNESCO Doc C/98 Annex - Recommendations; 11 *Int'l Leg. Mat.* 1476 (1972). The Declaration was adopted by a vote of 55 in favor, 7 against (Australia, Canada, Costa Rica, Denmark, the Federal Republic of Germany, the United Kingdom, and the United States), with 22 abstentions.

the establishment and operation of regional satellite broadcasting services, pursuant to General Assembly Resolution 2733 (XXV) of December 16, 1970.

A number of the preambulatory expectations were set forth in the body of the Declaration, including, for example, the provision in Article III (2) that "the use of satellites for broadcasting should be based on international cooperation, world-wide and regional, intergovernmental and professional." Articles V, VI, and VII identified important objectives of satellite broadcasting, namely, the free flow of information, the spread of education, and the promotion of cultural exchange.

Article IX, relating to existing differences over the role of direct broadcast satellites, referred to the necessity for States to "reach or promote prior agreements" relating to the transmission via DBS of programs to the populations of countries other than to the country of origin of the transmission. States that opposed the final Declaration did so principally because the quoted language indicated the need for broadcasters to obtain the prior consent of the State from which broadcasts were emitted prior to such transmissions. This was considered objectionable in that instead of furthering the free transmission of information it could provide limitations upon such transfer. Article IX was also encumbered in its second paragraph with the provision that: "With respect to commercial advertising its transmission shall be subject to specific agreement between the originating and receiving countries."

The negotiations produced a third meeting in Nairobi in July 1973. Further refinements took place. This led to the diplomatic conference in Brussels which convened on May 6, 1974. The outcome of its work was the Convention Relating to the Distribution of Program-Carrying Signals Transmitted by Satellite.[4]

Delegations from 57 States participated in the Conference, while ten States sent observers. Observers were present from five intergovernmental organizations and from 17 international nongovernmental organizations. The Convention was signed on May 21, 1974 by the United States and 14 other countries: Belgium, Brazil, Cyprus, the Federal Republic of Germany, Israel, Italy, the Ivory Coast, Kenya, Lebanon, Mexico, Morocco, Senegal, Spain, and Switzerland. Participants not signing the Convention included Byelorussian Soviet Socialist Republic, Czechoslovakia, Hungary, Ukrainian Soviet Socialist Republic, the U.S.S.R., and Yugoslavia, as well as many Western European states, Canada, and Japan.

The 1974 Brussels Conference sought to steer a practical course between the emphasized assurances contained in Article 27 (2) of the Universal Declaration of Human Rights, the broad principles of freedom of information, the constitutional guarantees of some States against having to obtain prior consent for the transmission of ideas, and the reluctance of some receiving States to allow the unencumbered entry into

[4] 13 *Int'l Leg. Mat.* 1447 (1974); Committee on Science and Astronautics, U.S. House of Representatives, 93d Cong., 2d Sess., Committee Print, Serial U (July, 1974).

such States of materials that might be found to be objectionable. That such a balance was missing is identified by the fact that several of the principal States, *e.g.*, USA and FRG which had been in opposition to the UNESCO Declaration, favored the Brussels Convention, while some of those that had favored the UNESCO Declaration did not sign the Brussels Convention, *e.g.*, USSR and the socialist States, excluding Yugoslavia. The United States had placed its objection to the UNESCO Declaration on the principle that domestic censorship should not be raised to the status of an international legal concept.

From 1975 to the present the Convention has been signed by these additional States: Argentina, Austria, France, and Yugoslavia, while the accession of Nicaragua has been deposited. By the close of December 1976 ratifications had been deposited by Kenya, Mexico, and Yugoslavia. Before the Convention can enter into force five instruments of ratification, acceptance, or accession must be deposited with the United Nations. Reservations to the Convention are not to be permitted. As of November 1977 the Convention had not entered into force.

II. THE BRUSSELS CONVENTION

The negotiations in Brussels in 1974 were influenced by a growing recognition that television broadcasts can be received in very large geographical areas. Because of the presence of many States within these areas, there are separate copyright laws and practices. With the broadcast of intellectual property into such States a variety of legal relationships has emerged, including the protection of such property rights. Right and duty relationships exist between the broadcasting services, *e.g.*, originating organizations and the foreign purchaser of such property, the originator and those who may wrongfully intercept and apply to their own interests such property, and in both cases between the originator and its program suppliers. The rights of the owners of the transmitted property are at stake.

Television programs on the "downleg" from a satellite are openly accessable to interception by unintended receivers. The latter can effect a retransmission to unintended audiences without compensating the initial broadcaster. The broadcaster, being unable to protect those who have conveyed intellectual property to him, finds himself at a disadvantage in negotiating with the owners of such property. This has been summarized thusly: "If the broadcaster cannot guarantee control over the retransmission of a particular program to audiences within a specific country or geographic area, he will be called upon to pay his program contributors for coverage in the additional area. That area is likely to include countries offering no legal protection, under concepts of copyright or neighboring rights, against retransmission of the programs on their territories. If the originating broadcaster receives no benefit from the expanded coverage, he is unlikely to be willing to pay program contributors

substantially higher licensing fees to cover it, and the result could well be a decision not to use the satellite at all.''[5]

The Brussels Convention in its final form allowed the broadcasting services, *e.g.*, originating organizations, and the creators of program content to adopt a common stand against potential poachers. Through nation-state commitments the owners of intellectual property and programs were to be protected against unauthorized distributions. As between the originating organizations and the contributors to programs the former were to have the power to decide upon the areas to which the programs would be transmitted, while the contributors were free to negotiate with the originating organizations concerning the destination of the signals carrying their work product.

Property values exist in the product of human ingenuity and creativity constituting the broadcast program. At first glance one might assume that program content, with its identifiable value, and the means employed for the transmission of such property values were inseparably linked for analytical and legal purposes. However, in order to provide protection to the owner of the property and allow prospective recipients of such property to exercise their own judgments as to the suitability of programs, it must be asked whether the factors of program content and the methods available for the transmission of programs should be treated separately. This would allow for taking account of the fact that some recipients would be eager both to receive and pay for the programs, while others might not wish to receive such materials and therefore would not be under an obligation to pay for them. The Brussels Conference attempted to make a distinction between the property value of program content and the technical capacity of satellites to transmit programs. The Convention dealt with the transmission of signals and not their content. The subject of the treaty was not the content but the container.

This distinction allowed the Convention to focus on the duty of valid recipients of transmitted programs to prevent the distribution of such programs to persons not entitled to receive them. It therefore became unnecessary for the Convention to fix specific property rights in order to assure that the programs of originating organizations would not come into unauthorized hands. The Convention did not confer on originating organizations the exclusive right to authorize the use of programs broadcast by satellite. The Convention established obligations for receiving States rather than for sending States. Moreover, following this policy lead it became possible for States engaged in preventing the internal dissemination of the content of foreign broadcasts to continue along such lines.

The Convention, in its final form, concentrated on the protection of the existing property rights of broadcasting services, authors, and other owners of copyrighted

[5] ''Draft Report of the General Rapporteur,'' 13 *Int'l. Leg. Mat.* 1449 (1974).

materials, performers, and phonogram producers.[6] However, flowing through the negotiations from their beginning stages were concerns for general human rights including the freedom of information and future general prospects of satellite communications. Successive drafts of the Convention were obliged to take into account the scientific and technological progress beyond the point-to-point television broadcast capabilities that uniquely existed in 1968. With rapid changes in the art the preparation of the respective drafts has been described as "a race between law and technology."[7]

Because of existing ideological preferences either for open societies with a free movement of almost all forms of information—following national commitments to freedom of speech and freedom of expression—or for closed societies wherein governmental control over the distribution of ideas is acceptable, it was inevitable that there would be serious differences as to the terms of the final agreement. During the course of the negotiations the Soviet Union repeatedly proposed amendments to the text of the convention and to the preamble that would have provided for governmental control over the program content of television broadcasts. Since the United States considered such proposals to be in violation of its firm commitment to democratic principles and the First Amendment to the U.S. Constitution, it was obliged to oppose such amendments.[8] To avoid such a basic difference, while at the same time seeking to protect property rights flowing or resulting from television broadcasts, the negotiators developed an interesting formula.

The negotiators rejected the position that governments were entitled to control the program content televised from satellites. However, participants were in agreement that a receiving State, by reason of its sovereignty, could exclude foreign broadcasts and might refuse to enter into agreements with foreign broadcasters allowing their programs to have entry into the objecting State. But, in the event that there was a willingness on the part of the receiving State, then the receiving State was obliged to take "adequate measures to prevent the distribution on or from its territory of any program-carrying signal by any distributor for whom the signal emitted to or passing through the satellite is not intended."[9]

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[6]The spirit of the Convention sought to "protect a Legitimate right of Property." *See* Ferrer, *The Brussels Convention Concerning the Protection of Signals Transmitted from Satellites*, Proc. 17th Colloquium on the Law of Outer Space 26-28 (1975).

[7]13 *Int'l. Leg. Mat., supra* note 5, at 1449.

[8]*See generally*, S. Lay, A. Gribble, R. Copeland, and K. Kind, *Preliminary Draft of a Study of Censorship Provisions of a Proposed Telecommunications Satellite Treaty and the Constitution of the United States of America*, Proc. 17th Colloquium on the Law of Outer Space, Int'l Inst. S.L. 72 (1975); Price, *First Amendment Constraints and the Direct Broadcast Satellite Controversy*, Am. Soc'y Int'l, L. Direct Broadcasting from Satellites: Policies and Problems, 35 (1975).

[9]Convention, Art. 2 (1).

Because the problem was perceived in the foregoing fashion and was resolved in the quoted terms, the signatory States were allowed to fashion on their own account the most appropriate means for suppressing the misuse of foreign programs. This might include penal sanctions, withdrawal of benefits, registration requirements, and other regulatory procedures. However, pursuant to paragraph six of the Convention the "adequate measures" open to States to secure enforcement of the Convention were not to extend to limitations upon the present or future rights of those owning intellectual property or broadcasting organizations "whether the protection of those rights derived from domestic law, from either of the copyright conventions, or from the Rome Convention."[10]

Such an approach allowed the Convention to become one of public international law, in which enforcement duties were assigned to States, rather than a private international law agreement whereby signatory States would have guaranteed the validity of property rights in copyrighted materials when such property rights had their locus within the broadcasting State. In short, the Convention engaged signatories to prevent unauthorized distributions rather than requiring receiving States to "enforce individual property rights in the form of an exclusive right of authorization."[11] This allows for the conclusion that "since the Convention itself would confer no new rights upon broadcasters, there was no longer any corresponding need to create additional new rights in the Convention to safeguard the interests of program-contributors."[12]

Viewed in this perspective the Convention offered to the owners of intellectual property no enlargement of established property rights. Rather, it afforded at the world level a means whereby existing property rights might not be used by pirates or poachers to the detriment of the owner. The means, following the identification of an international standard of behavior and a promise on the part of participating States, was to employ existing or newly created municipal processes in order to thwart the actions of pirates and poachers. Thus, to the extent that agreement exists that such programs may be beamed across national frontiers (for example, as the result of understandings between national originating organizations) the Convention contributed to a regularized, and presumably more wideranging, transmission of broadcast programs. To the extent that there was confidence the broadcast programs would be received by the intended audience, a greater likelihood exists that the broadcasts would take place. However, with poachers in action, the programs could still reach unintended audiences. Assuming that the owners of programs had derived compensation from sources within the sending State, and therefore had no further claim to copyright protections, the programs could still be transmitted to possibly willing audiences in possibly unwilling

[10] 13 Int'l. Leg. Mat., *supra* note 5, at 1462. The Rome Convention of October 26, 1961 provides protection to performers, producers of phonograms, and broadcasting organizations.

[11] *Id.* at 1450.

[12] *Id.*

States. Presumably the unwilling State would be able to employ legal processes of a kind not dissimilar from those available to it where it was endeavoring to impede the activities of pirates or poachers.

III. TERRITORIAL LIMITATIONS IN THE CONVENTION

The Convention in several articles refers to conduct that takes place "on or from the territory" of a signatory State. Article 2 (1) provides that parties must "take adequate measures to prevent the distribution on or from its territory of any program-carrying signal by any distributor for whom the signal emitted to or passing through the signal is not intended." However, paragraph three of Article 2 excuses signatories in certain circumstances from the foregoing obligation. Paragraph one, according to paragraph three, does not apply to "the distribution of derived signals taken from signals which have already been distributed by a distributor for whom the emitted signals were intended."[13] Paragraph three assumes a situation where a chain of distributions will take place following a satellite transmission, that an unauthorized distributor has intercepted the signal along the chain, and a distribution has then been effected on or from the territory of a party.

These references stress the fact of an initial satellite transmission of a program as well as the significance of the distribution on or from the territory of the signatory. The existence of a transmission on or from the territory, however, need not fall within the terms of the agreement. If, for example, there has been a series of terrestrial broadcasts with an unintended distributor at the end of the chain, but where higher in the chain there had been an intended distributor from the satellite, "the fact that the signals were emitted through a satellite would not make the Convention applicable."[14] Such acts fall within the prescriptions of the October 26, 1961 Rome Convention Dealing with Rebroadcasting. The Convention would apply if none of the distributors higher in the connecting chain with the satellite were an intended receiver from the satellite. Thus, if an unintended distributor in a nonsignatory State were to intercept and broadcast a program, and if this transmission were picked up from that distribution and redistributed "by an unintended distributor in a Contracting State, the Convention would apply."[15] The provisions relating to territory would apply since the last mentioned distribution was effected in the territory of a signatory State.

Article 4 refers to the distribution of signals on the territory of a signatory State. It has been suggested that this article providing that the Convention "shall in no way be interpreted as limiting the Right of a Contracting State to apply its domestic law in order

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[13] *Id.*, at 1447. *See* note 1 for the definition of terms.

[14] *Id.*, at 1460.

[15] *Id.*

to prevent abuses of monopoly'' should be strictly construed.[16] Article 8 refers to the emission of signals from the territory of signatory States. Apparently the term territory was used in order to effect a distinction between the emission of signals from satellites in space and from territorial emissions. Moreover, Article 1 defines a satellite as any device in ''extraterrestrial space capable of transmitting signals.''

The Convention does not refer to the transmission of signals from vessels located on the high seas or other ocean-based transmissions. There seem to be no technical reasons why signals cannot be intercepted on the ocean and distributed to land areas where further transmission can take place on or from territories falling under national sovereignties.

Quite independently of the UNESCO and WIPO interest in protecting intellectual property from coming into the hands of unintended recipients, the Third United Nations Conference on the Law of the Sea has endeavored to place limits on unauthorized broadcasting from the high seas. In Article 97 of the Revised Single Negotiating Text (RSNT) of May 10, 1976, the Second Committee of the Conference identified what constitutes unauthorized broadcasting for the purposes of the proposed Convention. It is taken to mean ''the transmission of sound radio or television broadcasts from a ship or installation on the high seas intended for reception by the general public contrary to international regulations.''[17] The definition makes no distinction concerning the source of the signals, whether they have been received from a satellite, or what kind of chain of broadcasts has taken place prior to receipt and retransmission from the vessel.

The powers of the International Telecommunications Union (ITU) and of member States to secure compliance with frequency allocations have been limited. In commenting on the pre-1965 situation in Europe, it has been stated that no means had ''been provided in the conventions for enforcing regulations against stations which do not come within the jurisdiction of a member state.'' This made it easy for poachers to transmit illicitly.[18] The RSNT and the Informal Composite Negotiating Text have endeavored to identify jurisdictions having competence to prosecute and punish unauthorized broadcasting from the high seas. Pursuant to Article 97 of the former and

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[16]Ferrer, The Brussels Convention, *supra* note 6, at 29.

[17]U.N. Dec. A/Conf. Ga/WP, 8/Rev. 1/Part II. For an early analysis *see* Soronson, *Pirate Broadcasting from the High Seas,* Legal Essays 319 (1963). The ITU Radio Regulations prescribed limits on radio broadcasting from beyond national territory. Art. 7, Sec. 1, R. 422 and Art. 28, Sec. 6, R. 962 of the ITU. Radio Regulations, Dec. 1959, 12 U.S.T. 2377, T.I.A.S. No. 4893. In 1965 the Council of Europe reached agreement preventing ships on the high seas from broadcasting into national territories. Article 109 of the Informal Composite Negotiating Text of July 15, 1977, repeats the terms of Article 97.

[18]van Panhuys and van Emde Boas, *Legal Aspects of Pirate Broadcasting,* 60 Am. J. Int'l. L. 303, 306 (1966). *Compare* Hummings, *Pirate Broadcasting in European Waters,* 14 Int'l & Comp. L.Q. 410, 413-436 (1965); Woodliffe, *Some Legal Aspects of Pirate Broadcasting in the North Sea,* 12 Neth. Int'l L. Rev. 365 (1965).

Article 109 of the latter, illegal broadcasters "may be prosecuted before the court of the flag State of the vessel, the place of registry of the installation, the State of which the person is a national, any place where the transmissions can be received or any State where authorized radio communications is suffering interference." Reference to "any place where the transmissions can be received" would include receptions having an impact on land, in airspace, and in the space environment, as well as ocean areas. Sanctioning power has been included within the terms of the article. The emphasis is on self-help on the high seas, with the provision that a State having jurisdiction may on the high seas "arrest any person or ship engaged in unauthorized broadcasting and seize the broadcasting apparatus." Thus, the places where the harm is experienced (land, airspace, space environment, oceans) are clearly distinguished from the place where the protective action is to be permitted (high seas).

Article 3 of the Brussels Convention refers to the direct reception of signals emanating from a satellite. Clearly this language excludes events taking place in the space environment as opposed to those occurring on or from the territory of a State. Its terms are: "This Convention shall not apply where the signals emitted by or on behalf of the originating organization are intended for direct reception from the satellite by the general public."

The place where distributions of intellectual property occur remains of concern to the owners of such property and to those who have distributed property-laden programs via satellite. Prior to the insertion into Article 3 of the provision excluding its application to transmissions by satellite for direct reception by the general public, the governments of Germany and Austria sought to introduce language protective of rights in intellectual property, including an identification of where invasions of such rights take place. They relied on views expressed during the negotiations, and added:

> that where a satellite is used for the distribution of program-carrying signals made directly by the satellite itself, the originating organization, even without the insertion of such a provision in the Convention, is responsible for the distribution vis-a-vis the authors, performers, producers of phonograms and broadcasting organizations and cannot plead that the distribution was made in space and thus outside the sphere of application of any national law. However, since this view is disputed in legal literature it appears highly desirable to clarify the question by inserting an express provision.[19]

Patermann notes that under the German "Bundeltheorie," protection for copyrights and industrial property is granted "against actions and effects occurring within the territory of those countries which confer or recognize such rights. . ."[20] In tort cases he urges that the place of the harm should be considered to be the place of the reception of the broadcast.

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[19]13 Int'l Leg. Mat., *supra* note 5, at 1462. *Compare* Patermann, *The Question of the Law Applicable to the Case of Damage Caused by Direct Satellite Broadcasts* (Torts by TV Broadcasting), Proc. of the 16th Colloquium of the Law of Outer Space, Int'l Inst. Space L. 75 (1974).

[20]Patermann, *supra* note 19, at 80 n. 3.

Article 3 of the Convention constitutes an exception to the duty set out in Article 2 (1) whereby signatories are to take adequate measures to prevent the distribution of derived signals. It is the purpose of Article 3 to exclude from the coverage of the Convention the retransmission of signals obtained from direct broadcast satellites. However, signatory States are still obliged to be aware of the fact that poachers may come into possession of signals from point-to-point of community- type satellite broadcasts, and that poachers might then wish to broadcast such information through a direct broadcast satellite. Signatory States must prevent these uses of such satellites. This meaning has been confirmed as follows:

> Where the signals are coming down from a DBS, their distribution is now outside the Convention by virtue of Article 3, but where the signals are received from another type satellite, they cannot be retransmitted by an unintended distributor, even if he is using a DBS for the purpose.[21]

This being the case it can be argued that Article 97 of the RSNT, and Article 109 of the Informal Composite Negotiating Text, while designed to prohibit the transmission of certain signals, does not purport to prohibit the retransmission from high seas vessels of satellite signals intended for direct reception by individuals who have received such signals from an originating organization. Such an organization is the natural or juridical entity that decides what program emitted signals will carry. It is to be recalled that emitted signals are those that pass through a satellite. Thus, a ship would seem—at least pursuant to the Brussels Convention—to be a lawful place from which to rebroadcast signals received from a satellite for the direct reception of the general public. That such rebroadcasts, seemingly not subject to the same constraints as broadcasts on or from territory, should be able to claim the exception set out in Article 3 of the Brussels Convention may not serve the general interests of the community.

Where the broadcasts from ships have not been a part of a satellite-based chain of transmission, such broadcasts pursuant to the RSNT and to the Informal Composite Negotiating Text would be treated as being unauthorized. The specific obligations contained in Article 2 of the Brussels Convention would be inapplicable to such broadcasts. However, the original emission of signals from such ships, and their redistribution, through point-to-point broadcasting techniques to unwilling States finds no support in general international law. From a practical point of view an unwilling State may have reference to traditional blocking procedures.[22]

It has been observed that if a State is bound by a specific convention, or by general rules of international law, and fails to secure the implementation of necessary measures, and at the same time is unwilling to "submit the matter to international adjudication,

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[21] 13 Int'l Leg. Mat., *supra* note 5, at 1457.

[22] van Panhuys and van Emde Boas, *supra* note 18, at 303. *See also* Piradov, ed., International Space Law 190-192 (1976), who speaks of the right of a State to prevent the reception within its territory of foreign broadcasts.

the coastal state might well take measures of self-help."[23] All of this assumes, however, that there are suitably clear international legal principles and rules specifying what constitutes an unlawful interference in the affairs of a receiving State that has been made the object of foreign broadcasts.

Article 7 in dealing with the prevention of monopolistic abuses took into account the need to identify the source of the law to be applied. It was agreed that each signatory would be allowed to apply its own municipal law in such circumstances. According to Ferrer, Article 7 prevents the Convention from being "interpreted as limiting the right of States to apply their international legislation to preclude the abuse caused by monopolies."[24]

Article 8 dealt with reservations to the Convention. During the negotiations it had been observed that nationality was not the sole basis for the exercise of jurisdiction where distributions, pursuant to Article 2, were to be regulated. Some States base jurisdiction on the place from which signals were emitted. With differing outlooks on the subject of jurisdiction, Article 8 of the Convention allows a signatory to declare that for "its purposes the words 'where the originating organization is a national of another Contracting State' appearing in Article 2 (1) shall be considered as if they were replaced by the words 'where the signal' is emitted from the territory of another Contracting State." The foregoing language allows affected States to reject the nationality of the originating organization as the sole criterion for the applicability of the Convention. Such rejecting States can use the place from which the signals are emitted as the basis of jurisdiction.

IV. OUTLOOK OF THE LESS-DEVELOPED COUNTRIES

It is possible that the less-developed countries will favor the reception of satellite broadcasts through home receivers. This would relieve them of the high costs required by the installation of expensive antenna and the retransmission of derived signals to point-to-point receivers for further rebroadcast to the final recipient. Without the ownership or control of such facilities the less-developed countries could possibly become the recipients of unacceptable program content. During the negotiations the government of Kenya urged that the Convention should not prohibit rebroadcasts by poachers who had obtained signals that had been received from direct broadcast satellites.

Article 4 (iii) of the Convention takes into account specific needs of the less-developed countries and therefore allows them an exception from their Article 2 (1) duty. They are under no duty to take adequate measures to prevent the distribution on

[23] *Id.*, at 318.

[24] Ferrer, *supra* note 6, at 1461.

or from their territory of a program carried by an emitted signal, when the distributor in the receiving State was not intended to receive the signal, "provided that the distribution is solely for the purpose of teaching, including teaching in the framework of adult education, or scientific research."

The negotiations provided clarification concerning the meaning to be attributed to the word "teaching." The United States representative suggested that the reference to teaching in an adult framework included any kind of systematic instructional activities. This would mean that guidance would be received from the 1971 texts of the International Telecommunication Union Convention and the Universal Copyright Convention, which have been construed to include "all conventional forms of teaching at every level of education, and instructional television as distinguished from general programming that is cultural or informational in character."[25]

The Convention is to be interpreted to restrict this exception in favor of the less-developed countries, as well as other exceptions dealing with informatory current events and short quotations, to the obligations contained in the agreement. Article 4 will not supersede obligations assumed by States in existing copyright conventions, in the 1961 Rome Convention (relating to performers, producers of phonograms, and broadcasting organizations), and the ITU Convention. The exceptions in favor of the developing countries established rules to be applied exclusively to international situations. Thus, it has been noted that none of the terms of the Convention "can have any sort of binding effect on the laws governing exclusively domestic situations in a Contracting State."[26] The exception is not intended to provide any exemption from the municipal laws of States parties to the Convention when such local laws prohibit poaching or transmitting of poached materials. The exemption is solely for the benefit of less-developed countries in the area of educational materials where the information has been broadcast to the country from abroad.

V. PRINCIPAL DIFFERENCES AT THE CONFERENCE

States perceived the objectives of the Brussels Conference differently. Some found it difficult to separate the program content of broadcasts from broadcasts themselves. Those who wished to write into the Convention provisions dealing with program content wished to impress duties on originating States. The socialist States were the chief proponents of this approach. When it was not accepted at the Conference they persuaded the participants that a letter should be forwarded by the Conference to the Secretary-General of the United Nations in which their outlooks were reflected. The letter stated:

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[25] 13 Int'l Leg. Mat., *supra* note 5, at 1461.

[26] *Id.*

> Each Contracting State shall undertake to exclude in all cases from programs transmitted via satellite any material detrimental to the maintenance of international peace and security, publicizing ideas of war, national and racial hatred and aimed at interfering in the domestic affairs of other States or undermining their national laws, customs and traditions.[27]

The final draft of the Convention did not impose requirements on originating States to control program content. This approach corresponds with the traditional role of communications conventions since they have sought to facilitate the broadcast and reception of transmissions. The socialist States did not sign the Convention prior to the cutoff date in March 1975.[28]

Although the Convention did not apply to direct broadcast satellites, it was conceded that the principle that no State was obliged to give its consent prior to broadcasts would apply as readily to transmissions between national services and community receivers as to direct broadcasts. General awareness of these practical conditions raised the issue whether any transmissions of signals involving satellites should take place from a State without the prior consent of the sending State. Within the narrow terms of the Convention this issue was resolved through the acceptance of the view that no such obligations should be imposed on originating States.

The Conference did not become deeply involved in attempting to identify the ramifications suggested in General Assembly Resolution 110. This allowed the fundamental differences relating to the free transmission of information and the refusal to allow some information to cross national boundaries to remain unresolved. However, to the extent that a receiving State was to allow transmissions making use of satellites to enter that State, other than direct broadcast satellite transmissions, then the receiving State was obliged to take measures to prevent such transmission, irrespective of content, from being conveyed to an unintended receiver.

That the Conference finally engaged only in a piecemeal approach to satellite communications was neither a strength nor a weakness. The imposition of the mentioned obligations on the receiving States was a valid achievement. The inability to cope with the DBS situation was not a failure, since it was recognized by all that this was a matter that was enormously complex and was, in fact, a matter that had long engaged, and continued to engage, the attention of COPUOS.

The Convention did erect new legal rights and duties for the participating States. In the normal course of events it is probable that disputes may arise as to the meaning of

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[27] *Id.* at 1466. *Compare* the U.S.S.R. Protocol of May 10, 1974; *id.* at 1454. The antecedents of this position can be traced to General Assembly Resolution 110, adopted November 3, 1947. This concern has been stated in numerous resolutions of the General Assembly and international agreements, including the 1967 Principles Treaty. The latter considered General Assembly Resolution 110 as being applicable to the space environment.

[28] Yugoslavia deposited its ratification on December 29, 1976.

the Convention and whether signatories are in compliance. With this in mind it would have been helpful if the negotiators had given some attention to procedures for the resolution of disputes. That this is a subject well suited to the attention of negotiators is seen in the fact that several articles are devoted to this subject in the 1972 Convention on International Liability for Damage Caused by Space Objects. There are several detailed provisions for the resolution of deep-sea bed and ocean disputes set out in the RSNT and in the Informal Composite Negotiating Text of the Third United Nations Conference on the Law of the Sea. Further, the Swedish-Canadian Draft Principles Governing Direct Television Broadcasting by Satellite has pointed in this direction. It suggested the incorporation of such techniques as conciliation, mediation, arbitration, or judicial settlement. COPUOS, in its discussions on DBS, has encountered the problem of dispute resolution. It has advanced the view that if consultations do not resolve such disputes such matters should be referred to established procedures of peaceful settlement.

It could be argued that the Conference failed to acheive major protections for the owners of intellectual property. But, as has been observed, there are other ways to achieve this worthwhile objective. One is to look to the municipal laws of States. Another is to rely on existing or future private international law agreements put forward under the sponsorship of international organizations wholly concerned with intellectual property rights. Once international legal standards are agreed upon in such institutions, signatory States can be asked to modify their municipal laws to support such standards. Without getting totally entangled in the political-legal morass of control over program content, the Brussels Convention did, in effect, provide monetary protections to the owners of intellectual property. Signatory States must take reasonable measures within their areas of jurisdiction to prevent the distribution of such property to unintended receivers and the areas served by them. Thus, a market for such programs still remains to the owner of such intellectual property.

VI. CONCLUSION

Satellite science and technology has continually extended television broadcast capabilities. The need has been seen to establish workable rules protecting such broadcasts. The purpose of the 1974 Brussels Convention was to protect property rights in programs broadcast with the assistance of satellites against poachers who might intercept and rebroadcast such programs. Associated with this goal was that of assuring reception by the legitimate purchaser of the program. The unimpeded delivery of such programs constitutes an assurance that there will be a free flow of information, and this in turn will contribute to the worldwide expectations summarized under the heading of human rights.

The Convention did not offer to States any authority over the formation or control of the program content of materials transmitted by satellite. The Convention, on the other hand, did not impose limitations on States seeking to prevent the delivery of foreign-based programs to the broadcast services of receiving States or to other receivers within the territory of such receiving States. The Convention did not impose on potential receiving States the human rights convictions of broadcasting States. No inhibitions concerning the traditional practice of jamming foreign broadcasts were considered. Thus, at least two techniques for denying access of outside information were contemplated. First, the broadcast service of a potential receiving State remains under no obligation to enter into a contract with the broadcast service of a potential sending State. Second, traditional jamming practices were not prohibited.

The agreement did not apply to direct broadcasts through satellites to the general public. It emphasized the broadcast of derived signals which were defined as the product of a modification of the technical characteristics of an initially emitted signal.

Ratifying States are expected to employ suitable municipal measures to make sure that broadcast facilities within their territories or jurisdiction are not employed to transmit foreign programs to unintended receivers. The Convention, when it enters into force, can serve several important value-oriented objectives. First, it can protect the creators of intellectual property against those who would convert it to their own use without respecting the property rights of the creators. Second, through normalizing the foregoing right, it may be possible to stimulate human ingenuity on a worldwide basis with the expectation that the product of such creativity will receive a wider distribution than otherwise would have been the case. On balance, the Convention can be regarded as a constructive step toward the regulation of space environment activities. It can help to facilitate a maximum amount of order in the space environment. Steps such as this can contribute beneficially to the application of the potential of space to the legitimate needs of mankind.

Because of the limited acceptance accorded to the Brussels Convention, and the need to continue to secure larger protections for the intellectual property that is disseminated by satellite, the legal subcommittee of COPUOS in 1976 turned its attention to "copyright and neighboring rights." Working Group II of the subcommittee has set out a proposed principle reading:

> Without prejudice to the relevant provisions of international law, States should cooperate on a bilateral and multilateral basis for protection of copyright and neighboring rights by means of appropriate agreements between the interested States. In such cooperation they should give special consideration to the interests of developing countries in the use of direct televison broadcasting for the purposes of accelerating their national development.[29]

[29]U.N. Doc. A/AC.105/WG.8/L.4 (1973).

It is obvious that much more than the protection of property rights in intellectual property is foreseen in the foregoing formulation. There continues to be an intermingling of property rights, human rights, sovereign concerns affecting the free transmission of information, and claims for special consideration on the part of the developing countries.[30] All of these must be considered together in a political forum such as the United Nations. The fact that attention is being given to the value of intellectual property, as it is considered in a mixed context, is in itself quite noteworthy.

[30] *See generally.* Christol, *Space Joint Ventures: The United States and the Developing Nations,* 8 U. Akron L. Rev. 398 (1975); Christol, *International Space Law and the Less Developed Countries,* Proc. of the 19th Colloquium on The Law of Outer Space, Int'l Inst. Space Law 243 (1977); U.N. Doc. A/AC.105/171, Annex II, 1 (1976).

INFLUENCE OF THE CONQUEST OF OUTER SPACE ON NATIONAL SOVEREIGNTY: SOME OBSERVATIONS

D. Goedhuis *

The conquest of outer space has opened a new phase in the relationship between national law and international order. It is a vital factor in the evolution of society and space activities and, in the words of the Chairman of the United Nations Committee on the Peaceful Uses of Outer Space, Mr. Peter Jankowitsch, "while new in man's experience, nevertheless holds forth a promise of enhancing our ability to survive not only on the planet Earth but in the Universe itself."[1]

Within a remarkably short time after the first Sputnik was launched into orbit around the Earth in October 1957, a universal consensus was achieved on the two fundamental legal principles to govern this new medium; first, that outer space is free for exploration and use by all States and, second, that it is not subject to national appropriation. The basis of the legal regime applicable to outer space is to be sought *not* in its nature but in the consensus that by the principle of freedom, a principle confirmed by the Outer Space Treaty of 1967, the interests of the whole world community are best served.

It has long been recognized that in the present circumstances where only a handful of States possess space capabilities, an unregulated application of the freedom principle would lead to situations of a monopolistic nature. It is for that very reason that efforts by the U.N. continue to be made to devise rules by which the needs of the *non-possidentes* are protected. The question arises, however, as to what extent these efforts have had positive results.

Among the several issues on which the U.N. Committee on the Peaceful Uses of Outer Space is presently trying to frame rules, two are of direct practical significance; namely, the use of direct broadcasting and remote sensing satellites. An examination of the lengthy discussions in the Committee on the various aspects of both these issues, however, lies outside the scope of this article. Although valuable progress has been made in reaching agreement on several of the aspects involved in the application of both types of satellites, the views expressed previously on the most fundamental problems arising in both fields are yet too far apart to expect that a consensus on binding international rules can be reached in the near future. In the field of direct broadcasting

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[1]U.N. Doc. A/AC.105/p.v. 168, at 12 (1977).

satellites, the most important and controversial issue is that of freedom of information. In the field of remote sensing satellites, the conflicting opinions relate mainly to the question of whether the data obtained by these satellites should be disseminated internationally and made available to all countries or whether the sensing State should provide the information *only* to the sensed State.[2]

At this stage there is one great impediment to the adoption of rules by which limitations on national sovereignty in both fields are imposed; namely, an insufficient awareness of the fact that the immense benefits which can flow from the use of outer space will only be achieved at the expense of the absolute priority of national sovereignty. Although the conquest of space has not eliminated the pivotal importance of national interest, it has radically affected its dimension and objectives. The extent to which the national interest has been changed by this new medium is only vaguely realized. On the other hand it should be recognized that a universal acceptance of certain limitations on national sovereignty, necessary to enable the world community to draw the immense benefits flowing from the use of outer space, will, to a great extent, be dependent on an alleviation of the fear of the many States which at present lack the industrial and technological capabilities to participate in space activities. Their fear being that the freedom of outer space will be, in practice, only a freedom of the few who do possess these capabilities.

The urgent need to mitigate these fears, by measures directed toward a lessening of the present inequalities, has clearly been demonstrated by a recent event.

I. THE BOGOTA DECLARATION

On December 3, 1976, eight Equatorial States, at a conference in Bogota, adopted a Declaration[3] by which it was claimed that the segments of the geostationary orbit at a height of 36,000 km above sea-level formed an integral part of the territory over which the underlying State exercised sovereignty. This claim is based on the following arguments:

a) The geostationary orbit is a physical fact rising from the nature of our planet because its existence depends exclusively on its relation to gravitational phenomena caused by the Earth and for that reason should not be considered as part of outer space.

b) The geostationary orbit is a scarce national resource.

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[2] *See generally* Goedhuis, *Some Substantive and Procedural Issues Presently at Stake in Space Legislation*, 3 Zeitschrift für Luft- und Weltraumrecht 195, (1976), in which the present author comments on the different approaches to the solution of the problems.

[3] See the statements made by the U. S. delegate at the meeting of U.N. Legal Sub-Committee on Outer Space, on 6 April 1977. U.N. Doc. A/AC. 105/C.2/SR 281. ed. note.

c) The international community is now calling into question all the terms of international law laid down in the Outer Space Treaty of 1967, which were drawn up at a time when the developing countries could not count on adequate scientific advice. The terms, according to the Declaration, were prepared by the industrialized States for their own benefit.

d) As there is no definition of outer space, the provision in the Space Treaty regarding the nonappropriation of this space is inapplicable to the geostationary orbit.

These arguments call for the following comments:

a) The geostationary orbit is like any other repeated orbit except that the motion of the orbital vehicle is synchronized or nearly so with a particular location on the surface of the Earth. The geostationary orbit depends on properties of the Earth as a whole.[4]

b) Independent of the issue of whether the geostationary orbit is a natural resource[5], the elementary question is whether this orbit lies in outer space to which the fundamental principle of freedom for exploration and use applies. There is no intrinsic difference between this orbit and any other orbit.

c) It is difficult to accept the view that the international community is calling into question all the terms of the present rules of space law. The fundamental principle of freedom of outer space is based on the consensus that by this principle the interests of the whole world community are best served. Since this principle was accepted as a rule of positive international law, it has never been challenged by any State until the claim made by the equatorial countries. New arguments were put forward by the Colombian delegate, Mr. Aquilera, at the last meeting of the U.N. Committee on the Peaceful Uses of Outer Space. First, Mr. Aquilera referred to the fact that Colombia had not ratified the Outer Space Treaty. Second, he voiced the opinion that the principles of freedom and nonappropriation of outer space did not constitute peremptory norms of international law whose binding nature was independent of the formal conclusion of an international treaty.[6] These arguments also should be rejected. When considering the legal value of the two fundamental principles applicable to outer space, the decisive

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[4] *Cf.* U.N. Doc. A/AC.105/C.2/SR.281, at 2 (1977) (statement made by U.S. delegate, Mr. Stewart, during the 28th meeting of the U.N. Legal Sub-Committee of the Committee on the Peaceful Uses of Outer Space). *See also* U.N. Doc. A/AC.105/C.2/SR.269, at 9 (1977). Therein, Mr. Greenwood, the U.K. delegate, stated there was no validity in a claim based on the law of gravity because the gravity of the whole Earth kept the satellites in orbit and any attempt to subdivide gravity would be scientifically absurd.

[5] *See* U.N. Doc. A/AC.105/C.2/SR.281, at 2, 5 (1977). The U.S. delegate, Mr. Stewart, at the 28th meeting of the U.N. Legal Sub-Committee of the Committee on the Peaceful Use of Outer Space, expressed the view that the geosynchronous orbit was essentially a regime of satellite flight paths, not a physical natural resource. Mr. Stewart's view was contested by the Argentine delegate, Mr. Cocca.

[6] U.N. Doc. A/AC.105/p.v.173, at 56 (1977).

point is whether the requisite consensus on these principles has been manifested through the conduct of States, through express statements or acquiescence in the conduct or statements of others.

For a short time immediately after the first Sputnik was launched in October 1957, it appeared that the world would have to go through a period in which States claimed sovereignty over parts of outer space. However, in the last fifteen years, no State, either by acts or words, has put forward any such claims. On the contrary, they have explicitly and constantly acknowledged the binding character of the principles of freedom and nonappropriation.

The outstanding event in the legal field prior to the adoption of the Outer Space Treaty of 1967 was the unanimous acceptance by the General Assembly of the U.N. on December 13, 1963, of a Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space.[7] While consideration of the legal effect of Resolutions of the U.N. General Assembly lies outside the scope of this article, it is important to note that the statements of almost all the members of the U.N. who spoke during that Assembly attached to the Declaration an importance similar to that resulting from legally binding instruments.

> Thus, by expressing their will to be bound by the provisions of the document in question, they consented so to be bound, and there is no reason why they should not be held to it. For their intention seems to have been clear, the question of form, therefore, ceases to be of essence.[8]

In an article published a year before the adoption of the Outer Space Treaty, the present author, on the basis of an investigation of the attitude of bodies concerned with the development of space law (including the Institut de Droit International, the International Law Association and the David Davies Memorial Institute) and of the opinion of the leading commentators on space law, concluded that they all considered the two basic principles of freedom and nonappropriation of outer space as forming part of positive international law, thus confirming the attitude of the States.[9] Thus, insofar as these two principles are concerned, the Outer Space Treaty of 1967 did not create new law but codified already existing law. Consequently *every* State, independent of this Treaty, is bound by these two basic principles.

It is true that there is as yet no rule of positive international law by which a *precise* limit has been drawn between air space and outer space. However, based on the attitude of the overwhelming majority of States, the consensus is that to allow States to exercise

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[7]U.N.G.A. Res. 1962 (XVIII) (1963).

[8]M. Lachs, *The Law of Outer Space* 138 (1972). (Mr. Lachs was at that time President of the International Court of Justice).

[9]Goedhuis, *Reflections on the Evolution of Space Law,* 2 Neth. Int'l L. Rev. 112 (1966).

sovereignty at or above the lowest height of satellites put into orbit would, to an unacceptable extent, invalidate the principles of freedom and nonappropriation of outer space.

In addition to the fact that unilateral claims of sovereignty over parts of outer space would infringe upon the basic principles of space law, there remains unanswered the question of how the Equatorial States expect to be able to discharge, at a height of 36,000 km above the Earth, the authority indispensable to the exercise of sovereignty.

However unsubstantial both the geophysical and legal arguments invoked by the Bogota Declaration may be, this Declaration has indicated the existence of a deeply rooted fear in several of the signatory States that their interests under the present legal regime of outer space are insufficiently safeguarded. Therefore, it is highly desirable to develop means by which these fears can be allayed.

That there are difficulties to be encountered in arriving at universally acceptable rules of international law, by which the present inequalities of States in the use of outer space will be sufficiently mitigated, cannot be denied. The absence of such rules presents, as demonstrated by the Bogota Declaration, the danger of efforts being made toward dismantling the principle of freedom of outer space. The best, and presently, the only chance of warding off this danger lies in a stronger and speedier pursuit of international cooperation between the have's and the have-not's. The endeavors made by the U.N. in the last years point to a growing awareness of the imperative need of such cooperation.

II. INTERNATIONAL COOPERATION IN THE USE OF DIRECT BROADCASTING AND REMOTE SENSING SATELLITES

In the field of direct broadcasting satellites a promising beginning has been made by the Indian Satellite Instructional Television Experiment which is based on an agreement between India and the United States.[10] Under this agreement many thousands of Indian villages are receiving instructional programs by means of an American geostationary satellite. Under the auspices of the U.N. projects are prepared to provide, by means of such satellites, educational and welfare programs for, *inter alia*, the people of the South American countries, Iran and Indonesia.[11] A discussion of the unsettled problems arising in the application of direct broadcasting satellites, in

[10] *Id.*

[11] *See* Report on the Joint UN/UNESCO Regional Seminar on Satellite Broadcasting Systems for Education and Development, U.N. Doc. A/AC.105/160 (1975).

particular as regards the principle of freedom of information, lies outside the scope of this article.[12]

Attention should be drawn to one significant event which happened in February 1977 when the World Administrative Radio Conference of the ITU adopted an Agreement and Plan which permits only State-to-State direct broadcasting by satellites in the case of a few groups of countries which have agreed to share orbital positions and frequencies and have a common international beam.

During the 16th Session of the Legal Sub-Committee of the U.N. Committee on the Peaceful Uses of Outer Space, the British delegate, Mr. Greenwood, suggested that the results of the Conference had shown that there was no reason to fear that some countries with the technical ability and resources required could establish direct broadcasting by satellite to other countries against the wish of those countries.[13] Delegates of other countries, however, remarked that the ITU Plan, important though it was, did not solve all political and legal problems and that there was a need for clear guidelines to avoid disputes.[14] From the statements made during this session by several Equatorial States, it appears that the fears on which their claims of sovereignty are based have not been allayed by the ITU Agreement.

The need for increasing international cooperation has also been recognized with regard to the use of remote sensing satellites. In a speech to the U.N. General Assembly on September 18, 1969, President Nixon set forth the U.S. policy on the application of these satellites in which, *inter alia,* the following observations were made:

> We are just beginning to comprehend the benefits that space technology can yield here on Earth and the potential is enormous . . . . We have determined to take actions with regard to earth resources satellites and the purpose of these actions is that this program will be dedicated to producing information not only for the U.S. but also for the World Community . . . . Such an adventure belongs not only to one nation but to all mankind and should be marked not by rivalry but by the same spirit of fraternal cooperation that has long been the hallmark of the International Community of Science.[15]

In 1976 the U. S. delegate declared in a meeting of the Legal Sub-Committee of the U.N. Committee on the Peaceful Uses of Outer Space:

> Landsat II, like the first earth resources satellite, is serving as a focus for cooperation. Investigators from 45 Countries and 5 International organizations have been selected to

[12] *See* Goedhuis, *supra* note 2, at 203 (for a discussion of the conflicting views).

[13] U.N. Doc. A/AC. 105/C.2/SR.269, at 7 (1977).

[14] *See, e.g.,* U.N. Doc. A/AC.105/C.2/SR.276 (statement by the delegate of Sweden, Mr. Berg); U.N. Doc. A/AC.105/C.2/SR.275, at 4 (statement by the delegate of the Soviet Union, Mr. Kolossov).

[15] For the text of President Nixon's address, *see* 61 Dept. St. Bull. 297 (1969).

> conduct studies with data they obtain. More than ⅓ of the member states of this Committee are working with us in expanding the practical uses of remote sensing by satellite.[16]

At the last session of the Sub-Committee in 1977, the U. S. delegate referred to the latest developments in this field. The imagery collected in the U.S. from Landsat was available from the Earth Resources Center at Sioux Falls, South Dakota, which already served approximately 130 countries. He was especially pleased to note that not only the United States, but also Brazil, Canada and Italy were now operating ground stations to receive, process and disseminate Landsat data, and that other stations were under construction or being planned in Argentina, Chili, Iran and Zaire.[17] The Soviet delegate, Mr. Piradov, referred to the report of February 16, 1977,[18] in which the Soviet Union had announced that it was prepared to carry out work on remote sensing of the territory of other States and to make the resulting data available to the States concerned on the basis of the appropriate agreements. He also mentioned the signing of the Convention on the International Organization for Maritime Satellite Communication (INMARSAT) by which maritime communication by satellite was made available to all States.[19]

However important these developments are, the cooperative endeavors are not yet of sufficient magnitude to achieve a substantial reconciliation of the diverse national interests in outer space. The answer to the all important question whether mankind will meet the challenge raised by the conquest of space will depend on the readiness of States to develop international cooperation far beyond its present beginning.

Observations on the need to increase the volume and scope of international cooperation have been limited in this article to the two fields of space activities which *at this stage* are of the greatest practical significance. On the initiative of Argentina, discussions have started at the U.N. on the international problems arising from the exploitation of solar and other related energies. It is generally recognized that one of the most important resources which may be found in outer space is solar energy. A consideration of the far-reaching implications of this revolutionary technology, the development of which can be expected in a more or less distant future, lies outside the scope of this article. One thing can be said with certainty, however, for the development of this resource of outer space, international cooperation is a *conditio sine qua non*.[20]

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[16] *See* U.N. Doc. A/AC. 105/p.v.146, at 53 (1976); *see also* U.N. Doc. A/AC.105/p.v.146, at 3 (1976) (remarks by the delegate of India, Mr. Vellodi).

[17] U.N. Doc. A/AC.105/C.2/SR.268, at 6 (1977).

[18] U.N. Doc. A/AC.105/C.1/T96 (1977).

[19] U.N. Doc. A/AC.105/C.2/SR.266, at 5 (1977).

[20] *See* Williams, *International Law in the Pursuance of Sun Power as a New Source of Energy*, 5 Int'l Rel. 24 (1977).

In discussing the Bogota Declaration, it has been suggested that there can be no justification for basing a claim of sovereignty over parts of outer space on the absence of a rule of positive international law by which the term outer space is clearly defined. This Declaration has demonstrated, however, that this absence can lead to serious conflicts and that it therefore has strengthened the position of those countries which have stressed the need of arriving at such a rule by which air space and outer space are clearly demarcated. A survey of the various approaches to the solution of this problem would far exceed the confines of the present article but from an analysis of the discussions on this issue, some trends may be indicated.[21]

All States recognize *in principle* the need to clearly define the scope of applicability of the two fundamentally different legal regimes of air space and outer space but opinions diverge on the timing of laying the foundation of an accord. Although a survey of the present attitudes of States shows that there is as yet no agreement on the urgency in fixing a demarcation line between air space and outer space, there appears to be a considerable measure of agreement on the requirement that *any* definition of the medium where the freedom of exploration and use applies should be such as to allow this medium to fulfill its mission to the greatest possible extent. This requirement can only be met by preventing States from claiming sovereignty at or above the lowest height where satellites can be placed in orbit. Detailed studies made by COSPAR in the last few years have indicated that at a height of approximately 100 km above sea level satellites will not be able to continue in orbit and will fall to Earth. Thus, the support of a growing number of States for a demarcation of air space and outer space at this height is welcomed.

III. THE PROBLEM OF ACCESS TO OUTER SPACE

Insofar as the *content* of the national sovereignty over air space is concerned, a question of increasing importance arises. Is this sovereignty limited by a right of freedom of access for satellites in order to reach the "free" outer space?

This problem is at present not of immediate *practical* importance as the few States possessing space capabilities are endowed with sufficient territory and adjacent high seas to launch spacecraft without having to cross foreign air space. This situation will change, however, when technical developments in smaller or landlocked States will enable them to take part in space activities. If it is always difficult to separate *lex lata* from *lex ferenda* in law which is developing, then this difficulty is particularly great in assessing the legal situation as regards access to outer space.

A number of authoritative writers have expressed the opinion that there already exists a customary right of free passage for spacecraft through the territorial airspace of

[21] *See, Some Observations on the Problem of the Definition and for the Delimitation of Outer Space* (to be published in 2 Annals of Air and Space Law (1977)).

foreign States if such passage is needed to reach the *free* outer space. It has been suggested that the permission of free passage can be considered to be implied in the universal acceptance of the principle of freedom of exploration and use of outer space for which freedom of passage is a necessary condition.[22]

It is obvious that for all States to be able *on an equal basis* to draw the benefits flowing from the exploration and use of outer space, the recognition of a principle of free access is indispensable. Although developments in the last years point to a steady growth of a feeling of necessity for a rule of free passage, the essential elements for the creation of a rule of customary law allowing such passage are still lacking.

In this context an analogy can be drawn between the consequences of the lack of freedom of passage for aircraft through foreign air space above territorial waters, which might prevent them from drawing all the benefits flowing from the free air above the high seas, and the consequences entailed by a lack of freedom of passage for spacecraft which might prevent them from reaching the free outer space. The consequences in the latter case, however, might be of a much more serious nature. Insofar as air navigation is concerned, the lack of recognition of a right of transit as a rule valid *pleno jure gentium* does not make such navigation totally impracticable because of a frequently existing possibility of alternative routes; whereas, with regard to space activities, freedom of passage through territorial air space could be a *conditio sine qua non.*

The existence of a right of transit *in general* may be said to be dependent on two basic conditions. First, the State claiming such right must be able to justify it by reference to considerations of necessity. Second, the exercise of the right must be such as to cause no harm or prejudice to the State whose territorial air space is passed through.[23]

As regards the operation of spacecraft, the first condition will, to a growing extent, undoubtedly be fulfilled. As regards the second condition, however, the crucial problem is the assessment of whether a spacecraft presents a potential risk to the security of the State. Absent a prelaunching inspection system, a State, in the present phase of development of space technology, cannot know for certain whether a foreign satellite passing through its territorial airspace is peaceful, and opinions on the interpretation of this term are strongly divergent. One of the difficulties is that an *in essence* peaceful use of spacecraft often has military implications. It should not be forgotten that the difference in the *degree* of risk to the security presented by a foreign spacecraft passing over the surface territory of a State, is often not dependent on the height at which the spacecraft passes. A foreign spacecraft passing over a State at orbiting height can present as great a risk to its security as a foreign spacecraft passing through the territorial airspace of this State.

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[22] *See* Goedhuis, *supra* note 8, at 136.

[23] *Cf.*, Lauterpacht, *Freedom of Transit in International Law*, Transactions of the Grotius Society 313 (1958/59).

As regards *both* the basic conditions upon which the existence of a right of transit depends, there is a difference between transit by aircraft and by spacecraft. It does not seem too optimistic to expect that this difference may lead to States showing a greater inclination to agree on a right of transit for spacecraft than they have shown as regards a right of transit for aircraft.

A contribution to a possible, though *temporary,* solution of the problem has been made by the David Davies Memorial Institute. It provided that:

> [N]o spacecraft launched from the territory of any State may at any stage of its flight enter the air space of another State without the consent of that State; provided that such consent shall not be withheld if prior notice has been given to that State of the intended flight and it has been shown to its satisfaction that the flight is solely for scientific and peaceful purposes and shall be so controlled as to obviate the danger to aircraft.[24]

The U.N. Committee on the Peaceful Uses of Outer Space has until now refrained from an in-depth study of the problem of freedom of transit. It is therefore of particular importance that at the 168th meeting of the Committee, held on June 20, 1977, the Chairman, Mr. Jankowitsch, referring to the fact that in a short time economical space transportation will be available to the world with the advent of the space shuttle, suggested a study by the Committee as to what the ramifications of that advent will be and suggested that the Committee begin planning for the most beneficial use of that new capability.[25]

IV. CONCLUSION

Returning to the point of departure of this article, it is suggested that, due to the rudimentary stage of development of space activities, there is as yet an insufficient awareness of the extent to which the dimensions and objectives of the national interest have been transformed through the conquest of space.

The two main factors which have radically changed this interest are: the extraordinary interdependence of space activities and the growing convergence of interest in this field. The immense benefits which *can* flow from practical space applications cannot possibly be obtained without the willingness of States to accept limitations on their national sovereignty greater than those which, until now, have been obtained.

Further and especially *speedier* progress in international cooperation will be the indispensable prerequisite to achieve this aim.

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[24]Draft Code of Rules on the Exploration and Use of Outer Space, para. 2 (1962).

[25]U.N. Doc. A/AC.105/p.v.168, at 18 (1977).

LEGAL ISSUES INHERENT IN SPACE SHUTTLE OPERATIONS

*Gerald J. Mossinghoff**
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As this nation proceeds into the Space Shuttle era, the agencies most directly involved, particularly the National Aeronautics and Space Administration (NASA), will need to address and resolve a number of interrelated legal issues. Many stem from the role NASA will assume—at least initially—as the principal operator of the Space Shuttle.

In this article, nine of the more significant issues inherent in Space Shuttle operations are defined and their implications and possible resolution discussed at some length. The order in which the issues are presented does not reflect a judgment on the part of the authors of their relative significance.

I. DOES NASA HAVE AUTHORITY TO OPERATE THE SPACE TRANSPORTATION SYSTEM (STS) ON A "ROUTINE" BASIS?

The National Aeronautics and Space Act of 1958[1] [hereinafter NASAct] provides adequate statutory authority for NASA to operate the STS on a "routine" basis.

The purpose of the NASAct as expressed in section 102 is "to carry out and effectuate" the policies stated in that section, among which are:

> (1) The expansion of human knowledge of phenomena in the atmosphere and space;
>
> (2) The improvement of the usefulness, performance, speed, safety, and efficiency of aeronautical and space vehicles;
>
> (3) The development and operation of vehicles capable of carrying instruments, equipment, supplies, and living organisms through space;
>
> (4) The establishment of long-range studies of the potential benefits to be gained from, the opportunities for, and the problems involved in the utilization of aeronautical and space activities for peaceful and scientific purposes;

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[1] 72 Stat. 426; 42 U.S.C. § 2451 *et seq* (1970).

> (5) The preservation of the role of the United States as a leader in aeronautical and space science and technology and in the application thereof to the conduct of peaceful activities within and outside the atmosphere;
>
> . . . .
>
> (7) Cooperation by the United States with other nations and groups of nations in work done pursuant to this Act and in the peaceful application of the results thereof; and
>
> (8) The most effective utilization of the scientific and engineering resources of the United States, with close cooperation among all interested agencies of the United States in order to avoid unnecessary duplication of effort, facilities, and equipment.

Section 203 (a) of the NASAct provides that NASA, in order to carry out the purpose of this Act, shall:

> (1) plan, direct, and conduct aeronautical and space activities;
>
> (2) arrange for participation by the scientific community in planning scientific measurements and observations to be made through use of aeronautical and space vehicles, and conduct or arrange for the conduct of such measurements and observations; and
>
> (3) provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof.

The term "aeronautical and space activities" is defined in section 103 (1) as "(A) research into, and the solution of problems of flight within and outside the earth's atmosphere, (B) the development, construction, testing, and operation for research purposes of aeronautical and space vehicles, and (C) such other activities as may be required for the exploration of space." Section 103 (2) defines "aeronautical and space vehicles" as "aircraft, missiles, satellites, and other space vehicles, manned and unmanned, together with related equipment, devices, components, and parts."

In the legislative history of the NASAct, the following was set forth to explain the scope of the term "activities" in the phrase "aeronautical and space activities" in Section 103:

> This section, which defines 'aeronautical and space activities' and 'aeronautical and space vehicles,' embodies the substance of both the House and Senate versions but does so in a way which will ensure that these expressions can be used throughout the act without further question as to their meaning, inclusions, or exclusions.
>
> The purpose is to make clear that the act is concerned primarily with research, development, and exploration. The use of the word 'activities' is intended to be broad in the area of outer space because no one can predict with certainty what future requirements may be.
>
> It is not the intention of Congress, however, to construe activities so broadly as to include such things as the operation of commercial airlines, the control of air traffic, the fixing of airworthiness standards, the setting of air fares, or the assigning of certificates

> of public convenience and necessity. Whether, in time, the new Administration will run a regular transport route to another planet or to the moon is not a matter of current concern. But the term 'activities' should be construed broadly enough to enable the Administration and the Department of Defense, in their respective fields, to carry on *a wide spectrum of activities* which relate to *the successful use of outer space.* These activities would include scientific discovery and research not directly related to travel in outer space *but utilizing outer space,* and the development of resources which may be discovered in outer space. (emphasis supplied)[2]

Thus, while NASA was not intended to be a regulatory agency like the Federal Aviation Administration (FAA) or the Civil Aeronautics Board (CAB), or to be a government-owned commercial transport service like most non-U.S. flag international airlines (e.g., Air France, Lufthansa, Aeroflot, etc.), there can be no question that the providing of space launch and associated services related not only to the exploration but also to the utilization of outer space for purposes beneficial to humanity was contemplated by the drafters of the NASAct. The reusable Space Transportation System will simply be a more economical, efficient, and versatile way of doing what NASA has been doing for nearly two decades under the authority of the NASAct of 1958.

NASA is authorized to establish and charge fees for launch and associated services and to establish service standards under section 203(c) of the NASAct. In the performance of its functions the Administration is authorized:

> (1) to make, promulgate, issue, rescind, and amend rules and regulations governing the manner of its operations and the exercise of the powers vested in it by law;
>
> . . . .
>
> (5)to enter into and perform such contracts, leases, cooperative agreements, or other transactions as may be necessary in the conduct of its work and on such terms as it may deem appropriate, with any agency or instrumentality of the United States, or with any State, Territory, or possession, or with any political subdivision thereof, or with any person, firm, association, corporation or educational institution . . .
>
> (6) to use, with their consent, the services, equipment, personnel, and facilities of Federal and other agencies with or without reimbursement, and on a similar basis to cooperate with other public and private agencies and instrumentalities in the use of services, equipment, and facilities. Each department and agency of the Federal Government shall cooperate fully with the Administration, and any such department or agency is authorized, notwithstanding any other provision of law, to transfer to or to receive from the Administration, without reimbursement, aeronautical and space vehicles, and supplies and equipment other than administrative supplies or equipment.[3]

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[2][1958] U.S. Code Cong. & Ad. News, 3192.

[3]NASA's Shuttle services reimbursement policy for non-U.S. Government users appears at 14 C.F.R. § 1214.1, 42 Fed. Reg. 3829 (1977); for civil U.S. Government users and certain foreign users appears at 14 C.F.R. § 1214.2, 42 Fed. Reg. 8631 (1977); and for the Department of Defense users is incorporated in a Memorandum of Understanding dated March 7, 1977, NASA N.M.I. § 1052.204.

Finally, the Communications Satellite Act of 1962 [hereinafter the "Comsat Act"] provides that NASA shall:

> (3) assist the corporation [the Communications Satellite Corporation-Comsat] in the conduct of its research and development program by furnishing to the corporation, when requested, on a reimbursable basis, such satellite launching and associated services as the Administration [NASA] deems necessary for the most expeditious and economical development of the communications satellite system;
>
> . . . .
>
> (5) furnish to the corporation, on request and on a reimbursable basis, satellite launching and associated services required for the establishment, operation, and maintenance of the communications satellite system approved by the Commission [the Federal Communications Commission-FCC].[4]

The transition from expendable launch vehicles to the Space Transportation System will have no effect upon this statutory authority or responsibility. NASA will continue to have the necessary authority to develop and operate the STS routinely not only for launching its own payloads, but also for launching payloads of other U.S. Government agencies and departments, and for non-U.S. Government users, including users of foreign nationality and international organizations.

NASA has provided launch services on both a cooperative and a reimbursable basis for most of its nearly two-decade history. Many of the reimbursable launches have been among the most important in terms of the use or utilization (as opposed to the exploration) of outer space. On July 10, 1962, Telstar 1 was launched for the American Telephone and Telegraph Company (AT&T) from the Eastern Test Range (ETR) by an expendable Delta launch vehicle; it was the first satellite owned by a private concern. Telstar 2 was launched on May 7 the following year, also from the ETR by a Delta booster. On June 28, 1965, commercial telecommunications satellite service was begun, following the launch on April 6 of that year of Intelsat I, or "Early Bird," for the Communications Satellite Corporation (Comsat), operating as the manager of the global Intelsat system.[5] Since that time there have been 22 more launches of Comsat/Intelsat communications satellites,[6] plus six communications satellites for domestic United States service and three for maritime service.[7]

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[4]Communications Satellite Act of 1962, § 201(b), 76 Stat. 421, 47 U.S.C. §721(b) (1970).

[5]Under the Communications Satellite Act of 1962, Comsat acts as an agent to acquire launch services from NASA on behalf of the International Telecommunications Satellite Organization (Intelsat).

[6]This figure includes the launch of five spacecraft which for one reason or another failed to reach the proper orbit; the remainder were successful and consisted of the second, third, and fourth generations of Intelsat satellites.

[7]These satellites include two for Western Union, two for RCA, and five for Comsat General, a wholly-owned subsidiary of Comsat; two of the five Comsat General satellites are for domestic U.S. service, while the remaining three are for maritime service.

Throughout this time NASA has also provided reimbursable launch services to other U.S. Government agencies, such as the Department of Defense, the former Environmental Satellite Services Administration (ESSA), and the National Oceanic and Atmospheric Administration (NOAA). Also, launch services on either a cooperative or a reimbursable basis have been provided to foreign countries and to international organizations.

In recent years the reimbursable launches have begun to outnumber NASA's own launches (including NASA's cooperative launches with other countries or international organizations). In 1975, for example, there were 8 reimbursable launches out of a total of 19; in 1976 there were 12 out of 16.[8] In 1977 NASA expected to launch 17 out of 23 payloads on a reimbursable basis.[9]

All of NASA's activities, of course, are subject to the Congressional authorization and appropriation process, and Congress has each year specifically approved funds for NASA's launch activities, whether for NASA's own payloads or the payloads of other users, and whether such launches were done on a cooperative or a reimbursable basis. The reimbursable part of NASA's annual program is specifically delineated in the NASA budget and separated from the "direct" part (i.e., that part which is funded by NASA's own appropriations).[10]

The conclusion that NASA's authority under the NASAct is broad enough to cover both cooperative and reimbursable launch and related services is therefore reinforced by the annual Congressional approval of funding for such activities. It is a principle of statutory construction that while legislative acquiescence or inaction following a contemporaneous and practical interpretation of a particular statute may be *some* evidence that the legislature agrees with such an interpretation, positive action taken by the legislature based upon the interpretation is much more likely to be regarded as presumptive evidence of the correctness.[11] Furthermore, when such positive action takes the form of continuing annual appropriations based upon the interpretation in question, the probative force likewise increases, even in view of objections to the

[8]NASA Press Release No. 76-207, December 15, 1976, contains a list of the 1976 launches.

[9]NASA Press Release No. 77-2, January 7, 1977, contains a list of the planned 1977 launches.

[10] *See* The Budget of the United States Government 1978- Appendix, at 655, 659-660.

[11]Sutherland Statutory Construction, § 49.10 (Sands, ed., 4th ed., 1972) [hereinafter cited as "Sutherland"]. This principle was first applied by the U.S. Supreme Court in 1803 in the case of Stuart v. Laird, 5 U.S. (1 Cranch) 299, 309, 2 L.Ed. 115, 118 (1803), in which the Court, answering the objection that the Act of 1789 (1 Stat. 73, chap. 20) was unconstitutional insofar as it gave circuit powers to judges of the Supreme Court, stated that:

> practice and acquiescence under it for a period of several years, commencing with the organization of the judicial system, affords an irrefutable answer, and has indeed fixed the construction. It is a contemporary interpretation of the most forcible nature. This practical exposition is too strong and obstinate to be shaken or controlled. Of course, the question is at rest, and ought not now to be disturbed.

contrary.[12] Since the early 1960's Congress has been fully aware of NASA's interpretation of the NASAct as providing sufficient authority for NASA to launch non-NASA payloads on a cooperative or reimbursable basis; the resulting launch activities have been highly visible to the public and have taken place with full Congressional knowledge. Congress' continuing support of these activities through annual appropriations, therefore, has high probative value in establishing the correctness of NASA's interpretation of the NASAct in regard to such activities. Also, since the STS will be used to launch all such non-NASA payloads in the future, the annual

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In United States v. Midwest Oil Co., 236 U.S. 459, 472-73, 59 L.Ed. 673, 681, 35 S.Ct. 309 (1915), a certain long-continued practice of the President, with the acquiescence of Congress, relating to the disposition of public lands was at issue:

> It may be argued that while these facts and rulings prove a usage, they do not establish its validity. But government is a practical affair, intended for practical men. Both officers, lawmakers, and citizens naturally adjust themselves to any long- continued action of the Executive Department, on the presumption that unauthorized acts would not have been allowed to be so often repeated as to crystallize into a regular practice. That presumption is not reasoning in a circle, but the basis of a wise and quieting rule that, in determining the meaning of a statute or the existence of a power, weight shall be given to the usage itself—even when the validity of the practice is the subject of investigation.

Subsequent cases have reaffirmed this principle: Apex Hosiery Co. v. Leader, 310 U.S. 469, 84 L.Ed. 1311, 60 S.Ct. 982, 128 A.L.R. 1044 (1940); Sibbach v. Wilson & Co., 312 U.S. 1, 85 L.Ed. 479, 61 S.Ct. 422 (1941); Federal Trade Commission v. Bunte Bros., Inc. 312 U.S. 349, 85 L.Ed. 881, 61 S.Ct. 580 (1941); NLRB v. Seven-Up Bottling Co. of Miami, Inc., 344 U.S. 344, 97 L.Ed. 377, 73 S.Ct. 287 (1953); Alstate Const. Co. v. Durkin, 345 U.S. 13, 97 L.Ed. 745, 72 S.Ct. 565 (1953); Blau v. Lehman, 368 U.S. 403, 7 L.Ed. 2d 403, 82 S.Ct. 451 (1962). *See also* 73 Am. Jur. 2d *Statutes* §§ 169, 178, 179; (1970) and 82 C.J.S. *Statutes* §351, 357-360 (1970).

[12]In Tennessee Valley Authority v. Kinzer, 142 F.2d 833, 837 (6th Cir. 1944), the court upheld the Retirement System of the Tennessee Valley Authority partly on the basis of the subsequent and regular appropriation of funds by Congress:

> Moreover, Congress, by regularly appropriating funds to enable the Authority to make its contributions to the System, has demonstrated its intention that the statutory mandate is to be construed and understood in accordance with the settled construction placed upon it by the Authority, as disclosed by the Rules and Regulations setting up the Retirement System. The voting of such appropriations, in the face of the construction placed upon the Act by the Authority, has an effect similar to that resulting from the re-enactment of a statute, the provisions of which had, theretofore, been interpreted by regulations; they are deemed to have received legislative ratification and, thereby, to have become embedded in the law; and are to be given the same force and effect as the statute itself.

The repeated enactment by Congress of appropriations for a TVA project over objections that there was no legal authority to carry out the project supported the interpretation that such authority existed in United States ex rel. Tennessee Valley Authority v. Two Tracts of Land, 456 F2d 264 (6th Cir. 1972), *cert. denied* 409 US 887 (1972).

appropriations for the STS,[13] the purpose of which is and has been well known to Congress, have high probative value in establishing Congress' agreement with NASA's interpretation of the NASAct as providing adequate statutory authority to operate the STS on a routine basis. Finally, NASA's authority to provide launch services on a reimbursable basis to others under the NASAct has been recognized by the Department of Justice.[14]

II. WILL THE STS BE A "COMMON CARRIER"?

The Space Transportation System will not be a "common carrier" because it is not so authorized by federal statute and because it would conflict with international commitments already entered into by the federal government.

The NASAct, while providing NASA with authority sufficient to operate the STS on a "routine" basis, does not go so far as to give NASA authority to operate the STS, or any of the NASA expendable launch vehicle systems, as a common carrier. The legislative history of the NASAct makes this conclusion quite clear. Moreover, the Comsat Act does not in any way make NASA a common carrier. While the Comsat Act does create in section 201(b) a duty of NASA to provide "satellite launching and associated services" to Comsat, this duty relates only to Comsat and not to the general public. A common carrier, on the other hand, is one which holds itself out to the public

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[13] *See, e.g.*, Pub. L. No. 94-39 (89 Stat. 218), Pub. L. No. 94-116 (89 Stat. 581), Pub. L. No. 94-307 (90 Stat. 677), and Pub. L. No. 94-378 (90 Stat. 1095). Earlier NASA authorization and appropriations acts are cited in the Staff Report of the Committee on Aeronautical and Space Sciences, United States Senate, 94th Cong., 1st Sess. (Comm. Print March 11, 1975).

[14] In a letter to the Legal Adviser, Department of State, dated April 29, 1969, Mr. William H. Rehnquist, then Assistant Attorney General, Office of Legal Counsel, responded to a request for a Department of Justice opinion concerning two interrelated questions:

> (1) Under existing domestic law is there any legal obstacle or impediment to the provision of launch services by the National Aeronautics and Space Administration to a foreign government having a foreign operational domestic communications satellite system?
>
> (2) If NASA has authority to provide such services under our law may it do so independently of the Communications Satellite Corporation, whether acting as an independent United States corporation or as an agent for Intelsat?

In his letter Mr. Rehnquist concluded that:

> Although not specifically so stated in your letter, I understand your questions assume that such launch services would be provided on a 100% reimbursable basis. In these circumstances, it is our opinion that (1) there is no legal impediment to the provision of launch services by NASA if the President should direct such action; and (2) that launch services pursuant to such Presidential directive may be furnished independently of the Communications Satellite Corporation (Comsat).

as engaged in a certain type of transportation or other service which is available to the general public for compensation.[15] Also, although NASA does receive reimbursement for the costs of providing these launch services, this compensation is not intended to result in profit for NASA. Lastly, there is no law which compels NASA to provide launch and related services for all who would apply.[16]

NASA is not an "air carrier" under the Federal Aviation Act of 1958[17] [hereinafter FAAct]. First of all, the Shuttle is not an "aircraft" under the FAAct (see Issue 4 below), but even if it were, NASA would not be an "air carrier" engaging in "air transportation" and thus subject to economic regulation under Title IV of the FAAct ("Air Carrier Economic Regulation").[18]

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[15]As developed extensively in case law, a *private carrier* is one who undertakes by special agreement in a particular instance to transport property without being bound to serve every person who may apply. 13 C.J.S. *Carriers* § 4; 13 Am. Jur. 2d *Carriers* § 8 (1970). A *common carrier* is one who as a regular business transports personal property from place to place for all persons who may wish to employ him and pay his charges. What constitutes common carriage is a question of law; but whether one holds himself out as a common carrier is a question of fact. 13 C.J.S. *Carriers* § 3(a) (1970); 13 Am. Jur. 2d *Carriers* § 2. (1970). *See also,* note 40, *infra.*

Furthermore, NASA's statutory launch duty to Comsat under section 201(b) of the Comsat Act, 47 U.S.C. § 721(b) (1970), applies only to communications satellites which are part of the International Telecommunications Satellite Organization (Intelsat), of which Comsat is the United States' representative. Section 102(a), (b), and (c) of the Comsat Act, 47 U.S.C. § 701(a) (b) (c) (1970). Domestic communications satellite systems are not covered by this statutory duty, although it should be noted that the Comsat Act does allow the global (Intelsat) system to be used for domestic communications services "where consistent with the provisions of this [the Comsat] Act" and, in addition, allows "the creation of additional communications satellite system, if required to meet unique governmental needs or if otherwise required in the national interest." Section 102(d) of the Comsat Act, 47 U.S.C. § 701(d) (1970).

[16]Where Congress intends that a statutorily created entity is to be a common carrier the statute is typically quite explicit on that point. *See* note 20, *infra.* It should be noted that although NASA is not a common carrier under the Comsat Act or any other law, Comsat *itself* is a "common carrier within the meaning of section 3(h) of the Communications Act of 1934. . . ." Section 401 of the Comsat Act, 47 U.S.C. § 741 (1970).

[17]72 Stat. 731, 49 U.S.C. § 1301 (1970).

[18]Section 401(a) of the FAAct, 49 U.S.C. § 1371(a) (1970), provides that "[n]o air carrier shall engage in any air transportation unless there is in force a certificate [of public convenience and necessity] issued by the [Civil Aeronautics] Board authorizing such air carrier to engage in such transportation."

An "air carrier" is defined in section 101(3) as "any citizen of the United States who undertakes, whether directly or indirectly or by a lease or any other arrangement, to engage in air transportation. . . ." A "citizen of the United States" is defined in section 101(13) to mean:

> (a) an individual who is a citizen of the United States or of one of its possessions, or (b) a partnership of which each member is such an individual, or (c) a corporation or association created or organized under the laws of the United States or of any State, Territory, or possession of the United States, of which the president and two- thirds or

That there is no United States statutory law which makes NASA a common carrier or would even allow NASA to operate the STS as a common carrier is consistent with the traditional governmental role as a regulator of non-U.S. Government entities which are

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> more of the board of directors and other managing officers thereof are such individuals and in which at least 75 per centum of the voting interest is owned or controlled by persons who are citizens of the United States or of one of its possessions.

Thus, a U.S. Government agency cannot be an "air carrier" under the FAAct. This fact is seen even more clearly vis-a-vis the definition of "foreign air carrier," which can include governmental entities of foreign countries:

> [A]ny person, not a citizen of the United States, who undertakes, whether directly or indirectly or by lease or any other arrangement, to engage in foreign air transportation. Section 101(19) of the FAAct.

"Person" is defined in section 101(29) to include a "body politic," so while "air carrier" cannot include agencies of the U.S. Government, "foreign air carrier" can include agencies of foreign governments.

Another aspect of the definition of "air carrier" which would not apply to STS operations is that air carriers engage in "air transportation," defined in section 101(10) of the FAAct as meaning "interstate, overseas, or foreign air transportation or the transportation of mail by aircraft." These terms are further defined in section 101(21):

> "Interstate air transportation," "overseas air transportation," and "foreign air transportation," respectively, mean the carriage by aircraft of persons or property as a common carrier for compensation or hire of the carriage of mail by aircraft, in commerce between, respectively—
>
> (a) a place in any State of the United States, or the District of Columbia, and a place in any other State of the United States, or the District of Columbia; or between places in the same State of the United States through the airspace over any place outside thereof; or between places in the same Territory or possession of the United States, or the District of Columbia;
>
> (b) a place in any State of the United States, or the District of Columbia, and any place in a Territory or possession of the United States; or between a place in a Territory or possession of the United States, and a place in any other Territory or possession of the United States; and
>
> (c) a place in the United States and any place outside thereof;
>
> whether such commerce moves wholly by aircraft or partly by aircraft and partly by other forms of transportation.

The NASA Shuttle, as already mentioned, will be neither a "common carrier" nor an "aircraft." The mode of conveyance in which the STS will engage is best described by the first two words of its name: *space transportation*, a *sui generis* method of conveyance.

common carriers.[19] Of course, the U.S. Government has in the past created common carriers, but such entities are specifically *not* parts of the U.S. Government and are created by statutory authority expressly stating that the newly created entities are to be common carriers.[20]

Some attention should be given at this point as to *why* NASA should not operate the STS as a common carrier, since it would be possible theoretically to amend the NASAct to provide NASA with such authority and responsibility. The United States has made several international commitments which conflict with the concept that common carriers must not discriminate among customers in offering and providing services, but must serve all members of the public equally. These include the Spacelab Agreement[21] with the European Space Agency (ESA) and the 1967 Outer Space Treaty[22], neither of which would allow the United States to operate the STS as a common carrier. [The 1972 President's Launch Policy applicable to foreign countries and international organizations, and why that policy does not express or imply that NASA is a common carrier are discussed in detail in Issue No. 3, *infra.*]

The Spacelab Agreement, for example, provides in Article 7(A) that the United States "shall, consistent with international agreements and arrangements, make the Space Shuttle available for SL (Spacelab) missions (experiments and applications) of the European Partners and their nationals on either a cooperative or cost-reimbursable

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[19]Exceptions to this may occur during war or other national emergency, such as when the U.S. Government took over the control of certain railroads and other transportation systems under the Federal Control Act of March 21, 1918, Chap. 25, 40 Stat. 451. See Missouri Pac R. Co. v. Ault, 256 U.S. 554, 41 S.Ct. 593, 65 L.Ed. 1087 (1921). *See also* Virginia Ry. Co. v. Mullens, 271 U.S. 220, 46 S.Ct. 526, 70 L.Ed. 915 (1926).

[20]Comsat and the National Rail Passenger Corporation (Amtrak) are examples. Comsat, created by the Comsat Act *(supra* note 4), is not "an agency or establishment of the United States Government" but is "deemed to be a common carrier within the meaning of section 3(h) of the Communications Act of 1934." Sections 301 and 401 of the Comsat Act of 1962, 47 U.S.C. §§ 731, 741 (1970). Amtrak, created by the Rail Passenger Service Act of 1970 (84 Stat. 1328, 45 U.S.C. § 501 (1970)), is also not "an agency or establishment of the United States Government" but is "deemed a common carrier by railroad" subject, with certain exceptions, to the Interstate Commerce Act. Sections 301 and 306(a) of the Rail Passenger Service Act of 1970, 45 U.S.C. §§541, 546(a) (1970).

[21]Agreement Between the Government of the United States of America and Certain Governments, Members of the European Space Research Organization, for a Cooperative Programme Concerning the Development, Procurement and Use of a Space Laboratory In Conjunction With the Space Shuttle System, done at Neuilly-sur-Seine August 14, 1973, entered into force for the United States August 14, 1973, 24 U.S.T. 2049; T.I.A.S. No. 7722. Since the agreement was concluded, ESRO has been succeeded by the European Space Agency (ESA), which is likewise bound by the Spacelab Agreement.

[22]Treaty on Principles Governing the Activities of States In the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, done at Washington, London, and Moscow, January 27, 1967; entered into force for the United States October 10, 1967. 18 U.S.T. 2410; T.I.A.S. No. 6347; 610 U.N.T.S. 205 (1967).

basis." Article 7(B) establishes in the following terms that the ESA countries involved in the Spacelab program with NASA shall be given preferential consideration for use of Spacelab:

> In regard to space missions of the European Partners, the Government of the United States of America shall provide access for use of SLs developed under this cooperative programme for experiments or applications proposed for reimbursable flight by the European Partners, *in preference to those of third countries* considering, in recognition of the participation of the European Partners in this cooperative programme, that this will be equitable in the event of payload limitation or scheduling conflicts. Experiments or applications proposed for cooperative flight will be selected on the basis of the merit of each proposal in accordance with continuing United States policy; such proposals of the European Partners *will be given preference over the proposals of third countries provided their merit is at least equal to the merit of the proposals of third countries.* The European Partners will have an opportunity to express their views with respect to the judgement of merit regarding their cooperative proposals. (emphasis added)

Lastly of interest at this point, Article 7(F) states that the United States will provide Spacelab flight crew opportunities to nationals of the ESA countries involved in the Spacelab program with NASA in connection with their space missions involving a Spacelab. Also, "it is contemplated that a European crew member will be included in the flight crew" of the first Spacelab flight. The United States has no such commitment to any other countries.[23]

The Outer Space Treaty provides in the first sentence of Article VI that States Parties:

> shall bear international responsibility for national activities in outer space . . .whether such activities are carried on by governmental agencies or by non- governmental entities, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty.

Under this provision, the United States Government must bear responsibility for the activities of NASA and any other U.S. Governmental agency which conducts space activities, such as NOAA, as well as non-governmental entities, such as the Communications Satellite Corporation (Comsat) and corporations involved in domestic

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[23]Under NASA's Shuttle services reimbursement policies, *supra* note 3, foreign users "who have made substantial investment in the STS program, i.e., European Space Agency (ESA), ESA member or observer nations participating in Spacelab development, and Canada, when conducting experimental science or experimental applications missions with no near-term commercial implications" are treated the same for reimbursement purposes as civil U.S. Government users. Canada's investment in the STS program is made under an Agreement Between the United States of America and Canada concerning Space Cooperation: Remote Manipulator System, entered into force June 23, 1976, T.I.A.S. No. 8400.

U.S. communications satellite activities, such as Western Union, RCA, and Comsat General.[24]

Sentences two and three of Article VI of the Outer Space Treaty provide that:

> The activities of nongovernmental entities in outer space . . . shall require authorization and continuing supervision by the appropriate State Party to the Treaty.
>
> When activities are carried on in outer space . . . by an international organization, responsibility for compliance with this Treaty shall be borne both by the international organization and by the States Parties to the Treaty participating in such organization.

Sentence two requires the United States to insure that the necessary and proper steps are taken to authorize and continuously supervise any activities of U.S. nationals (i.e., "nongovernmental entities" like persons, partnerships, corporations, etc.) in outer space. Sentence three provides for concurrent responsibility between the United States and any international organization—as well as the other States participating in that organization—for activities in outer space conducted by such organization.

Article VI, in short, "is designed to ensure responsibility for space activities, inherently international in nature, at the governmental level."[25] If the United States launches a payload for either a U.S. national which is not a U.S. Governmental entity, therefore, or for an international organization in which the U.S. is a participant, the U.S. shall bear responsibility for any subsequent space activities of such national or organization just as it bears responsibility for space activities of entities which are part of the U.S. Government itself.

Article VII of the Outer Space Treaty provides as follows:

> Each State Party to the Treaty that launches or procures the launching of an object into outer space . . . and each State Party from whose territory or facility an object is launched, is internationally liable for damage to another State Party to the Treaty or to its natural or juridical persons by such objects or its component parts on the Earth, in air space or in outer space. . . .

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[24] *See supra* note 20 on Comsat's legal status under U.S. municipal law. Internationally, under the Intelsat Agreement (opened for signature at Washington, August 20, 1971, 23 U.S.T. 3813, T.I.A.S. 7532), Comsat acts as technical and operational manager of Intelsat until February 12, 1979, six years after the date of entry into force of the Intelsat Agreement, after which a new technical and operational management arrangement must be worked out. *See* Articles XI and XII of the Intelsat Agreement; and Aviation Week and Space Technology, March 15, 1976, at 77. The satellites used by Intelsat are owned by Intelsat.

Western Union, RCA, and Comsat General (a wholly-owned subsidiary of Comsat) own and operate their own satellites, while a fourth corporation, American Satellite Corporation (owned by Fairchild Industries Inc.), leases capacity from the Western Union satellites. Business Week, May 31, 1976, at 25.

[25] Senate Committee on Aeronautical and Space Sciences, Report on Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, Comm. Print, 90th Cong., 1st Sess. 28 (March 1967).

This provision indicates that the concern of the United States in launching any object into outer space extends beyond the successful insertion of such object into the desired orbit, even though the object is launched for a non-governmental U.S. entity (such as Comsat) or a foreign state or international organization. The 1972 Liability Convention elaborates upon this matter.[26]

Moreover, Article IX of the Outer Space Treaty requires the United States to consider the use to which any satellite which it launches is put, even if the United States Government itself will not own or operate the satellite in question. Thus, the United States, or any State providing launch services, has responsibilities beyond the successful launching of a satellite, responsibilities which may last the lifetime of the satellite.[27]

As a technical point, a common carrier's legal responsibilities generally end with the safe delivery of the goods to the final destination,[28] which for the STS would mean insertion into the proper orbit, but the United States has responsibilities beyond that even if the satellites are actually owned and operated by non- governmental entities of U.S. nationality (such as Comsat) or by foreign countries or international organizations.

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[26]Convention on International Liability for Damage Caused by Space Objects, done at Washington, London, and Moscow, March 29, 1972; entered into force for the United States October 9, 1973. 24 U.S.T. 2389; T.I.A.S. No. 7762. In the Liability Convention, the provisions prescribing liability are usually directed at the "launching State," which is defined as a "State which launches or procures the launching of a space object" and a "State from whose territory or facility a space object is launched." Article I (c). Subsequent provisions specify the types of liability which apply in various situations and the apportionment of liability in situations involving more than one launching State.

[27]Article IX of the Outer Space Treaty, *supra* note 22, contains further prescriptions relating to the general matter of State responsibility in outer space. States Parties to the Treaty shall be guided by the principle of cooperation and mutual assistance in the exploration and use of outer space and shall conduct all their outer space activities "with due regard to the corresponding interests of all other States Parties to the Treaty." They "shall pursue studies of outer space, including the Moon and other celestial bodies, and conduct exploration of them so as to avoid their harmful contamination and also adverse changes in the environment of the Earth resulting from the introduction of extraterrestrial matter and, where necessary, shall adopt appropriate measures for this purpose." A State Party which "has reason to believe that an activity or experiment planned by it or its nationals in outer space . . .would cause potentially harmful interference with activities of other States Parties in the peaceful exploration and use of outer space. . .shall undertake appropriate international consultations before proceeding with any such activity or experiment." If a State Party "has reason to believe that an activity or experiment planned by another State Party in outer space. . .would cause potentially harmful interference with activities in the peaceful exploration and use of outer space," it "may request consultation concerning the activity or experiment."

[28]The basic duty of a common carrier to make final delivery before being relieved of its legal responsiblities is very well-established. Gorton, *infra* note 40, at 101, 114. See Railroad Co. v. Manufacturing Co., 83 U.S. (16 Wall) 318, 21 L.Ed. 297 (1872); Railroad Co. v. Pratt, 90 U.S. (22 Wall) 123, 22 L.Ed. 827 (1874); Pratt v. Railway Co., 95 U.S. 43, 24 L.Ed. 336 (1877); Insurance Co. v. Railroad Co., 104 U.S. 146, 26 L.Ed. 679 (1881); and N. Pa. R. Co. v. Commercial Nat'l Bank, 123 U.S. 727, 31 L.Ed. 287, 8 S.Ct. 266 (1887). Further citations to cases discussing this basic rule, as well as its many nuances can be found at 13 Am. Jur. 2d *Carriers* §§ 395-414; and 13 C.J.S.*Carriers* §§ 159-86.

Since treaties to which the United States is bound are "the supreme law of the land,"[29] the commitments discussed above take precedence over any conflicting common law principles, such as common carrier status.[30] Therefore, the STS should not be operated as a common carrier in order that the United States be able to carry out most effectively its international commitments relating to activities in outer space.

III. HOW IS THE PRESIDENT'S LAUNCH POLICY OF 1972 RELATED TO THE SELECTION OF MISSIONS AND PAYLOADS FOR THE STS?

There are two aspects of this question: (a) the general applicability of the President's Launch Policy of 1972[31] [hereinafter the "Launch Policy"] to the STS and (b) the fact that no common carrier status is expressed or implied for NASA in the Launch Policy.

A. The General Applicability of the Launch Policy to the STS

On October 9, 1972, the President announced a policy whereby the United States would provide, on a nondiscriminatory, cooperative or reimbursable basis, satellite launch assistance to other countries and international organizations. This new policy, in effect, was actually an extension to other countries of the launch policy the United States had publicly announced in regard to the European Space Conference almost a year earlier.[32] It addressed four main points:

—the availability of launch services vis-a-vis
the conditions under which they will be provided;

—the location of launch sites involved;

—the financial conditions; and

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[29]U.S. Const. art. 6, cl. 2.

[30]It is true that if the STS were legally able to be operated as a common carrier (which, as stated earlier, would require amendment of the NASAct), common law principles would have to bow to any conflicting treaty provisions. *See e.g.*, Indemnity Ins. Co. of North America v. Pan American Airways, 58 F. Supp. 338 (S.D.N.Y. 1944) (public policy against contractual limitation of liability by common carriers must bow to the overriding policy of Warsaw Convention); and Block v. Compagnie Nationale Air France, 299 F. Supp. 801 (N.D. Ga. 1964) (Warsaw Convention limitations on liability of common carriers override state public policy).

[31]The Launch Policy can be found in the Department of State Bulletin, November 6, 1972, at 533-34.

[32]The public announcement of the European launch assistance policy was made on November 1, 1971, by the State Department; however, the U.S. policy was first formally presented to the European Space Conference in a letter dated September 1, 1971, from Under Secretary of State for Political Affairs U. Alexis Johnson to Minister Theo Lefevre, Chairman of the European Space Conference. Text of the announcement and letter, as well as of a "summary of amplifying comments" can be found at Department of State Bulletin, November 29, 1971, at 624.

—the matters of priority and scheduling.

Under Provision I of the Launch Policy, United States launch assistance will be available to interested countries and international organizations for satellite projects which are for peaceful purposes and are consistent with obligations under relevant international agreements and arrangements. The launch assistance is subject to these additional conditions:

> If the satellites to be launched are intended to provide international public telecommunications services, the United States will inquire of the International Telecommunications Satellite Organization (Intelsat) whether Intelsat makes a favorable recommendation in accordance with Article XIV of the Intelsat definitive arrangements.[33] If Intelsat does make a favorable recommendation, the United States will provide the launch assistance. If, however, there is no favorable recommendation by Intelsat, the United States will still provide the launch assistance if (1) the United States had supported the proposed system within Intelsat and (2) the country or international entity requesting the assistance "considers in good faith that it has met its relevant obligations under Article XIV of the definitive arrangements." Finally, if there is no favorable Intelsat recommendation and if the United States had not supported the proposed system within Intelsat, the United States will decide whether to provide the requested launch assistance "after taking into account the degree to which the proposed system would be modified in the light of the factors which were the basis for the lack of support within Intelsat."
>
> If satellites to be launched in the future are operational and are involved in applications "which do not have broad international acceptance," the United States will not favorably consider requests for launch assistance until "broad international acceptance has been obtained."[34]

Although there was no further elaboration of the provisions of the President's Launch Policy, a "Summary of Amplifying Comments" was provided with the text of the September 1, 1971, letter from the State Department to the European Space

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[33]Article XIV of the Intelsat definitive arrangements contains provisions on the rights and obligations of Intelsat members which desire to establish, acquire, or utilize space telecommunications facilities separate from the Intelsat facilities for various purposes, domestic or international in nature. Agreement Relating to the International Telecommunications Satellite Organization (INTELSAT), with annexes, done at Washington, August 20, 1971; entered into force for the United States February 12, 1973. 23 U.S.T. 3813; T.I.A.S. No. 7532.

[34]*Supra* note 31.

Conference when such letter was published on November 1, 1971, outlining the European launch policy.[35] Since the European launch policy was very similar to the President's Launch Policy announced less than one year later, the "Summary of Amplifying Comments" [hereinafter the "Summary"] may be used to elaborate upon the provisions of the President's Launch Policy.[36]

Provision II is addressed to the location of the launch sites involved. United States launch assistance under the Launch Policy will be available, consistent with U.S. laws, either from U.S. launch sites (through the acquisition of U.S. launch services on a cooperative or reimbursable basis) or from foreign launch sites (by purchase of an appropriate U.S. launch vehicle). In regard to launchings from foreign sites, the United States will require assurance that the launch vehicles will not be made available to third parties without prior agreement of the United States. The Summary's only comment in relation to this provision is that U.S. laws are intended to recognize existing treaty obligations, like the 1967 Outer Space Treaty, and domestic legislation such as that affecting exports. The Intelsat agreement is not a treaty and, therefore, constitutes an international undertaking of the United States which is consistent with existing U.S. law but does not create new U.S. law.[37]

Provision III deals with financial conditions for reimbursable launch services from U.S. launch sites and simply states that foreign users will be charged on the same basis as comparable non-U.S. Government domestic users for such services. The Summary had nothing to say in regard to this point, which is quite straightforward, with, perhaps, the only additional comment needing to be made about the word "comparable." This would mean that a foreign government or international organization would be charged on the same basis, all other things being equal, as domestic U.S. (non-governmental) users which have already purchased NASA launch services on a reimbursable basis.[38]

Provision IV, the last of the four main points of the Launch Policy, provides that the priority and scheduling for launching foreign payloads from U.S. launch sites will be dealt with on the same basis as that for U.S. launches. Each launching will be treated in terms of its own requirements and as an individual case. When it becomes known when a payload will become available and what its launch window requirements will be, the launching will be scheduled for that time. Should a conflict arise, the United States will consult with all interested parties in order to arrive at an equitable solution. The Summary provides no additional comments on this provision.

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[35] *Supra* note 32.

[36] *Supra* note 32.

[37] *Supra* note 32.

[38] *Supra* note 24.

In summation, regarding the general applicability of Launch Policy to the STS, it can be said that although only expendable boosters were in use at the time the Launch Policy was announced, there is nothing contained in the terms of the policy which would make it inapplicable to the Space Transportation System, which was being planned when the Launch Policy was announced.[39] In fact, the STS will provide the means for more launch assistance to other countries and international organizations and, hence, will most likely cause a greater use of the Launch Policy. The Shuttle's reuseability, versatility, and flexibility will be prime factors in regard to this increased use.

B. The Launch Policy Neither Expresses nor Implies Common Carrier Status for NASA

As was discussed in Issue No. 2, NASA is not a common carrier and would not be able to operate the STS as a common carrier under existing U.S. statutory law. It should, consequently, be made clear at this point that the President's Launch Policy also neither expresses nor implies that NASA is a common carrier, either in regard to the expendable launch vehicles (which have been used for nearly two decades) or to the new STS.

The President's Launch Policy, although a public statement of policy to all foreign countries and international organizations offering launch services on a generally nondiscriminatory basis, does require the United States to give certain consideration to the opinions of its Intelsat partners in situations involving proposed international public telecommunications services. The United States must also consider whether any future operational satellite applications have broad international acceptance before it will favorably consider requests for launch assistance for such satellite projects, namely, that the projects be for peaceful purposes, that they be consistent with obligations under relevant international agreements and arrangements, and that the launch assistance be consistent with U.S. laws. Launchings from foreign sites are subject to the additional requirement that the United States will require assurance that the launch vehicles will not be made available to third parties without prior agreement of the United States.

All of these conditions expressed in the Launch Policy are inconsistent with the general concept of common carrier, which involves, *inter alia,* a duty to provide the service in question to all who may apply *without discrimination.*[40] Also, these conditions require that NASA have the legal right to inspect the potential Shuttle payloads and

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[39]It should be noted that since no Shuttle missions will, for the foreseeable future, be launched from outside the United States, the language of Provision II relating to launchings under the Launch Policy but from foreign sites is inapplicable.

[40]This principle of the legal status of a common carrier is basic and well-established from seventeenth century England:

> The common carrier "is under a public duty to carry for every one, under certain conditions, usually of his own making, so that if he refuses to carry within these limitations he is liable." He is bound to receive and transport all freight tendered, according to the custom and usage of their business. To carry out his service duty the

obtain some type of assurance from those requesting the launch services as to the exact nature of the payloads and their true and complete functions in outer space; this, in fact, has been the case with STS.[41] Generally, common carriers, in absence of a special statute, do not have the right to require knowledge of the character of the goods offered

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> common carrier at common law is not allowed to refuse transportation for certain persons except in some cases (in other words he cannot freely choose his customers), he is not allowed to charge unreasonable rates (that would in fact be another way to refuse to carry) and he has to provide reasonable facilities (which is true particularly for the railways).
>
> The common carrier's basic duty is to accept and carry impartially for all who wish to engage his services. "Originally the common law courts treated actions for non-feasance and mis-feasance as based on tort which required the assumpsit that the defendant had set himself out to perform or to perform with skill, as the case may be, and that assumpsit might be represented by the fact that the defendant was exercising a common calling. But, by the seventeenth century a failure to perform the duties of serving all and sundry and of serving with skill came to be regarded as a breach of contract. Hence a person seeking redress had the opporutnity of proceeding by alternative course of action. He could bring an action on the case sounded in tort or he could allege breach of contract, for the duties of a person in a common calling came to be regarded as terms of an implied contract."
>
> Thus a common carrier may not carry for one and refuse to carry for another, but instead he must perform his duty without discrimination, and theoretically, at least, in the order in which the applications are made. (footnotes omitted)

Lars Gorton, *The Concept of the Common Carrier in Anglo-American Law* 103-105 (Gothenburg Maritime Law Association 1971). Beyond this basic duty, however, there have developed many and often complicated nuances which are beyond the scope of this discussion. See the cases collected in 13 Am. Jur. 2d *Carriers* §§ 174-224 (1964) and 13 C.J.S. *Carriers* §§348-97 (1939). The basic common law duty of a common carrier not to discriminate remains to this day, although the duty in the United States is usually enforced through federal regulatory agencies applying federal statutes addressed to common carriage. *See e.g.,* A.L. Mechling Barge Lines, Inc. v. U.S., 376 U.S. 375, 84 S.Ct. 874, 11 L.Ed. 2d 788 (1964), *reh. den'd* 377 U.S. 960 (1964); and American Trucking Assocs. v. Atchison, Topeka & Santa Fe, 387 U.S. 397, 87 S.Ct. 1608, 18 L.Ed. 2d 847 (1967), *reh. den'd* 389 U.S. 889 and 389 U.S. 892 (1967).

[41]Under NASA's reimbursement policies *(supra* note 3) all users "will be required to furnish NASA with sufficient information to verify peaceful purposes and to insure Shuttle safety and NASA's and the U.S. Government's continued compliance with law and the Government's obligations." 14 C.F.R. § 1214.104(b) (1977) and 14 C.F.R. § 1214.204(b) (1977). (N.M.I.) § 8610.8, ¶6(b) (January 21, 1977), and (N.M.I.) § 8610.9, ¶6(b) (February 11, 1977).

With respect to commercial users of the Shuttle, NASA's reimbursement policies specifically provide that:

> NASA will not acquire rights to inventions, patents or proprietary data privately funded by a user, or arising out of activities for which a user has reimbursed NASA under the policies set forth herein. However, in certain instances in which the NASA Administrator has determined that activities may have a significant impact on the public health, safety or welfare, NASA may obtain assurances from the user that the results will be made available to the public on terms and conditions reasonable under the circumstances. 14 C.F.R. § 1214.104(a) (1977). (N.M.I.) § 8610.8, ¶6a.

to them for transportation or to inspect such goods for themselves as a condition of receiving and transporting them.[42]

IV. WHAT WILL BE THE STATUS OF THE SPACE SHUTTLE UNDER THE FEDERAL AVIATION ACT OF 1958?

In its report on the "Status and Issues Relating to the Space Transportation System" (B-183134), the General Accounting Office (GAO) identified as an issue that needed to be resolved, the question of whether the Space Shuttle could be considered to be an aircraft within the meaning of section 101(5) of the Federal Aviation Act of 1958.[43] The NASA Office of the General Counsel had previously advised the NASA Office of Space Flight that, based upon the NASAct and other relevant authority, the Shuttle would be considered a space vehicle, and *not* an aircraft within the meaning of the FAAct. Given the GAO question, however, the matter was referred to the Chief Counsel of the Federal Aviation Administration (FAA). In his response to the NASA General Counsel of March 11, 1977, the FAA Chief Counsel concluded that for the purpose of the FAAct respecting applicability of the Federal Aviation Regulations (FARs), the Space Shuttle is not an aircraft. The statutory interpretation leading to and expanding upon this conclusion is set forth in the FAA response on 11 March 1977, as follows:

> You have raised a question respecting the status of the NASA Space Shuttle under the Federal Aviation Act of 1958 (FAAct). Specifically, you have inquired as to whether we consider the Shuttle to be an "aircraft" within the meaning of section 101(5). It is the view of this office that for the purposes of the FAAct respecting applicability of the Federal Aviation Regulations (FARs), the Space Shuttle is not an aircraft.
>
> That section of the FAAct reads as follows:
>
> > "Aircraft" means any contrivance now known or hereafter invented, used, or designed for navigation of or flight in the air.
>
> While any man-made object moving through the air might arguably be called an aircraft, it is necessary to examine the legislative intent and purpose behind the

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Thus, any proprietary information to verify peaceful purposes and insure Shuttle safety, in order to be adequately protected, could be supplied to NASA as privileged and confidential under appropriate safeguards.

[42]There are exceptions to this general rule, such as when the common carrier has reasonable ground to suspect that the goods are of dangerous or illegal character. *The Nitroglycerine Case* (Parrot v. Wells Fargo & Co.) 82 U.S. (15 Wall.) 524, 535-36 (1872). *See also* other cases collected at 13 Am. Jur. 2d *Carriers* § 238 (1964).

[43]72 Stat. 731; 49 U.S.C. § 1301 (1970); 13 C.J.S. *Carriers* § 28 (1939).

> regulatory scheme in the FAAct. It is undoubtedly clear that a major purpose of the FAAct was to unify control and management of the air space in a single agency. Foremost in the minds of the drafters were military and civilian airplanes. The idea then that rockets or spacecraft would routinely traverse the air space was mere speculation only months after Sputnik I was launched. In fact, the statutory creation of NASA, as you are well aware, was barely one month earlier than the effective date of the FAAct.
>
> To date, the issue of whether a craft is a space vehicle or an aircraft for purposes of the FARs has been largely academic. The operational characteristics of the Space Shuttle and the amount of time it will be in the navigable air space have altered the circumstances somewhat. We understand that the Shuttle will have maneuvering characteristics similar to a glider. It will use control surfaces to navigate to a landing at a designated landing field. We understand further that its trajectory is far steeper than an aircraft and bears the characteristics one would expect of a vehicle re- entering the atmosphere from orbit. The length of time it will take to go from 42,000 feet to touchdown is only three minutes and eight seconds. The vast majority of its operational time is spent in a space, not air, environment.
>
> We further understand that the NASA Act of 1958 recognized the distinct categories of "aeronautical and space vehicles" in section 103. In that section, we construe "aircraft" to be the aeronautical vehicle, i.e., designed primarily for operation in the air. The other listed vehicles seem to be "space vehicles." The contemporaneous but different drafters of our legislation did not mention space vehicles as a distinct category. From our view of the operational characteristics of the Shuttle, we conclude it is, in fact, a space vehicle rather than an aircraft. This is especially apparent considering that, in general, the operating requirements of Part 91 are inappropriate for application to the Shuttle operation. Many would be unnecessary and even incompatible with the Shuttle mission. You have expressed the intention of NASA to comply with whatever air traffic and related safety procedures the FAA feels are necessary for the safe operation of this vehicle while in the air space. To this end, we understand that our regional personnel are already engaged in establishing the needed restricted air space and other operational conditions. In these circumstances, it seems entirely consistent with the intent of the FAAct not to apply the full panoply of our FAA regulations so long as we remain assured the safety of the U.S. air space will not be derogated. We acknowledge NASA's firm commitment to cooperate fully to that end.

The view of the Chief Counsel of the FAA is, of course, authoritative on this question.[44]

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[44]When faced with a problem of statutory construction, the courts show "great deference to the interpretation given the statute by the officers or agency charged with its administration." Udall v. Tallman, 380 U.S. 1, at 16 (1964). *See also,* Philadelphia Television Broadcasting v. FCC, 359 F. 2d 383 (D.C. Cir. 1965).

It should be noted in passing that even if hypothetically the Shuttle were considered to be an "aircraft" under the FAAct, it would be a "public aircraft" rather than a "civil aircraft" under the Act. A "civil aircraft" is defined as "any aircraft other than a public aircraft" (FAAct, § 101(14) (1958); 49 U.S.C. § 1301(14)(1970)). A "public aircraft" is:

> [A]n aircraft used exclusively in the service of any government or of any political subdivision thereof, including the government of any State, Territory, or possession of the United States, or the District of Columbia, but not including any government-owned aircraft engaged in carrying persons or property for commercial purposes.

On the question of safety, the Chief Counsel of FAA noted that the FAA regional personnel were "already engaged in establishing the needed restricted air space and other operational conditions" to carry out "the intention of NASA to comply with whatever air traffic and related safety procedures the FAA feels are necessary for the safe operation of this vehicle while in the air space."[45]

V. WHAT AUTHORITY WILL THE SHUTTLE COMMANDER HAVE TO ENFORCE ORDER AND DISCIPLINE DURING SPACE SHUTTLE MISSIONS?

The Shuttle commander will have full authority to enforce order and discipline during all phases of any STS mission, including the ascent, orbital, and descent phases. This authority extends to any and all persons on board the Shuttle, including federal officers and employees and all other persons whether or not they are U.S. nationals.[46] Furthermore, this authority extends to Spacelab, which, when used in an STS mission, will, of course, function only as a part of the Shuttle Orbiter and not as an independent spacecraft; it will also cover any Shuttle personnel engaged in Extravehicular Activity (EVA), which means any activity outside of the Orbiter cabin and Spacelab areas. Finally, this authority includes the use of physical force if reasonable and necessary under the circumstances without incurring either criminal or civil liability.

FAAct, §101(32) (1958); 49 U.S.C. §1301(32) (1970). Although aircraft owned by foreign governments are "civil aircraft" if "engaged in carrying persons or property for commercial purposes," a U.S. flag aircraft, even if owned and operated by a private corporation will be a "public aircraft" if it is engaged exclusively in U.S. Government business (e.g., under a contract to perform transportation services solely for the U.S. Government). United States v. Aero Spacelines, Inc., 361 F.2d 916 (9th Cir., 1966). Any NASA aircraft would be a "public aircraft" even if such aircraft is carrying cargo which might eventually have commercial value to a private corporation, since "[t]o come within the definition of 'public aircraft,' the aircraft need only be used exclusively in the service of any government. . . ." *Id.* at 922. The STS, owned and operated by the U.S. Government and used to fulfill the policies specified in the NASAct will not be "a major enterprise for profit," thus not making NASA a "commercial operator" under the FARs (14 C.F.R. § 1.1 (1976)). Payment to NASA for providing reimbursable launch services are not based upon making a profit but only upon covering NASA's expenses.

[45]The Federal Register, March 31, 1977, Vol. 42, Fed. Reg. 17,139 & 17,140 (1977) contains the proposed FAA rules for the alteration and establishment of several restricted air space areas (under 14 C.F.R. §§71, 73 (1977)) for Shuttle operations from Kennedy Space Center in Florida. Final rules are published in Federal Register, June 9, 1977, Vol. 42 Fed. Reg. 29,475 & 29,476 (1977).

[46]This authority would even extend to stowaways on board the Shuttle, although it is highly unlikely that such a situation would ever occur, due to the stringent security which will surround STS operations and the very small amount of room on board the Shuttle.

In regard to DOD personnel detailed to NASA, they will be subject to "all appropriate regulations and directives of NASA." Agreement Between the Departments of Defense, Army, Navy and Air Force and the National Aeronautics and Space Administration Concerning the Detailing of Military Personnel for Service with NASA, approved by the President on April 13, 1959. *See* (N.M.I.) §1052.11A, Sec. IV(a) (1959). Memorandum of Understanding (MOU) Between the Department of Defense, the Army, the Navy and the Air Force and the National Aeronautics and Space Administration Concerning the Detailing of Military Personnel for Service as Shuttle Crew Members. *See* (N.M.I.)§ 1052.202, Sec. IV(e) (1976).

This authority is based upon several provisions of the NASAct. Section 203(c)[47] provides that "[i]n the performance of its functions the Administration is authorized—(1) to make, promulgate, issue, rescind, and amend rules and regulations governing the manner of its operations and the exercise of the powers vested in it by law." Section 304 (a)[48] states that the Administrator "shall establish such security requirements, restrictions, and safeguards as he deems necessary in the interest of the national security." Finally, 18 U.S.C. 799[49] states:

> Violation of Regulations of National Aeronautics and Space Administration
>
> Whoever willfully shall violate, attempt to violate, or conspire to violate *any regulation or order* promulgated by the Administrator of the National Aeronautics and Space Administration *for the protection or security* of any laboratory, station, base or other facility, or part thereof, or *any aircraft, missile, spacecraft, or similar vehicle, or part thereof,* or other property or equipment in the custody of the Administration, or any real or personal property or equipment in the custody of any contractor under any contract with the Administration or any subcontractor of any such contractor, shall be fined not more than $5,000, or imprisoned not more than one year, or both. (emphasis added)

Under the above statutory provisions, the NASA Administrator can promulgate regulations, effective upon publication in the *Federal Register,* relating to the Shuttle commander's authority.[50] There can be no question that, aside from the commander's responsibility for the lives of those people on board the Shuttle, the "protection or security" of the Shuttle and its payload will be one of the commander's primary duties. Since the well-being of the people on board the Shuttle will be directly related to the operational condition of the Shuttle, its payloads (especially Spacelab), and its various parts and systems, the commander's responsibilities both in relation to the people on board and to the Shuttle itself must be considered together.

In regard to the international law, the Shuttle commander will have authority analogous to the authority which commanders of ships and aircraft have traditionally been accorded. International law recognizes that the ship or aircraft commander is the representative of the State of nationality of such ship or aircraft to whom the State's jurisdiction has been delegated to maintain discipline and protect the persons and

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[47] 42 U.S.C. § 2473(c) (1970).

[48] 42 U.S.C. § 2455(a) (1970).

[49] This provision, *mutatis mutandis,* is contained in S. 1437, 95th cong., 1st Sess., as § 892.

[50] Such has been done for other matters of great importance to NASA. *See e.g.,* 14 C.F.R. § 1203a.100 (1977) *et seg.* (establishment of NASA security areas) and 14 C.F.R. § 1211.100 *et. seg.* (NASA "quarantine" regulations).

property on board.[51] Article VIII of the 1967 Outer Space Treaty logically extends this principle to spacecraft:

> A State Party to the Treaty on whose registry an object launched into outer space is carried shall retain jurisdiction and control over such object, and over any personnel thereof, while in outer space or on a celestial body. . . .[52]

Any and all persons on board the Shuttle or conducting any EVA activities from the Shuttle, therefore, will be under the direct and complete authority of the Shuttle commander, whether or not he is a civilian employee of NASA or an officer or employee of DOD. The parameters of this authority may be specified in regulations promulgated by the NASA Administrator, if he so desires.[53]

VI. WHAT AUTHORITY DOES NASA HAVE TO ESTABLISH MEDICAL STANDARDS AND TRAINING REQUIREMENTS FOR PERSONS FLYING ABOARD THE SHUTTLE?

From the beginning of the U.S. manned space program, NASA has established physical, physiological and psychological standards [hereinafter referred to as "medical standards"] and training requirements for persons going into outer space aboard NASA spacecraft. So far, these people have all been U.S. nationals and U.S. Government (NASA or DOD) employees. In addition to these same types of people, the Shuttle will carry scientists and certain other persons who may be neither employees of the U.S. Government nor nationals of the United States. NASA will, however, have the same authority to establish personal standards for such new categories of people.

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[51]McDougal, Lasswell, and Vlasic, *Law and Public Order in Space* 670, and 668-74 (1963). *See also* Matte, *The International Legal Status of the Aircraft Commander* (1975); and Meyers, *The Nationality of Ships,* 110, 120, and 322 n. 3 (1967).

[52]"A State's 'registry' of spacecraft is a term similar to the 'registry' of ocean-going ships, such records being kept for the purpose of identifying ownership." Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, Staff Report of the Committee on Aeronautical and Space Sciences of the United States Senate 31, 90th Cong., 1st Sess. (Comm. Print, March 1967). Details concerning the registration of space objects are set forth in the Convention on Registration of Objects Launched into Outer Space, opened for signature at New York January 14, 1975; entered into force for the United States September 15, 1976. T.I.A.S. No. 8480. Under Article II (1) the United States will be required to register the Shuttle Orbiter each time it is launched into orbit.

[53]Exercise of that authority, including the use of physical force, set forth in NASA regulations based upon the NASAct, §203(c) (1) and §304(a) as discussed earlier, would not involve a determination of criminal guilt, but only a determination that certain measures are reasonable and necessary to insure the safety of the persons on board the Shuttle (which includes Spacelab) as well as the protection and security of the Shuttle, any payloads, and any parts thereof. Violation of NASA regulations is addressed in 18 U.S.C. § 799 (1970) but the determination of guilt and punishment for such alleged violations is a matter for the appropriate United States court back on Earth.

Section 203(c)(1) of the NASAct[54] already discussed in connection with Issue No. 5 in relation to the authority of the Shuttle commander, gives NASA the authority, in performing its functions, "to make, promulgate, issue, rescind, and amend rules and regulations governing the manner of its operations and the exercise of the powers vested in it by law." NASA's functions include the: (1) planning, directing, and conducting of aeronautical and space activities and (2) the arranging for participation by the scientific community in the planning of scientific measurements and observations to be made through use of aeronautical and space vehicles, as well as the conducting or arranging for the conduct of such measurements and observations.[55]

Under the above statutory authority, NASA has established medical standards and training requirements for scientists and certain other professionals participating in flights aboard NASA research aircraft as part of the Airborne Sciences Program, conducted for many years by the NASA Ames Research Center. These professional people flying aboard NASA aircraft, often in international air space over the high seas, are usually referred to as "experiment operators" or "EOs," and have included non-U.S. Government employees and foreign nationals. For the purpose of this discussion, the EOs are analogous to the payload specialists who will conduct experiments in Spacelab aboard the Space Shuttle.[56] Examples of training requirements and medical standards which have been established by NASA for persons flying aboard NASA research aircraft are:

(1) high altitude indoctrination training at a suitable low pressure chamber every three years for NASA-Ames Research Center flight crew members;[57]

(2) completion within the preceding two years of a low pressure physiological training course, including a low pressure chamber run for crew members other than regular flight crew personnel who are scheduled to engage in flights above 45,000 feet, or a cabin altitude in excess of 14,000 feet;[58]

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[54] 42 U.S.C. 2473(c) (1) (1970).

[55] Section 203(a) of the NASAct; 42 U.S.C. § 2473(a) (1970).

[56] *See* Mulholland, "A Cost-effective Approach for Flight Experiments: Application of Airborne Science Aircraft Experience to the Shuttle Sortie Lab," paper presented at the 24th International Astronautical Congress, Baku, U.S.S.R., October 7-13, 1973; and Mulholland, et al., "NASA/ESA CV-990 Airborne Simulation of Spacelab," paper no. ASS 75-237, presented at the 21st Annual Meeting of the American Astronautical Society, Denver, Colorado, August 26-28, 1975.

[57] NASA/Ames Research Center, Flight Operations Manual Memorandum No. 70-2, sec. 302.3 Physiological Training (July 24, 1970).

[58] *Id.* Crew members other than flight crew personnel who are scheduled for high altitude flights are also required to visit an Ames Research Center approved physician immediately prior to beginning a series of such flights.

(3) freedom from heart disease, diabetes, chronic respiratory ailments, colds or sinus conditions.[59]

These same or similar standards, and more, may be established by NASA for payload specialists and other persons flying on board the Shuttle.[60] In addition, NASA may establish standards for foreign astronauts who fly in Shuttle missions.

VII. WHAT AUTHORITY DOES NASA HAVE TO CONTROL ARTIFACTS AND MEMENTOS BROUGHT ABOARD THE SHUTTLE OR FOUND IN SPACE BY SHUTTLE PERSONNEL?

NASA's basic authority "to make, promulgate, issue, rescind, and amend rules and regulations governing the manner of its operations and the exercise of the powers vested in it by law"[61] extends to the establishment of policy, procedures, and responsibilities governing the selection, approval, packing, storage, postflight disposition and public announcement of articles authorized to be carried on Shuttle flights. Such authority covers NASA employees,[62] as has already been manifested in relation to past missions,[63] and also non-NASA employees of U.S. nationality.[64]

With regard to foreign nationals participating in STS missions, NASA would have full authority to determine what objects could be brought on board the Shuttle in the first place, as well as how they must be stowed, etc., since such determinations would involve safety and related considerations. Once NASA had allowed an article to be brought on board the Shuttle and determined how such article should be packed, stowed, etc., enforcement of any policy regarding postflight disposition, if the article is the property of a foreign person or other entity and no longer in the United States, would have to be addressed on a case-by-case basis.

As far as objects found in outer space are concerned, the United States would need to reach agreement with the foreign States involved in order to establish appropriate policy and rules for its implementation. Again, however, any considerations relating to

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[59]NASA Learjet Airborne Observatory Investigator's Handbook, § 1.1.

[60]NASA Regulations regarding Payload Specialists are published at 14 C.F.R. § 1214 (1977).

[61]Section 203(c) (1) of the NASAct; 42 U.S.C. § 2473(c) (1) (1970).

[62] *See supra* note 46 regarding DOD personnel detailed to NASA.

[63] *See e.g.,* N.M.I. § 8020.19B (1974), establishing policy, procedures, and responsibilities regarding articles authorized to be carried on the Apollo-Soyuz Test Project mission.

[64]NASA regulations, published in the Federal Register, would establish artifact policy for non-NASA employees of U.S. nationality, unless the matter were to be controlled by the relevant contractual provisions. Both approaches would seem advisable.

safety on board the Shuttle or otherwise in connection with the Shuttle mission remain within the authority of the Shuttle commander and, ultimately, the United States.[65]

VIII. WHAT AUTHORITY EXISTS FOR THE CLEARING OF AND/OR THE WARNING FOR SOLID ROCKET BOOSTER, EXTERNAL TANK, AND SONIC BOOM IMPACT AREAS ON THE HIGH SEAS?

During the ascent-to-orbit phase of every Shuttle mission, the following events will occur on the high seas: the impact of the two Solid Rocket Boosters (SRB); the impact of pieces of the External Tank (ET); and the creation of a sonic boom footprint. While the exact parameters of these occurrences are still in the process of being determined by NASA,[66] the legal aspects of these occurrences in relation to the safety of other users of the high seas[67] within the areas in question are well known, since these occurrences are analogous to booster stage and sonic boom impact resulting from the launch of expendable launch vehicles, which the United States has been doing for nearly two decades.[68]

Basically, since the areas under consideration are within the international legal regime of the high seas, including the subjacent water column and the superjacent air space, the United States cannot legally exclude any vessels (surface ships and submersibles) or aircraft from these areas except vessels or aircraft of United States

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[65]Man-made objects of Earth origin which might be retrieved by the Shuttle, but not belonging to the United States, would most likely be legally the property of the State of registry, according to Article VIII of the 1967 Outer Space Treaty. *Supra* note 22. It would, therefore, be the duty of the United States to return such object to the State of registry on request, pending proper request for and identification of the object:

> A State Party to the Treaty on whose registry an object launched into outer space is carried shall retain jurisdiction and control over such object, and over any personnel thereof, while in outer space or on a celestial body. Ownership of objects launched into outer space, including objects landed or constructed on a celestial body, and of their presence in outer space or on a celestial body or by their return to the Earth. Such objects or component parts found beyond the limits of the State Party to the Treaty on whose registry they are carried shall be returned to that State Party, which shall, upon request, furnish identifying data prior to their return.

This provision, of course, is binding only upon States Parties to the Treaty, and, furthermore, does not impose a duty on the United States to retrieve the foreign space object in the first place.

[66]The latest details available on the SRB and ET procedures appear in the amended version of the environmental impact statement on the Space Shuttle Program.

[67]It should be noted that although the SRBs will impact within a 200-mile coastal zone, for the purposes of this analysis they will be regarded as impacting on the high seas.

[68]The first United States satellite launched into Earth orbit was Explorer I on January 31, 1958.

nationality (i.e., registry).[69] It has long been the practice for both the United States and the Soviet Union for missile testing and spacecraft launch operations over the high seas to warn vessels and aircraft of the operations planned. To follow that accepted practice for Shuttle operations would not present any new questions of international law.[70] Specific aspects of the impact area designation and warning procedure can be formulated and announced as the first Shuttle Orbital Flight Tests (in 1979) draw nearer.

IX. WILL AN OCEAN DUMPING PERMIT BE REQUIRED FOR THE SRB AND ET PROCEDURES ON THE HIGH SEAS?

An ocean dumping permit will not be required to conduct the SRB and ET procedures.[71] The statute of concern is the Marine Protection, Research, and Sanctuaries Act of 1972[72] [hereinafter the "Marine Act"]. NASA will not be required to obtain such a permit under the Marine Act for either the temporary placement of the SRBs on the ocean surface off the United States coast or for the disposal of the ET in a remote ocean area during the ascent-to-orbit phase of each Shuttle mission, due to the fact that each such placment of the SRBs and disposal of the ET is incidental to the use and actual purpose of the SRBs and ET. The SRBs are booster stages for the Space Shuttle, and the ET is a fuel tank to contain and supply both fuel (liquid hydrogen) and oxidizer (liquid oxygen) for the Space Shuttle Main Engines (SSMEs) during the ascent phase. The disposal of the ET will be analogous to the ocean disposal launch vehicles or the testing over the ocean and impact into the ocean of missiles, both very common practices for over two decades.

The Marine Act predated the entering into force of the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, with annexes[73] [hereinafter the "London Convention"] but was then amended to implement

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[69]The U.S. agencies most directly involved are the FAA and the Coast Guard. *See e.g.,* 14 C.F.R. §§91.91, 91.95, and 91.102 (1977), Federal Aviation Regulations, based upon section 307 of the FAAct, and 33 C.F.R. §72.01 (1976), Coast Guard regulations on "Notices to Mariners," to advise mariners on various facts relating to the safety of navigation.

[70]Past United States and Soviet practice regarding missile and launch vehicle booster stage impact can be found in 4 Whiteman, *Digest of International Law,* 619-33 (1965).

[71]Only the ET will be disposed in the ocean; the SRBs will be recovered on the ocean, towed back to shore, refurbished, and used again.

[72]Act of October 23, 1972; Pub.L. No. 92-532; 86 Stat. 1052; 33 U.S.C. § 1401 *et seg.* (1972).

[73]Done at London, Mexico City, Moscow, and Washington, December 29, 1972; entered into force for the United States August 20, 1975; T.I.A.S. No. 8165. The text can also be found in 11 International Legal Materials 1294 (November 1972).

the provisions of the London Convention in the United States.[74] Regulations to implement the permit system defined by the London Convention have also been created.[75]

The Marine Act states that:

> The Congress declares that it is the policy of the United States to regulate the dumping of all types of materials into ocean waters and to prevent or strictly limit the dumping into ocean waters of any material which would adversely affect human health, welfare, or amenities, or the marine environment, ecological systems, or economic potentialities.[76]

The purpose of the Marine Act is to regulate:

> (1) the transportation by any person of material from the United States and, in the case of United States vessels, aircraft, or agencies, the transportation of material from a location outside of the United States, when in either case the transportation is for the purpose of dumping the material into ocean waters, and (2) the dumping of material transported by any person from a location outside the United States, if the dumping occurs in the territorial sea or the contiguous zone of the United States.[77]

The specific provision of interest to Space Shuttle ET procedures is as follows:

> Except as may be authorized by a permit issued pursuant to section 1412 or section 1413 of this title, and subject to regulations issued pursuant to section 1418 of this title,
>
> (1) no person shall transport from the United States, and
>
> (2) in the case of a vessel or aircraft registered in the United States or flying the United States flag or in the case of a United States department, agency, or instrumentality, no person shall transport from any location, any material for the purpose of dumping it into ocean waters.[78]

"Person" includes "any officer, employee, agent, department, agency or instrumentality of the Federal Government"[79] and would, therefore, include NASA. "Transport. . .refers to the carriage and related handling of any material by a vessel, or

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[74][1974] U.S. Code Cong. & AD. News, 2792-93. The Marine Act's legislative history clearly indicates that the Act was drafted in anticipation of the London Convention. *Id.* at 2794. *See also* [1972] U.S. Code Cong. & AD. News, 4242-43.

[75]40 C.F.R. § 22 *et seg.* Supp. (1976).

[76]33 U.S.C. § 1401(b) Supp. (1972).

[77]33 U.S.C. § 1401(c) Supp. (1974).

[78]33 U.S.C. § 1411(a) Supp. (1974).

[79]33 U.S.C. § 1402(e) Supp. (1972).

by any other vehicle, including aircraft''[80] and might cover space launch vehicles, such as the Shuttle and the presently used expendable booster rockets; it would not be necessary to define the Shuttle or the expendable boosters as ''aircraft'' to come within the meaning of ''transport.'' Finally, the definitions of ''material'' and ''ocean waters'' might cover the SRBs and ETs and the areas into which NASA intends to place them during the ascent-to-orbit phase of each and every mission.[81]

It is the definition of ''dumping'' by which the SRB and the ET procedures would definitely be excluded from the proscription of the Marine Act. ''Dumping'' is defined as:

> a disposition of material: . . *Provided further*, That it does not mean. . .the intentional placement of any device in ocean waters or on or in the submerged land beneath such waters, for a purpose other than disposal, when. . .such placement. . .occurs pursuant to an authorized Federal or State program. . . .[82]

The dropping of the SRB and ET into ''ocean waters'' will only be incidental to their actual purposes, respectively, to provide a booster stage and a fuel and oxidizer tank for the Space Shuttle during the launch phase. The Space Shuttle program, of course, is an ''authorized Federal program.'' The same reasoning also applies to the use of expendable launch vehicles and the testing of ballistic missiles over and into the high seas.

The foregoing statutory interpretation is entirely consistent with the legislative history of the Marine Act. In a detailed, section-by-section analysis of the Proposed Marine Protection Act of 1971, one of the bills that led to the enactment of the Marine Act, the Environmental Protection Agency made the following statement about subsection 3(f), which contained the same basic definition of ''dumping'' (33 U.S.C. 1402(f)) quoted above:

> Special note should also be made of the fact that ''dumping'' as defined in subsection 3(f) would not include an activity which has as its primary purpose a result other than ''a disposition of material'' but which involves the incidental depositing of some debris or other material in the relevant waters. For example, material from missiles and debris

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[80] 33 U.S.C. § 1402(k) Supp. (1972).

[81] ''Material'' includes ''matter of any kind or description, including but not limited to, dredged material, solid waste, incinerator, residue, garbage, sewage, sewage sludge, munitions, radiological, chemical, and biological warfare agents, radioactive materials, chemicals, biological and laboratory waste, wreck or discarded equipment, rock, sand, excavation debris, and industrial, municipal, agricultural, and other waste. . . .'' 33 U.S.C. § 1402(c) (1974).

''Ocean waters'' are defined to mean ''those waters of the open seas lying seaward of the base line from which the territorial sea is measured, as provided for in the Convention on the Territorial Sea and the Contiguous Zone (15 U.S.T. 1606; T.I.A.S. 5639).'' 33 U.S.C. § 1402(b) (1972).

[82] 33 U.S.C. § 1402(f) (1972).

from gun projectiles and bombs ultimately come to rest in the protected waters. Such activities are not covered by this Act.[83]

X. CONCLUSION

In addition to the issues discussed in this article, there are, of course, other legal issues inherent in STS operations. Some of these have already been resolved. For example, patent and data policies applicable to activities conducted in connection with Shuttle flights on a reimbursable basis were addressed and resolved in connection with the issuance of the regulations concerning reimbursable launches.[84] Also, those regulations were issued only after a careful consideration and resolution of the legal elements of the financial issues.

Other issues are being addressed separately, including the complex issues of liability, and the availability of and requirements for insurance or indemnity provisions in connection with Shuttle operations. Also, enactment of the Congressional Code Reform Act of 1977[85] would establish an adequate jurisdictional structure for persons other than military astronauts aboard the Shuttle, to complement that now provided by the Uniform Code of Military Justice.

In enacting the NASAct of 1958, Congress wisely afforded the newly established NASA with a broad and flexible charter, one designed to serve the nation by fostering advanced programs which could only be imagined two decades ago. NASA's remarkable achievements in aeronautics and space are tributes to the foresight of the authors of that Act. While much work continues, in NASA and elsewhere, to determine whether additional legislation is necessary as we proceed into the era of the Space Shuttle, the conclusion is inescapable, as supported in part by the analyses in this article, that the NASAct provides a sound legislative basis for the next decade of space exploration and exploitation.

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[83][1972] U.S. Code Cong. & AD. News, pp. 4255-56.

[84]*Supra* note 3.

[85]S. 1437, 95th Cong., 1st Sess. (1977).

AGREEMENT ON CO-OPERATION IN THE EXPLORATION AND USE OF OUTER SPACE FOR PEACEFUL PURPOSES*

The Governments of the People's Republic of Bulgaria, the Hungarian People's Republic, the German Democratic Republic, the Republic of Cuba, the Mongolian People's Republic, the Polish People's Republic, the Socialist Republic of Romania, the Union of Soviet Socialist Republics and the Czechoslovak Socialist Republic, hereinafter referred to as "the Contracting Parties",

Desiring to extend further the fraternal friendship and multilateral co-operation among them,

Having regard to the tasks involved in the implementation of the Comprehensive Programme for the further intensification and improvement of co-operation and the development of the socialist economic integration of the member countries of the Council for Mutual Economic Assistance,

Recognizing the desirability of a closer and more effective joining of forces in the exploration and use of outer space for peaceful purposes,

Desiring to consolidate the accumulated positive experience of co-operation among them in this field,

Taking account of the great practical significance of the results of space research to various branches of the national economy,

Convinced that the development of international co-operation in the exploration and use of outer space, including the Moon and other celestial bodies, for peaceful purposes will serve the interests of the peoples of the entire world,

Bearing in mind the provisions of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, of 27 January 1967,

Have agreed as follows:

Article 1

The Contracting Parties shall promote in every way the further development of co-

*This agreement was signed on July 13, 1976, and entered into force March 25, 1977. The English translation appeared in U.N. Doc. A/C.1/31/3 (1977).

operation by interested organizations of their countries in the exploration and use of outer space for peaceful purposes.

Article 2

Continuing and further developing the programme of joint space research adopted in 1967 (the "Intercosmos" programme), co-operation shall be carried on in the following basic areas:

Study of the physical properties of outer space;
Space meteorology;
Space biology and medicine;
Space communications;
Study of the natural environment by means of space devices.

Article 3

Co-operation in the basic areas enumerated in article 2 of this Agreement may be carried on in the following forms:

(a) The launching of space objects for scientific and applications purposes;
(b) The production of apparatus for conducting joint space research;
(c) Experiments on board geophysical and meteorological rockets;
(d) The conduct of joint observations and experimental and theoretical research on space subjects;
(e) The processing, analysis and utilization of the results of joint space research for scientific and applications purposes, and the preparation of joint publications;
(f) The holding of consultations between interested countries and the provision, in accordance with special agreements, of mutual scientific and technical assistance, including the exchange of technology, on individual subjects and projects in the field of the exploration and use of outer space for peaceful purposes;
(g) The holding of symposia, conferences, seminars and other meetings;
(h) The exchange of scientific and technical documentation and information.

Article 4

The Contracting Parties may determine other areas and forms of co-operation in the exploration and use of outer space for peaceful purposes.

Article 5

The co-ordination of work for the implementation of this Agreement in each country shall be entrusted to a national co-ordinating organ for co-operation in the exploration and use of outer space (hereinafter referred to as "the national organ").

Article 6

Co-operation between the interested organizations of the Contracting Parties shall be carried on on the basis of agreed programmes and plans which define the conditions for the conduct of specific space experiments and investigations.

Depending on their interest, organizations of all the Contracting Parties or of some of them may participate in the said programmes and plans.

Each Contracting Party shall finance the work and measures conducted by its organizations on the basis of the documents referred to in this article, except as otherwise provided by special agreements.

Article 7

The adoption of decisions and recommendations on programmes and plans for joint work conducted in accordance with this Agreement, and the consideration of questions relating to the organization of co-operation, including the establishment and activity of permanently functioning mixed working groups, shall be carried out by the Meeting of Leaders of National Organs (hereinafter referred to as "the Meeting").

Sessions of the Meeting shall be held at least once a year, as a rule, successively in the countries participating in this Agreement.

The chairman of each session of the Meeting shall be the leader of the national organ of the country in which the session is held.

During the period between sessions of the Meeting, general co-ordination of the activities of the national organs for the implementation of this Agreement shall be carried on by the national organ of the depositary country.

Article 8

Decisions and recommendations of the Meeting shall be adopted by a majority of the votes of the leaders of the national organs and shall be recorded in an appropriate protocol. The leader of each national organ shall have one vote in the Meeting.

Decisions and recommendations of the Meeting shall not be binding on those Contracting Parties which did not vote for their adoption. However, those Parties may, if they are interested, subsequently accede to the said decisions and recommendations.

Questions relating to co-operation involving only some of the Contracting Parties shall be decided by agreement between the leaders of the national organs of those Parties.

Article 9

The agreed space experiments and investigations shall be carried out by the interested organizations acting within the permanently functioning mixed working groups in the basic areas of co-operation.

Article 10

The scientific results of joint space experiments and investigations may, by agreement between all the countries participating in them, be given to scientists and scientific organizations and institutions of other countries.

Article 11

This Agreement shall not affect the rights and duties of the Contracting Parties arising out of other international agreements concluded by them or the right of the Contracting Parties to conclude between themselves or with third States other multilateral and bilateral agreements in matters of co-operation in the exploration and use of outer space for peaceful purposes.

Article 12

This Agreement is subject to ratification or approval in accordance with the legislation of the Contracting Parties.

The instruments of ratification or certificates of approval shall be deposited with the Government of the Union of Soviet Socialist Republics, which is designated as the depositary of the Agreement.

This Agreement shall enter into force after the deposit of instruments of ratification or certificates of approval by six Contracting Parties.

In respect of Contracting Parties whose instruments of ratification or certificates of approval are deposited after the entry into force of the Agreement, it shall enter into force on the date of the deposit of their instruments of ratification or certificates of approval.

Article 13

Other countries may also accede to this Agreement with the consent of the Contracting Parties.

A statement in writing concerning the accession shall be transmitted to the depositary, which shall inform all the Contracting Parties of that fact.

Accession to the Agreement shall be considered to have taken place on the date of the reception by the depositary of the consent thereto, in writing, of two thirds of the Contracting Parties.

Article 14

This Agreement shall remain in force for a term of 10 years.

It shall continue in force for successive periods of five years in respect of each Contracting Party which does not, six months before the expiry of the aforementioned term of 10 years and the successive periods of five years, renounce its participation in the Agreement.

Article 15

Any Contracting Party may dissociate itself from this Agreement by transmitting a notice in writing to that effect after 12 months to the depositary, which shall immediately inform all the Contracting Parties of the said notice.

Article 16

The original of this Agreement shall be deposited in the archives of the depositary, which shall send duly certified copies of this Agreement to all the Contracting Parties.

Done in Moscow on 13 July 1976, in one copy in the Russian language.

EVENTS OF INTEREST

A. Past Events

1. ABA Joint Program on the "Commercial Use of Space: Legal and Business Issues in the Routine Flights of the Space Shuttle," Chicago, August 10, 1977.

The section of Science and Technology and the Section of Corporation, Banking and Business Law of the American Bar Association held a joint program under the Chairmanship of Arthur M. Dula Attorney-at-Law of Houston. The program was moderated by Gerald J. Mossinghoff, Deputy General Council of NASA and dealt with the commercial uses of space, particularly the legal and business issues arising out of the routine flights of the space shuttle. Participating panelists included John F. Yardley, Associate Administrator for space flight at NASA: Congressman Don Fuqua; Daniel J. Fink, Vice President and General Manager of the Space Division of the General Electric Company; Delbert D. Smith, Attorney-at-Law of Madison; and Senator Harrison H. Schmidt of New Mexico. The panelists touched upon the general characteristics and the various uses of the shuttle, its capabilities, the pricing policies pertaining to it and other elements of this space transportation system. Additional topics under discussion were insurance, payload priority, liability, an international university system in space and the question of whether the shuttle is an aircraft or a spacecraft. One suggested conclusion was that the commercial sector of industry is at least as concerned if not more with the legal, administrative, financial and business problems associated with commercial ventures as it is with the technical problems.

Stephen Gorove
Vice President for Programs,
Association of the United States
Members of the International
Institute of Space Law

2. Space Law Session of the Eighth World Conference of the World Peace Through Law Center, Manila, August 21-26, 1977.

During the Eighth World Conference of the World Peace Law Center held August 21-26, 1977 in Manila one of the panel discussions focused on "Space Law as it Affects Domestic Law." The presiding officer for the discussion was Professor D. Goedhuis of the Netherlands. His introductory remarks are printed at the end of the Past Events of Interest section of this issue of the Journal of Space Law.

3. XXth Colloquium on the Law of Outer Space, Prague, Czechoslovakia Sept. 26-Oct. 1, 1977

The XXth Colloquium on the Law of Outer Space took place during the XXVIIIth Congress of the International Astronautical Federation in the city of Prague, Czechoslovakia.

The Colloquium was attended by attorneys from the United Nations, the Western and Eastern European countries, Iran, Japan, Latin America, Mexico, Philippines and the United States of America.

A Round Table was organized by the International Academy of Astronautics under the chairmanship of Dr. Contensou, France, and Dr. Kopal, Czechoslovakia, which discussed the technical and legal aspects of remote sensing of satellites. This discussion shall be continued at the next Congress in Dubrovnik, Yugoslavia.

As regards the Colloquium there were four official subjects:
(1) should there be a World International Space Agency,
(2) matters relating to the definition and/or delimitation of outer space and outer space activities,
(3) ways of coordinating space science and technology with space law, and
(4) various subjects.

In the general discussion following the presentation of the papers on the first subject, several speakers expressed the opinion that a great deal of preparatory work was needed before the establishment of an international space agency under the auspices of the United Nations could be seriously considered. Others felt that the time to take action was now.

Some speakers agreed with Dr. Diederiks-Verschoor's and Dr. Kamenetskaya's proposals to build on the already existing structure of ICAO since in the shuttle era both air and space law may apply to a given instrumentality. General Menter favored the ICAO approach, but Dr. Perek thought it was somewhat unrealistic since ICAO has so far not been involved in or associated with space activities.

Several speakers felt that if an international space agency were to be established, care should be taken to avoid duplication of already existing institutions many of which perform very useful functions in relation to outer space. Dr. Kaltenecker saw little need for the creation of an agency that would perform functions already exercised by the European Space Agency. In the same manner Dr. Perek pointed out the role and functions of various specialized agencies of the United Nations as well as the role of the Outer Space Affairs Division of the United Nations Secretariat. Mrs. Galloway also shared this view and drew attention to the fact that the World Meteorological Organization and the International Telecommunication Union perform a number of useful activities which should not be assigned without reason to a new agency. She also

brought up the point that any new specialized agency would have to be brought into relationship with the United Nations under Articles 57 and 61 of the Charter.

Dr. Safavi of Iran fully supported Prof. Gorove's suggestion for the establishment of a World Space Law Center which he felt could perform much needed functions by recommending and reviewing possible solutions to legal problems arising out of people's activities in outer space. He referred to the Institut de Droit International, the International Law Association and a long list of international institutions which have been established since 1899, performing the same type of essential functions in the preparatory process of international law making as the one suggested by Prof. Gorove.

Dr. Okolie and Dr. Kaltenecker questioned the usefulness of a new institution in the field of space activities in view of the already existing European Space Agency.

General Menter felt that it might be useful to make out a list of all international organizations currently concerned with outer space, indicating their various activities. Dr. Perek agreed that such a compilation would be useful in determining the activities and responsibilities of the various international agencies. He was sympathetic to Prof. Gorove's proposal, in which he and several other speakers saw a great deal of merit, and was not opposed to suggestions for the establishment of an International Space Agency. However, he had some questions and doubts in relation to financing. Dr. Safavi felt that a World Space Law Center could be established much like a United Nations University and should not involve expenditures on the same scale that would have to be considered in connection with the establishment of an international space agency. In response to a question by Dr. Kaltenecker, Prof. Gorove stated that in his proposal the question of whether a World Space Law Center would operate as an intergovernmental or nongovernmental organization was left open intentionally.

Papers presented on the second subject included the Introductory Report written by Prof. Matte and summarized by Dr. Haanappel, Canada. There was an interesting exchange of views about the usefulness of the term "mesospace" as a solution to this longstanding question.

The second session was devoted to the ways of coordinating space science and technology with space law. The Introductory Report was prepared by Dr. Bourély and, in his absence, summarized by Dr. Kaltenecker.

Among the numerous papers discussed during a part of the second session and wholly during the third and fourth sessions, some topics drew special attention. Among these were papers on the application of satellites, the problem of the use of solar energy and the geostationary orbit.

During the discussion of this latter subject Dr. Perek's paper gave rise to a lively exchange of views about the geostationary orbit, its technical and legals aspects, and the invalidity of the claims as regards sovereignty of the geostationary orbit made by certain

Equatorial States last year. Dr. Vereshchetin asked if the claims to geostationary orbits, as have been made, from a physical point of view could only be made by the Equatorial countries. Dr. Perek was of the opinion that geostationary orbits are only possible over the Equator, regardless of whether this is a basis for sovereignty claims. In his view the only way seems to take a global standpoint, negating all claims. Prof. Gorove stated that he was in agreement with Dr. Perek's approach to and understanding of the goestationary orbit. He welcomed Dr. Padang's remarks because they pointed out legal problems which had to be tackled in addition to the question of the upper limit of national sovereignty. Among these problems, Prof. Gorove mentioned Article I of the 1967 Space Treaty which supported not only Mr. Finch's position but also the claim to a sharing of the geostationary orbit. (Article I of the 1967 Outer Space Treaty stipulates that the exploration and use of outer space shall be carried out for the benefit of all countries.) He added that an additional legal argument based on Article II of the 1967 Treaty, namely, that the use of the geostationary orbit constitutes a national appropriation of a limited natural resource, also had to be answered. In connection with this Dr. Gorove recalled the position of the Legal Subcommittee of COPUOS that at the present time there appeared to be no ban on the national appropriation of natural resources. In response to a question by Mr. Finch, Prof. Gorove stated that the aforementioned issues which are implicit in the claim to geostationary orbits also had to be answered and not just the question of the upward extent of sovereignty.

The paper of Dr. Vereshchetin dealt with the new intergovernmental agreement on cooperation in the exploration and use of outer space for peaceful purposes, signed in Moscow on July 13, 1976. Dr. Perek asked if individual agreements on remote sensing by satellites were covered by this new Agreement. Dr. Vereshchetin replied in the affirmative and noted the agreement between the USSR and Bulgaria. In answer to a question from Dr. Padang, Dr. Vereshchetin stated that requests for scientific data, acquired by remote sensing satellites, were received by the USSR from the countries participating in the agreement.

In relation to Ms. Moore's paper, Dr. Perek again mentioned the difference between primary and analyzed data. Prof. Gorove drew attention to Article XI of the 1967 Outer Space Treaty which, he felt, ought not to be overlooked in a discussion on the dissemination of data acquired through remote sensing from outer space.

Due to the large quantity of papers in the category of "Various Subjects," the discussion could not be extensive. In fact, this year there were too many papers in this area indicating that the three officially chosen subjects were apparently not comprehensive, although they were approved by the General Assembly of the IISL.

After the presentation and discussion of papers, the President of the International Institute of Space Law closed the Colloquium with, *inter alia,* the words that "the exchange of views between technical and legal experts from all over the world promotes

international understanding'' and she expressed the wish that this unifying character of the Colloquium may become even stronger in the future.

Dr. I.H.Ph. Diederiks-Verschoor
President, International
Institute of Space Law

4. Conference on ''The Industrialization of Space'', San Francisco, October 18-20, 1977.

A conference dealing with the long range planning for the industrial phase of space exploration was held in San Francisco, October 18-20, 1977 under the sponsorship of the American Astronautical Society. Among the topics discussed were some of the technical, legal, psycho-social and economic aspects of the industrialization of space. The Space Law Session was chaired by Professor Stephen Gorove of the University of Mississippi Law Center and the participants and their presentations included: Professor Hamilton DeSaussure of the University of Akron School of Law (''The Necessary Elaboration of Space Law for the Commercial Use of Outer Space''); Mark Frazier, Director of the Space Freeport Project (''Frontiers for Free Trade''); Brig. Gen. Martin Menter (''The Impact of Treaties on Commercial Space Operations''); Amanda Lee Moore of New York City (''Information from Space: An Ethereal Resource for all Mankind''); George S. Robinson of the Smithsonian Institution (''The Outer Space Treaty and the Great Deception: Civilian Industrialization or Military Outposts in Space?); Professor Stanley B. Rosenfield of the New England Law School (''The 'Common Heritage of Mankind' Doctrine and Private Industrial Development of Outer Space''); Jack D. Salmon of the Virginia Politechnic Institute (''The Politics of Law for Space Industrialization''); H. Safavi, Vice President of the High Council of Civil Aviation in Iran (''The Economical and Political Aspect of Industrialization of Activities in Outer Space'').

The presentations were followed by a lively session on the ''Commercial User and Space Law'' at which Professor Gorove acted as a moderator. Extensive discussions were centered around the jurisdictional problems of the space community as well as the legal ties of such community to Earth.

Stephen Gorove
Chairman, Space Law Session,
Industrialization of Space
Conference

5. Program on Space Based Solar Energy, Dag Hammarskjold Auditorium, United Nations Secretariat Building, New York City, February 15, 1978.

During the Fifteenth Session of the Scientific and Technical Subcommittee of the United Nations Committee on the Peaceful Uses of Outer Space, the members of the Subcommittee early adjourned their meeting on Wednesday, February 15th to attend a briefing program on space based solar energy. The program was sponsored by the International Institute of Space Law and the American Institute of Aeronautics and Astronautics, in cooperation with the International Astronautical Federation. The moderator of the program was Professor J. Preston Layton, Chairman of the IAF working Group on "Space, Energy and Power".

Martin Menter, representing the International Institute of Space Law, spoke briefly as to the interest of attorneys in attending a program designed for members of the COPUOS Scientific and Technical Subcommittee, viz; the need for the attorney and scientist educating each other—each perhaps addressing the same space problem for within his specialty and expertise—but working together towards a solution.

The principal speaker was Dr. Peter E. Glaser, Vice-President Arthur D. Little, Inc. His address was entitled "Solar Power Satellites: A Global Power Generation Option". Dr. Glaser explained the concept of collecting solar energy in space and its transmission to Earth. He mentioned the risks involved and foreseeable legal problems. While he concluded that there are no known technical barriers to the design, deployment and operation of solar power satellites, he emphasized the need for experimental data from terrestrial and space experiments to resolve critical issues. A question and answer period followed Dr. Glaser's presentation.

Martin Menter
President, Association of the
United States Members of the
International Institute of
Space Law

6. International Studies Association Seminar Washington, D. C., Feb. 22, 1978

The International Studies Association held a seminar on "Issues in International Space Law: Remote Sensing of the Earth by Satellites" on February 22, 1978 in Washington, D. C. at the Sheraton Park Hotel. The chairman was Ms. Eilene Galloway, Vice President of the International Institute of Space Law. The other panelists were: Leonard Jaffe, Deputy Associate Administrator, Office of Applications, NASA, who spoke on "Nasa and Space Activities: LANDSAT"; Ronald F. Stowe, Senior Counsel of Satellite Business Systems (formerly Assistant Legal Advisor of the U. S. Department of State), who spoke on "The Negotiations in the United Nations on Remote Sensing."

Dr. Carl Q. Christol, professor of International Law and Political Science at the University of Southern California, spoke on "Progress and Research in Space Law" while Ms. Galloway spoke on "The United States Congress and Remote Sensing."

Eilene Galloway
Chairman, International
Studies Association Seminar

7. Goddard Memorial Symposium on "Space Shuttle and Spacelab Utilization", Washington, D.C., March 8-10, 1978.

The 1978 Goddard Memorial Symposium was sponsored by the American Astronautical Society and the Deutsche Gesellschaft für Luft-und Raumfahrt (German Society for Air and Space Flight) and was held March 8-10, 1978 in Washington, D.C. The Symposium was devoted to the theme of "Space Shuttle and Space Lab Utilization: What are the Near-term and Long-term Benefits for Mankind?". The Space Law Session of the Symposium was co-chaired by Mrs. Eilene Galloway of Washington, D.C. and Professor Stephen Gorove of the University of Mississippi Law Center. In his opening address, Professor Gorove discussed some of the major legal problems and considerations arising out of the utilization of the space shuttle. He examined the relevant provisions of air and space law, domestic and international to determine whether the shuttle could be regarded as an aircraft. Additionally, he discussed some of the potential jurisdictional problems as well as the problems of liability which may present themselves as a result of shuttle operations. Following his presentation, Neil S. Hosenball, General Council of NASA, gave a detailed rundown on the questions and problems before the Legal Subcommittee of the United Nations Committee on the Peaceful Uses of Outer Space which was scheduled to meet later in Geneva. In her presentation, Mrs. Eilene Galloway emphasized the importance of a continual dialogue between those concerned with the legal problems of the space age and those who work in the field of science. She also stressed the importance of Congress in establishing policies and providing appropriations to achieve national objectives in relation to the utilization of outer space. The presentations were followed by an interesting exchange of questions and answers between the participants and those attending the session.

Stephen Gorove
Co-chairman, Space Law Session,
1978 Goddard Memorial Symposium

8. The International Institute of Space Law Honors Professor Stephen Gorove

The International Institute of Space Law of the International Astronautical Federation meeting in Prague, Sept. 30, 1977 awarded Professor Stephen Gorove of the

University of Mississippi Law Center a testimonial in recognition for his leadership and outstanding contribution to the development of space law and his founding of the Journal of Space Law. Other recipients of awards included Ambassador Eugeniusz Wyzner, Chairman of the Legal Subcommittee of the U.N. Committee on the Peaceful Uses of Outer Space and Ms. Kwen Chen, Principal Officer in the General Legal Division of the Office of Legal Affairs of the United Nations Secretariat.

9. Other Events.

On October 22, 1977 a "LOOK TO SPACE" Symposium was held at the Space Science Center of De Anca and Foothill Colleges in California. The Symposium was planned as a culmination of the industrialization of space conference sponsored by the American Astronautical Society in San Francisco during the preceding week. The Symposium was chaired by Thomas M. Gates, Director of the Space Science Center, and some of the legal problems of the pending industrialization of space were discussed by Professor Stephen Gorove of the University of Mississippi Law Center. On November 9-13, 1977, the Space Law Committee of the Federal Bar Association meeting in Puerto Rico under the chairmanship of Harold Berger of Philadelphia devoted its session to the theme of "Satellites, Space and International Law." Also, under the general chairmanship of Harold Berger a Conference on Global Interdependence held at the University of Pennsylvania on April 14, 1978 touched upon issues of space law.

10. Brief News

The third and fourth manmade vehicles planned to leave the solar system have been launched in the U.S. Voyager project. Each carried a copper disc containing messages from President Carter and U.N. Secretary General Kurt Waldheim as well as other messages from Earth.

SERIO, an experimental communications satellite, was launched by NASA for the Italian government on August 25, 1977. SERIO will study radio propogation at higher frequencies than those in use by crowded land radios.

A German firm, OTRAG, associated itself with Zaire until the year 2000 so that as an individual firm it could exploit outer space without violating the Outer Space Treaty . . . Nine telecommunications experts from the Peoples Republic of China began receiving briefings on European space technology and space programs by European Space Agency and industry officials.

On January 16, 1978, the United States and the Soviet Union opened a new hot line using satellites instead of cables. The new line transmitts messages via printed teletype and is not susceptible to atmospheric interferences common to high frequency radio systems.

India and Iran plan to operate domestic communications satellite systems by the early 1980's and are negotiating with NASA for launches by the space shuttle.

NASA expects to fly an early space shuttle mission to the Skylab space station and will decide within the next year whether the shuttle flight will be used to place Skylab in a higher orbit for reuse or on a reentry trajectory for destruction.

USSR plan to launch seven geostationary multipurpose Volna satellites for global communications has been distributed to the International Telecommunication Union's International Frequency Registration Board.

A European Space Agency Meteosat synchronous orbit weather spacecraft was launched successfully November 22, 1977 after several delays.

NASA has scheduled twenty-five launches in 1978, with fifteen of the missions being paid for by organizations other than NASA under reimbursable launch agreements.

Zaire and Suadi Arabia signed five-year agreements with Intelsat for lease of capacity on Intelsat spacecraft for domestic communications systems.

The Soviet Union has offered to launch at least one European Space Agency Marots maritime communications spacecraft as the USSR's contribution toward an operational system that would follow the Marisat program.

The newest Intelsat satellites are scheduled to go into service over the Indian Ocean in mid-1978, serving about 40 countries. Each satellite can handle 6,000 telephone calls and 2 television channels simultaneously. . .

11. Introductory Remarks at Manila World Law Conference

The conquest of outer space has opened up a new phase in the relation between national law and international order. It is a vital factor in the evolution of society and space activities, in the words recently spoken by the Chairman of the UN Outer Space Committee, Mr. Peter Jankowitsch: "While new in man's experience it nevertheless holds forth a promise of enhancing our ability to survive not only on the planet Earth, but in the Universe itself."

Insofar as the evolution of legal rules to govern human space activities is concerned, we are standing at a crossroad.

The present legal regime of outer space is built on two pillars. In a remarkably short time after the first Sputnik was launched in October 1957, a universal consensus was achieved on the two fundamental principles to govern this new medium, viz., the principle that outer space is free for exploration and use and that it is not subject to national appropriation.

On the basis of the conduct of States, the attitude of international bodies and the opinion of the leading experts on space law, these principles were recognized as rules of positive international law *before* they were confirmed by the Outer Space Treaty of 1967. In recent months, however, these two fundamental principles have been called in question by a number of Equatorial States who have claimed sovereign rights over segments of outer space at a height of approximately 36,000 km.

Time does not allow attention to the arguments on which these claims are based. However, claims of sovereignty over parts of outer space, apart from infringing the basic principles of space law, would necessarily lead to an unacceptable fragmentation of outer space and to an ever increasing erosion of the principle of freedom of this medium to the detriment of the interests of the world community.

Some observations may, however, be made on the causes of these challenges to the present legal regime and the possibilities of removing the root of these causes. The main reason why claims of sovereignty over parts of outer space have been made is the fear that under the present system interests of the States which do not as yet possess space capabilities are insufficiently safeguarded.

It should be recognized that in the present circumstances where only a handful of States govern practically all space activities, an *unregulated* freedom might lead to situations of a more or less monopolistic nature. It is for this very reason that strenuous efforts have been and are being made by the Outer Space Committee of the U.N. to devise roles directed towards a protection of the needs of the *non-possidentes.*

Although these efforts (as is demonstrated by the papers submitted to our Conference) have had a certain measure of success, the opinions expressed on the most *fundamental* issues arising in the development of the two most important space applications, viz., the use of direct broadcasting and remote sensing satellites, are as yet too far apart to expect that a consensus on binding legal rules on these issues can, in the near future, be reached. The crucial point is how, in the absense of rules by which the present inequalities in outer space are sufficiently mitigated, the danger of claims based on short-term national interests can be prevented.

One of the problems is because of the still rudimentary space developments, there is in the world as yet an insufficient awareness of the fact that the immense benefits which, by space applications, *can* accrue to *all* countries, will only be achieved at the expense of the absolute priority of national sovereignty. Although the conquest of space has not eliminated the pivotal importance of national interest, it has radically affected the dimensions and objectives of this interest. The extent to which, by this conquest, the national interest has been and is being changed is only vaguely realized.

Does this mean that we can expect narrow nationalistic tendencies, as those just mentioned, to increase until the time when greater experience has been gained? There appears to be one chance to avert such a situation. There are several indications of a

growing recognition by the space powers of the need to pursue cooperative endeavours with the vast majority of States who do not as yet possess space capabilities. Under the auspices of the UN a remarkable number of programs are being organized and directed towards forms of international cooperation in space activities.

It has to be recognized that these cooperative endeavours are of insufficient magnitude to achieve a substantial reconciliation of the diverse national interests in space. But they form a highly significant basis on which to build a system which will benefit the world community as a whole. The answer to the all important question of whether mankind will meet the challenge raised by the conquest of space depends on the readiness of States to enter into a further and speedier development of international cooperation.

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August 1977

B. Forthcoming Events.

1. XXIst Colloquium In Law of Outer Space, Dubrovnik, Yugoslavia, October 1-8, 1978.

The XXIst Colloquium On Law of Outer Space will be held in connection with the XXIXth Congress of the International Aeronautical Federation in Dubrovink, Yugoslavia, October 1-8, 1978. The theme selected for the Congress is "Aeronautics for Peace and Human Progress".

The following subjects have been selected for the Colloquium:

1. Telecommunications: Legal Issues arising from space activities;
2. Use of the geostationary orbit;
3. Legal aspects concerning solar energy;
4. Definition and/or delimitation of outer space;
5. Legal regime of international space flights;
6. Space law and aeronautics for peace and human progress;
7. Various subjects selected by individual authors for the theme "Peace and Human Progress."

It has been suggested that authors of all space law papers try to include the relationship of their subjects to the theme of the Congress insofar as relevant and practicable.

2. Other Forthcoming Events.

The Association of the United States Members of the International Institute of Space Law will hold its annual meeting during the forthcoming American Society of International Law (ASIL) meeting in Washington, D.C., April 27-29, 1978, following a "Space Law Workshop" to be jointly sponsored by the ASIL, the ABA International Law Section (Aerospace Law Committee) and the Association. The key-note speaker will be Dr. T. Stephen Cheston, Associate Dean of the Graduate School of Georgetown University who will speak of the NASA Ames study undertaken during the past few summers and will relate problem areas encountered during the study of space habitats and stations that he believes require legal analysis and guidance. After his presentation on "space stations and habitats" four panelists will further interrogate Dr. Cheston and comment on his remarks. A panel discussion will follow in which all attendees are encouraged to participate.

On May 2, 1978, the University of Akron School of Law will hold a round table discussion on the legal questions and problems arising out of the descent of the Russian satellite over Canadian territory earlier this year.

There will be a session devoted to problems of space law during the Manila World Conference of the International Law Association, Aug. 27-Sept. 2, 1978.

Space Manufacturing Facilities - Space Colonies, Volumes 1 and 2, edited by Dr. Jerry Grey, published by American Institute of Aeronautics and Astronautics (1290 Avenue of the Americas, New York, NY 10010).

The vision of habitats offering new modes of life for mankind in outer space has sparked the interest and imagination of the entire world. The first technical papers on this topic included an article in the September 1974 *Physics Today* by Dr. Gerard O'Neill of Princeton University. The interest generated therefrom quickly led to the 1974 Princeton Conference on the Colonization of Space, the 1975 NASA-Ames/ Stanford University Summer Study on Space Colonization, and the 1975 and 1977 Princeton Conferences on Space Manufacturing Facilities.

Space Manufacturing Facilities - Space Colonies bring together all the material from these meetings. Volume 1 includes the proceedings of the 1974 and 1975 Princeton meetings and a precis of the Summer Study; Volume 2 is devoted solely to the 1977 Princeton Conference. Both contain the basic thinking on all aspects of the space habitat idea, *viz.,* technical, economic, social and human.

Thoughts on the legal implications of space habitats and manufacturing facilities became a feature of the Princeton meetings in 1975. For the space lawyer, the papers in Volume 1 by Richard Falk, Konrad Donnenberg, Edward Finch, and Gus Rauschenbach provide much thought-provoking material on self-government, organization possibilities, international space law, and the model of Intelsat in an area where legal studies lag considerably behind the technology.

The Honorable Peter Jankowitsch, Austrian Ambassador to the UN, addressed the international and legal considerations of space structures in Volume 2. He dealt most specifically with the 1967 Outer Space Treaty and listed the "basic principles of international space law" applicable to space facilities, i.e., those provisions that deal with obtaining nonterrestrial resources, the provision that a nation retains jurisdiction over its own objects in space, and the provision that bases have to be open to members of other nations as long as there is sufficient advance notice. In effect, Jankowitsch restated the remarks on international space law made in 1975 sessions, but often with a different emphasis. He did not address the legal aspects of the internal regime and organization of space facilities which Finch considered briefly in Volume 1. Jankowitsch made a strong appeal for early international consideration of the complex problem of the legal basis for space manufacturing facilities, particularly within the United Nations.

No author provides solutions to legal issues basic to space facilities development such as defining the legal notion of the moon's resources, prevention of pollution, and military use of space. Space habitats are expected to be built and maintained with materials from the moon and asteroids. Such space mining would be directly affected by

the terms of the Draft Moon Treaty which is currently before the United Nations Committee on the Peaceful Uses of Outer Space.

By what right will mining take place if the exploitation of outer space and celestial bodies is for all mankind and beyond national jurisdiction, according to the Outer Space Treaty? An analogy to the legal developments in deep seabed mining comes to mind, and the lessons from the Law of the Sea negotiations should not be ignored. Jankowitsch provides an excellent summary of the debate over the terms "common heritage of mankind" and "common province of all mankind." These phrases are not distinctions without a difference. The latter term is from Article 1 of the Outer Space Treaty and is felt to be less prejudicial and hence less likely to cause legal wrangles if included in the Draft Moon Treaty. The meaning of its application to space facilities is very much an open question. The problems for outer space enterprises will be comparable if not greater than those on the high seas and deep seabed, unless the legal order keeps pace with the technology. A great deal of effort needs to be made in getting the necessary legal work ready for the successful and peaceful development of space manufacturing facilities and space habitats.

In general, the AIAA is to be congratulated on the two volumes. The summary provided on each Conference makes an excellent introduction to the technical papers for anyone with a nonscientific background. The scientific papers are to be recommended in themselves as they forecast the areas which will require law and regulations in the near future. The diagrams and pictures, while only in black and white, have excellent clarity. The inclusion of questions and answers after each paper gives a prompt clarification of points made. All the material shows that the interaction of minds from different disciplines often provides useful material as ideas must be more clearly and simply explained. The challenge is now for the legal profession to make space habitat studies of its own. All subsequent publications on the topic should endeavor to reach the same high quality of work attained in both *Space Manufacturing Facilities - Space Colonies* volumes.

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International Commercial Satellite Communications: Economic and Political Issues of the First Decade of INTELSAT, by Marcellus S. Snow (Praeger Publishers, New York, Washington, London, 1976, pp. 170).

Outer Space and Inner Sanctums: Government, Business, and Satellite Communication, by Michael E. Kinsley (John Wiley & Sons, New York, London, Sydney, Toronto, 1976, pp. 280).

These two authors take opposing positions concerning the benefits which commercial communications satellites have brought to the United States through COMSAT and to the world through INTELSAT. Kinsley argues that communications satellite technology was captured by vested common carrier interests, principally AT&T, with stakes in less efficient, but more profitable techniques, particularly cables. The consequence has been that the benefits of the new technology to the American consumer, whose tax monies made satellite communications possible in the first place, have been much slower in coming than they would have been in a government-owned venture. Furthermore, Kinsley contends that INTELSAT "has failed to achieve 'world peace and understanding' because it still makes it impossible for the Soviet Union to join the system." (p. 129)

Marcellus S. Snow focuses on INTELSAT, not COMSAT, but he maintains that INTELSAT "has been doing a tolerably good job based on the criterion by which it should be properly judged, which is the interest of the consumers in its various member countries." (p. vii) Snow's most original contribution is as an economist examining the cost and tariff structure of the space segment of INTELSAT. He presents a very sophisticated analysis, which requires of the reader an understanding of marginal cost pricing and average cost pricing. He does investigate more visible political issues as well, e.g., the establishment of separate systems and the question of subsidies. His general conclusion is that "INTELSAT has functioned well precisely because it has functioned on an economic basis, and that it would have functioned less well if it had simultaneously been required to fulfill noncommercial purposes." (p. 144) Snow points to the experience of INTERSPUTNIK and EURATOM which demonstrate that the mandate to achieve political goals in addition to economic utility can undermine the efficiency of an organization.

Is it possible to resolve the disagreement between these two authors, one an economist at the University of Hawaii and the other an associate of Ralph Nader and editor of *The New Republic*? Not on economic grounds. Their differences are not based on factual errors. Both books are clearly written, thorough analyses firmly based on primary sources. Rather, the incompatibility can be explained by the authors' differing expectations. Kinsley sees some progress on costs, but he wants more, while Snow sees solid accomplishment and is basically satisfied. However, it appears that Snow is the more correct insofar as the political purposes of INTELSAT are concerned. A commitment to too many extraneous political goals could very well undermine the functional integrity of INTELSAT. Furthermore, it is thought that Snow is in error when he contends that INTELSAT "makes it impossible for the Soviet Union to join the system." The USSR could join INTELSAT, but for political, not economic, reasons, they do not so choose.

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Communications Via Satellite: A Vision in Retrospect, by Delbert D. Smith (A. W. Sijthoff, Leyden, The Netherlands, 1976, pp. 335).

In this informative and well-reasoned study, Dr. Smith traces the development of communications satellites from the dreams of the 1800's to the realities of the 1970's. He examines in detail the dreams of early visionaries and follows their development through the creation of the National Aeronautics and Space Administration, COMSAT, INTELSAT and the domsats, discussing the interactions between various interest groups, regulatory bodies and international organizations.

Dr. Smith notes that several conclusions have been drawn from the technological achievement of communication by satellite. Specifically, the capability of government, and in particular of NASA, dramatically to advance technology is past debate. It has also been established that public benefit can result from a government research and development program. What has not been identified in the historical sequence is the meaning of the development process for the role of government in regard to new technologies and the rise of already developed technologies.

The monograph is eminently useful since it embodies the author's concern with the legal and socio-political implications of the development of satellite communication. The increased use of communication satellites has evolved as a product of a series of events which include interrelated legal, technical, political, and institutional factors. The book encompasses all of these factors in a unified picture to enhance public understanding of these events.

Besides dealing with the contemporary socio-historical process that has created the new technology of satellite communication, the study also develops a model which can be used for evaluating future developments of space applications in the socio-political and legal context. The policy issues and strategies pertaining to communication satellites are developed into a "space technology integration" model that is both a predictive and analytic tool. This should be of considerable value in future applications of satellite technology to socio-political and technical as well as legal problems.

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